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Reading Outcomes of Pre-Literate 3rd-Grade Students after
Two Years of Combined Reading Classroom Instruction and
Individualized Intervention or Classroom Instruction Alone

By

Jon T. Lopez

A Dissertation

Presented to the Faculty of
The Graduate College of the University of Nebraska
In Partial Fulfillment of Requirements

For the Degree of Doctor of Education
In Educational Administration

Omaha, Nebraska

October 2008

Supervisory Committee

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ABSTRACT

READING OUTCOMES OF PRE-LITERATE 3rd-GRADE STUDENTS AFTER
TWO YEARS OF COMBINED READING CLASSROOM INSTRUCTION AND
INDIVIDUALIZED INTERVENTION OR CLASSROOM INSTRUCTION ALONE

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This study was conducted to determine the effectiveness of a combination regular classroom reading and reading reteaching approach to teaching reading to pre-literate 3rd-grade students who were determined to be below proficient readers ($n = 14$) compared to the effectiveness of regular classroom reading instruction alone provided to 3rd-grade readers ($n = 14$) determined to have barely proficient pre-literate skills. Barely proficient and below proficient reading level designations were determined by psychometrically derived cutscores developed in order to minimize classification error. This study found that although students on both sides of the cutscore made achievement gains in reading, gains were not all statistically significant and the students determined to be barely proficient receiving regular classroom reading instruction alone experienced greater reading achievement progress than their peers who were determined to be below

proficient and received reading reteaching in addition to regular classroom reading instruction. With additional research in effective reading strategies, evaluation of the effectiveness of building level programs, additional individualized reading instructional support, and one robust reading intervention, not two separate activities--regular classroom reading plus reading reteaching--for students correctly identified as below proficient, consistent gains should be expected.

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I would like to express my appreciation to the faculty at the University of Nebraska, particularly Dr. John Hill chair of the Department of Educational Administration for his service as my committee chair. Dr. Hill was instrumental in helping me wrap my arms around the stages of my studies and this dissertation while I simultaneously took on a challenging new position at the district level within the Millard Public School system. Dr. Hill's encouragement, guidance, and sense of humor kept me on the right track. I'd also like to thank the members of the faculty who have served on my committee in addition to Dr. Hill. Dr. Peter Smith, Dr. Neal Grandgenett, and Dr. Larry Dlugosh are all admired and esteemed professionals in the field of education and it has been my honor to work under their guidance.

During my time in the doctoral program, I've had many influential instructors. I'd like to particularly recognize and praise Dr. Gary Hartzel (Retired) and Dr. Leon Dappen (Deceased) both of whom greatly influenced my work as a school administrator.

I've had the good fortune of working in three very effective, yet diverse school districts in Nebraska as a school administrator over the past fifteen years. My

experiences in the Millard Public Schools, the Plattsmouth Community Schools, and the Omaha Public Schools has given me a broad perspective of education and a deep appreciation for diversity and the need to try a variety of interventions until you get it right. Along the way, I've worked with and learned from many talented and committed people, and been around some fantastic kids each of whom I deeply appreciate.

The two most fantastic kids of all are my own children Tori and Tomas. They are the reason for my commitment to schools, the kids who attend them and the adults who work there. Helping to make schools effective for them is a huge motivation for me. I'm deeply appreciative to my wife Kelly who has endured years of my hours of study and work as a teacher, coach, and administrator over the past 20 years. She understands my passion for what I do and has been so supportive. I can't thank her enough.

I have the best family in the world. My brothers Fred, Ed, and my sister Monica have been my informal teachers my whole life. They have walked before me and shown me the way. They have encouraged and supported me in every endeavor as long as I can remember. Everything that I do, I have learned from them.

Finally, I dedicate this dissertation to my mother, Teresa Lopez and my dad, the late Fred Lopez. It is simply an honor to be their son. My parents were the epitome of work ethic and commitment. They always made sure that my siblings and I were pointed in the right direction and always placed others before themselves. I hope that somehow my work is reflective of the lessons that they have taught me and that in some way, someone works harder, and achieves more because of what my parents passed on to me.

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CHAPTER ONE

Introduction

The role literacy plays in the life course of Americans has increased in importance exponentially over the past one hundred years as our economy and society has made the transition from an existence grounded first by agriculture, followed later by industry, and now fully immersed in the information age of the 21st Century (Center for Educational Research and Innovation, 1992; Costa, 1988; Roman, 2004). A body of research indicates that the literacy level of adults in the United States is an important predictor of individual wellbeing as well as the wellbeing of society as a whole. A recent study of literacy in older adults conducted at Miami University in Oxford Ohio (2004) found that the benefits of technological advancements in this age of information are unevenly distributed among the American population in part due to issues of illiteracy. In this study, Roman (2004) indicates that illiterate adults experience poorer health, less financial security, and lower life expectation compared to the overall wellbeing of literate adults in the general population.

Furthermore, research worldwide (Roman, 2004; Smits & Gundz-Hesgor, 2003) indicates that limited acquisition of

linguistic capital results in an overall lower standard of living. Literacy meta-study data, when disaggregated, clearly indicate that the benefits associated with life in this information age are more difficult to attain for adults from lower socioeconomic backgrounds and minority groups most often affected by early negative reading experiences particularly when they began schooling not prepared for early literacy success (Kivisto, 2004; Roman 2004). The economic and social gap that is consequent to diminished literacy skills only widens as existing communicative differences increase (Ceci & Papierno, 2005).

In 2003 a study of the literacy level of American adults that was commissioned by the National Center for Educational Statistics (NCES), daily literacy activities were categorized into three distinct areas for definition. These were (a) prose literacy, which is the ability to read and understand literature such as newspapers and brochures, (b) document literacy, which is the ability to read and comprehend continuous text such as a set of instructions or map reading, and (c) quantitative literacy, which is characterized by the ability to perform sequential reading tasks involved in activities such as completing an order form or balancing a checkbook. The NCES (2003) study estimated that in 2003 some 30 million American adults were

below the basic reading level in prose literacy; 27 million were below the basic level in document literacy, and 46 million were below the basic level in quantitative literacy. When disaggregating this information, the study indicated a gap in reading ability between Caucasian adults and their minority peers that has been widening over the past many years (Kutner et al., 2003).

The understanding of the impact that literacy has throughout the life course of individuals necessitates early and intense reading interventions for students who are not proficient at the earliest possible age (Bukowiecki, 2007; Carreker et al., 2007; United States Department of Education, 2002). Teaching reading is a complex learning process that begins long before children enter school. The adult and child reading interaction during the first few years of childhood are paramount to cognitive literacy development and an early attraction to the thoughts and feelings expressed in books that a child undergoes before his or her first formal educational experience. The impact of this interaction is not limited to the mere existence of reading activities between adults and children, but is enhanced by the level of cognitive complexity that is involved in the approach or style of the activity in which the adult and child are engaged.

Traditionally, the initial adult and child reading interactions occur between the parent and the child employing read aloud activities. The level of cognitive complexity of the first reading interactions is largely shaped by the level of cognitive ability and prior reading experiences of the parent (Kivisto, 2004; Zeece, 2007). Adult and child reading interactions can generally be identified as employing one of three approaches. These approaches are (a) didactic-interactional, (b) performance oriented, and (c) co-constructive. Didactic-interactional adult and child reading interactions require the lowest level of cognitive demand. The activity is largely adult centered and calls for the child to probe for literal information from text rather than drawing relationships between the story content and the child's life experiences. In this model, there is limited verbal interaction beyond repetition. The performance oriented adult and child reading approach calls for a higher level of cognitive complexity as the child is prompted to make links between the story and his or her own experiences. The approach receives its name from the dramatic or performance-based style of reading in which the adult engages, using pitch, tone, and inflection that turn words into prompts and visual representations. In this style of reading, there are

frequent pauses to encourage comprehension. Co-constructive adult and child reading interaction calls for the highest level of cognitive complexity. The less dramatic style of interaction is somewhat adult-centered, yet it calls for the child's understanding of not only content, but storyline as well. The cognitive complexity comes when the adult and child engage in conversation that involves joint reflection about the meaning of the text (Zeece, 2007).

It is the primary years of school, kindergarten through 3rd-grade that are most critical in the process of learning to read. While parents are a child's first reading teacher by age six, the classroom teacher assumes the primary responsibility for providing systematic technical reading instruction to children. From the very beginning a gap exists between students who have had positive or poor early literacy experiences. Over time this gap is amplified, but can be significantly affected if the appropriate interventions are employed (Carreker et al., 2007). Francis and colleagues (1996) and Shaywitz et al. (1999) indicate that students who read poorly and those who read well are on the same longitudinal trajectory, but plateau at different levels. Early effective literacy instruction enhances the probability of cumulative longitudinal advancement for all students (Crijren, Feehan,

& Kellam, 1998; Moore & Wade, 1998). Traditional reading instructional models such as those based on the predominant use of basal readers have at times been criticized for teaching isolated skills, with text that may not be particularly meaningful, while relying on an overabundance of worksheets (Ediger, 2004). There are a number of effective instructional models that enhance traditional approaches that in turn maximizes the literacy potential for many students.

One such model is language enriched reading instruction that builds comprehension skills by emphasizing phonemic awareness, decoding skills, word recognition fluency, text comprehension, and construction of meaning (Snow, Burns, & Griffin, 1998). A longitudinal study conducted by the Neuhaus Education Center in Houston Texas (2007) in conjunction with the University of Houston-Downtown, supports the notion that language enriched instruction contributes to a greater level of literacy attainment for all students regardless of starting point. In the Neuhaus Education Center study the researchers created two true cohort matched groups of students attending the Brownville Texas School District kindergarten through 5th-grade. By the end of the study, there were 536 students remaining in the cohort. All students received

traditional classroom reading instruction in kindergarten and grades 3, 4, and 5. Some students in the cohort, received language enriched instruction in grades 1 and 2, while the remaining students received traditional instruction in grades 1 and 2. Hierarchical linear modeling confirmed that the students receiving language enriched instruction had significant advantaged growth in reading comprehension as measured by the Texas Assessment of Academic Skills (TAAS) when compared to the matched group (Carreker et al., 2007).

In 2000 the National Institute of Child Health and Human Development commissioned its National Reading Panel to conduct a study of efficacious reading instructional practices among teachers of reading across the country. The results of this evidence-based assessment of scientific research on reading garnered five key components to effective reading instruction. The five key efficacious reading instructional components focus on (a) phonemic awareness, (b) phonics, (c) fluency, (d) vocabulary, and (e) text comprehension. The panel asserted that these components when included in daily instruction would significantly increase literacy skills in young students regardless of their early literacy deficits. The recommendations of this panel have influenced the

frameworks of many state departments of education in the development of their reading instruction and assessment programs (Bukowiecki, 2007).

Given the existence of the body of research that has identified effective instructional practices in the area of literacy instruction for children, it is imperative that schools and school officials examine the instructional practices that are operational within their organizations and determine if they are not only in alignment with contemporary research, but in fact effectively addressing the needs of all children in the literacy development process. This is particularly true for children--through no fault of their own--who come to school with no significant repertoire of positive literacy experiences and, therefore, face a lifetime of school and work failure without thoughtful and immediate intervention.

Purpose of the Study

The purpose of the study was to examine the achievement outcomes of 4th-grade students, identified in the 3rd-grade as not proficient in reading, after completing two years of regular classroom reading instruction used in combination with required individual learner plan reading re-teaching intervention (RCRI + ILPRRI) compared to the achievement outcomes of 4th-grade

students, identified in the 3rd-grade as barely proficient in reading, who completed regular classroom reading instruction alone (RCRIA).

Research Questions

The following research questions were used to analyze student participation in ILPRRT and RCRIO measuring norm-referenced achievement outcomes.

Overarching Pretest-Posttest Norm-Referenced Achievement Research Question #1: Do students who participate in the RCRI + ILPRRI and the RCRIA lose, maintain, or improve their 3rd-grade Terra Nova achievement scores compared to their 4th-grade Terra Nova achievement scores for (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies subtests?

Sub-Question 1a. Is there a significant difference between students' ending 3rd-grade compared to ending 4th-grade Terra Nova mastery percent achievement scores for (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies scores after completing RCRI + ILPRRI?

Sub-Question 1b. Is there a significant difference between students' ending 3rd-grade compared to ending 4th-grade Terra Nova mastery percent achievement

scores for (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies scores after completing RCRIA?

Overarching Posttest-Posttest Norm-Referenced Achievement Research Question #2: Do students who participate in the RCRI + ILPRRI and the RCRIA have congruent or different ending 4th-grade Terra Nova mastery percent achievement scores for (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies subtests?

Sub-Question 2a. Is there a significant difference between RCRI + ILPRRI students ending 4th-grade Terra Nova mastery percent achievement scores for (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies subtests compared to RCRIA students ending 4th-grade Terra Nova achievement scores for (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies subtests?

The following research questions will be used to analyze student participation in RCRI + ILPRRI and RCRIA measuring criterion-referenced achievement outcomes.

Overarching Pretest-Posttest Criterion-Referenced Achievement Research Question #3: Do students who participate in the RCRI + ILPRRI and the RCRIA lose,

maintain, or improve their 3rd-grade Essential Learner Outcome (ELO) scores compared to their 4th-grade ELO scores for (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, (e) Reading Word Analysis, and f) Total Score?

Sub-Question 3a. Is there a significant difference between students' ending 3rd-grade compared to ending 4th-grade ELO scores for (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, (e) Reading Word Analysis, and f) Total Score after completing RCRI + ILPRRI?

Sub-Question 3b. Is there a significant difference between students' ending 3rd-grade compared to ending 4th-grade ELO scores for (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, (e) Reading Word Analysis, and f) Total Score after completing RCRIA?

Overarching Posttest-Posttest Research Criterion-Referenced Achievement Question #4: Do students who participate in the RCRI + ILPRRI and the RCRIA have congruent or different ending 4th-grade Essential Learner Outcome (ELO) scores for (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d)

Reading Vocabulary, (e) Reading Word Analysis, and (f) Total Score?

Sub-Question 4a. Is there a significant difference between RCRI + ILPRRI students ending 4th-grade ELO scores for (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, and (e) Reading Word Analysis compared to RCRIA students ending 4th-grade ELO scores for (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, (e) Reading Word Analysis, and (f) Total Score?

Overarching Posttest-Posttest Essential Learner Outcome Research Question #5. Is there a significant difference between RCRI + ILPRRI and RCRIA students' ending 4th-grade Essential Learner Outcome criterion referenced achievement test proficiency levels based on psychometrically derived cut scores?

Sub-Question 5a. Is there a significant difference between RCRI + ILPRRI students' ending 4th-grade reported proficiency level cut scores for (a) below proficient, (b) barely proficient, (c) proficient, and (d) beyond proficient categories compared to RCRIA students' ending 4th-grade reported proficiency level cut scores for

(a) below proficient, (b) barely proficient, (c) proficient, and (d) beyond proficient categories?

Assumptions

This study has several strong features. All students in the research school district receive instruction in a reading curriculum that has been developed using rigorous standards and that has been determined to exceed the academic standards required by the Nebraska Department of Education. The district's reading curriculum is horizontally articulated--constantly taught by teachers at the same grade level--across the district at all grade levels and in each school. Professional Learning Communities (Du Four, Eaker, Karharek & Du Four, 2004) were used exclusively as the model upon which teachers in the district ensured the horizontal articulation of the curriculum utilized each day and also agreed upon the weekly course assessments. Elementary school teachers in the research school district meet each week for three hours by grade level in order to carry out these tasks.

The research school district Essential Learner Outcome Reading Exams have test items and distracters developed in conjunction with highly qualified teachers and reading curriculum supervisors using the services of an outside the school district contracted professional test item writer.

All Essential Learner Outcome exams undergo a rigorous pre-pilot and pilot test to ensure item quality. Following pilot testing, separate groups of professional educators judge the assessment for curriculum alignment, test bias, and sufficiency of items which accurately diagnose students with ability levels at the below proficient, barely proficient, proficient, and beyond proficient levels.

Cut scores for all ELO exams were established using multiple methods to ensure accuracy. These methods include global rating (predicting current student performance at four levels of proficiency), the Angoff Method (item analysis), and teacher professional judgment (consensus for lower reading group placement) (Impara, Plake & Irwin, 2000). These processes are carried out under the direction of the Buros Center for Mental Measurements at the University of Nebraska. In 2007, the reading assessment process underwent a rigorous review by the Nebraska Department of Education and received a rating of exemplary.

Reading scores derived from the elementary Reading ELO are reported to the Nebraska Department of Education School-based, Teacher-led Assessment and Reporting System (STARS) reporting as well as for federal Adequate Yearly Progress (AYP) under the United States Department of Education's No Child Left Behind Law. Annually, students in

the research district and school, score above the state and national averages in reading for both STARS and AYP.

Furthermore, students in the research district and school annually score above the state levels in other STARS and AYP reported exams including math and writing. Students in this district and school also produce a norm curve equivalent on the Terra Nova Exam that is above the national average.

It is required that each school in the research district have in place, a Pyramid of Interventions so that timely and appropriate re-teaching and remediation can be provided for all students who fail to score at the barely proficient level. All teachers in the research district have received training in the (a) Robin Hunter Mastery Teaching Model (2004), based on the work of her mother, the late Madeline Hunter (1983) and (b) differentiation of instruction. It is required that all students failing to score at the barely proficient level have in place, an Individual Learning Plan (ILP) that is based on a review of data which indicates specific areas of academic weakness based on test sub-scale scores and item analysis. Each ILP must include a description of the mode, frequency, and duration of the required interventions. Students attended the same research school for four years.

Delimitations of the Study

This study was delimited to the 4th-grade students of a suburban school district and school who were in attendance in 2004-2005 for 3rd-grade, and 2005-2006 for 4th-grade. All 3rd-grade and 4th-grade students were required to take the district ELO Exam in Reading in the spring of each of the aforementioned school year. All 3rd-grade and 4th-grade students were required to take the Terra Nova Norm Referenced Test in the fall of each school year.

Limitations of the Study

This exploratory study was confined to one 4th-grade class of students at one research school who participated in regular classroom instruction in reading and reading re-teaching activities based on not proficient and barely proficient reading ELO scores. The Terra Nova Reading scores will be limited to tests administered in 3rd-grade and 4th-grade to indicate progress toward the acquisition of reading skills as a result of student participation in required reading intervention activities. The small sample size may skew the statistical results.

Definition of Terms

Barely proficient rating. Barely proficient rating is defined as an indicator of a student's performance level on

a particular criterion referenced assessment based on an established cut score. A student with a barely proficient rating, scores within a range of scores just above the lowest cut score on a multi-level proficiency scale. Students scoring in this range are perceived to have below average academic ability in the related curriculum area.

Basal readers. Basal readers are defined as textbooks used to teach reading and associated skills to children. Commonly called *Reading Books*, they are usually published as anthologies that combine previously published short stories, excerpts of longer narratives, and original works.

Beyond proficient rating. Beyond proficient rating is defined as an indicator of a student's performance level on a particular criterion referenced assessment based on an established cut score. A student with a beyond proficient rating, scores within a range of scores above the highest cut score on a multi-level proficiency scale. Students scoring in this range are perceived to have above average academic ability in the related curriculum area.

Co-constructive reading interaction. Co-constructive reading interaction is defined as a collaborative approach to reading instruction that focuses on children's understanding of a story as well as its content. The driving strategy to this approach is the joint reflection

that takes place between the adult and the child while the story is being read. During this interaction, the adult reader helps the child make connections between their experiences, emotions, and their understanding of the story.

Criterion referenced test. A criterion reference test is defined as a test in which the questions are written according to specific predetermined criteria such as an established academic curriculum in which students have received instruction prior to the administration of the test.

Construction of meaning. Construction of meaning is defined as the process that takes place during or after a reading or writing activity in which interplay exists between the reader's experience and the text to determine the meaning of the written communication (Langer, 1986).

Didactic-interactional reading interaction. Didactic- interactional reading interaction is defined as reading interaction between an adult and a child that focuses on the gathering of literal information from the text of the book rather than on the relationship between the story content and the children's personal experiences.

Document literacy. Document literacy is defined as the knowledge and skills needed to perform document tasks

(i.e., to search, comprehend, and use information from non-continuous text in various formats). Examples of such text include maps, menus, and drug and food labels.

Essential learner outcome exams. Essential learner outcome exams are criterion-referenced tests given to all students in grades one through eleven in the Millard Public Schools in Omaha, Nebraska. The purpose of these assessments is to determine the level of proficiency that students have achieved with the local curriculum that is aligned with state standards. Results of these tests are used to inform educators and parents of the progress of children, which includes required intervention for students below proficient performance. The results for students in certain grades are also used for No Child Left Behind requirements as well as for state reporting. The Millard Essential Learner Outcome Exams are also *high stakes* graduation requirements.

Individual learner plan reading reteaching intervention. Individual learner plan reading reteaching intervention is defined as a required prescribed plan of instruction in reading for students who have failed to attain the established cutscore on the district criterion referenced reading assessment at any grade level in the Millard Public School district.

Language enriched reading instruction. Language enriched reading instruction is defined as an instructional approach based on a technique of studying and teaching language, understanding the nature of human language, the mechanisms involved in learning, and the language-learning processes in individuals.

Normal-curve equivalent. Normal-curve equivalents are standard scores with a mean equal to 100 and a standard deviation equal to 21.06.

Norm referenced test. A Norm referenced test is defined as an assessment where student performance or performances are compared to a larger group. Usually the larger or *normative group* is a national sample representing a wide and diverse cross-section of students. Students, schools, districts, or even states are then compared or rank-ordered in relation to the *normative group*. The purpose of a norm-referenced test is to measure student achievement compared to others performance on the same measures.

Not proficient rating. Not proficient rating is defined as an indicator of a student's performance level on a particular criterion referenced assessment based on an established cut score. A student with a not proficient rating, scores within a range of scores below the lowest

cut score on a multi-level proficiency scale. Students scoring in this range are below to significantly below average academic ability in the related curriculum area.

Performance oriented reading interaction. Performance oriented reading interaction is defined as a reading interaction between an adult and child that employs a variety of dramatic techniques such as word illustrations as well as auditory and visual props to tell a story from text. After a story is shared, conversation is used as a pedagogical vehicle to create meaningful links between the story or parts of the story and children's experiences.

Phonemic awareness. Phonemic awareness is defined as the ability to hear and manipulate sounds and words.

Phonics. Phonics is defined by the relationship between letters and sounds in language.

Proficient rating. Proficient rating is defined as an indicator of a student's performance level on a particular criterion referenced assessment based on an established cut score. A student with a proficient rating, scores within a range of scores above the mid-range cut score on a multi-level proficiency scale. Students scoring in this range are perceived to have average academic ability in the related curriculum area.

Prose literacy. Prose literacy is defined as the knowledge and skills needed to perform prose tasks (i.e., to search, comprehend, and use information from continuous texts). Examples of such text include news stories, and brochures. Furthermore, prose texts can be divided into the following categories: expository, narrative, procedural, and persuasive.

Quantitative literacy. Quantitative literacy is defined as the knowledge and skills required for performing quantitative tasks (i.e., to identify and perform computations, either alone or sequential, using numbers embedded in printed materials). Examples include balancing a checkbook or completing an order form.

Read-aloud activities. Read-aloud activities are defined as shared reading experiences, usually between an adult and a child or children. Although read-aloud activities may be practiced with and between readers of any age, they are most often employed with younger children.

Regular classroom reading instruction. Regular classroom reading instruction alone is defined as the general instructional strategy used in the Millard Public Schools. Specifically for this study, the primary instructional model is the use of the Harcourt Trophies series both the anthologies and workbook programs. This

series is augmented by basal readers and skill-based instruction including phonics, phonemic awareness, fluency, and vocabulary.

Reading decoding. Reading decoding is defined as the ability to pronounce a word by applying knowledge of letter/sound correspondences and phonetic generalizations.

Regular classroom reading instruction. Regular classroom reading instruction is defined as teaching and curricular strategies that, although are likely to include a variety of differentiated lesson design and delivery systems, are provided to the larger proportion of a school population on a daily basis in the regular classroom setting.

Required individual learner plan. A required individualized learner plan is defined in the Millard Public School System in Omaha, Nebraska as a re-teaching intervention plan that is required by board policy to be developed for each student who obtains a rating of Not Proficient on any of the district's Essential Learner Outcome Exams. The plan must include teaching interventions beyond regular classroom instruction.

Re-teaching. Re-teaching is defined in the Millard Public School District as prescribed and specific instructional intervention that is provided to a student

who has obtained a rating of Not Proficient on any of the district's Essential Learner Outcome Exams. Re-teaching activities focus on specific enabling skills that students have failed to demonstrate master of on the district exam. Re-teaching activities encompass a variety of techniques, programs, and strategies beyond the regular instructional repertoire of a school. They can include but are not limited to before and after school programs, pullout programs, or additional in-class assistance.

Standard setting. Standard setting is defined as the psychometric process of determining the cut scores that divides a range of scores on an exam into various levels of proficiency. This process includes at least three and usually four simultaneously applied methods to ensure the validity of the cut scores.

Text comprehension. Text comprehension is defined as intentional thinking during which meaning of text is constructed through interaction between text and the reader.

Word recognition fluency. Word recognition fluency is defined as the ability to easily read text with automatic word recognition, rapid decoding, and checking for meaning.

Significance of the Study

This study has the potential to contribute to research, practice, and policy. The study is of significant interest because of the critical role that reading literacy plays in the acquisition of overall academic skills and the subsequent life-path that follows each individual as reflected by their individual literacy skills. By understanding the results of this study, parents, teachers, and administrators will be able to decide what interventions may best serve poor and struggling young readers.

Contribution to Research. A body of research exists that indicates the importance of the acquisition of literacy skills. Contemporary literature offers a variety of instructional strategies that have proven effective in improving reading skills for young readers. The results of this study may inform theoretical literature on the effectiveness of intense re-teaching interventions on young readers determined to be not proficient and barely proficient at the beginning of the 3rd-grade.

Contribution to Practice. Based on the outcomes of this study, the research district may determine that if effective the re-teaching intervention program required for students determined to be not proficient at the research

school may be expanded and offered to students determined to be barely proficient across the research district.

Contribution to Policy. Local level policy will be impacted by this study. Results show the impact of re-teaching interventions and regular classroom instruction on the ability of poor and marginal readers to improve reading skills, the researched district and perhaps other local districts in the Learning Community may decide to expand, limit, or adjust the use of such strategies and interventions for all or many such readers.

Organization of the Study

The literature review relevant to this study is presented in Chapter 2. Chapter 3 describes the research design, methodology, and procedures used to gather and analyze the data of the study. Chapter 4 reports the research results and Chapter 5 provides conclusions and discusses research findings.

CHAPTER TWO

Review of Literature

Literacy Developmental Milestones

The development of reading skills in young learners is largely dependent upon their obtainment of literacy milestones considered critical before they enter 3rd-grade. For example, the level of early language skill development, particularly language production is dependent upon child to mother and mother to child bonding, maternal interaction (Morris, Bloodgood, & Perney, 2003; National Institute of Child Health and Human Development, 2002; Tamis-LeMonda, Bornstein, & Baumwell, 2001;), acquisition of verbal skills (De Boysson-Bardies & Vihman, 1991; Hammill & McNutt, 1980; Molfese et al., 2006; Weaver & Kingston, 1972), and phonological stimulation (Armstrong, Stokoe, & Wilcox, 1994; Eckert, Lombardino, & Leonard, 2001; Nathan & Stonvich, 2007; Parton, 1976) which all have a significant impact on the acquisition of later reading skills.

Maternal interaction. Studies of cognitive processes have historically suggested that when infants are presented with early, persistent, and nurturing phonological stimulation they will predictably develop early sound-symbol and alphabetic reading skills leading to later

reading success (Hammill & Mc Nutt, 1980; Torgesen, Wagner, Simmons, & Laughon, 1990; Weaver & Kingston, 1972).

Maternal interaction and responsiveness with infants and toddlers play a major role in the earliest of childhood cognitive development. During the first and second years of life this interaction has significant impact on a child's first instances of sound imitation, word development, early attempts at expressive language, and combinatorial speech (Bornstein & Baumwell, 2001; Pullen & Justice, 2003; Tamis-LeMonda). Phonologically embedded interaction of adults directed toward children through exploration of objects, play, and vocalization reinforce and build a repertoire of verbal skills in children in this early age group that leads to the advancement of word association to objects and activities that the child wants and needs (Bukowiecki, 2007; National Institute of Child Health and Human Development, 2000). This ability to associate verbalization and response by the child supports the advancement and promotion of self-efficacy toward language development (Pine, 1995; Tamis-LeMonda, Bornstein, & Baumwell, 2001).

The acquisition of verbal skills. The development of early verbal skills plays a major role in the eventual acquisition of reading skills as children apply phonological skills toward word development and eventually

word recognition (Eckert, Lombardino, & Leonard, 2001). A species-wide capacity for verbal skill development exists regardless of language or dialect. As infant phonetic activities progress from babbling to the acquisition of the first 25 words, it has been noted that early language development requires that this capacity be shaped into specific patterns that are determined by the language of origin and dialect. The attainment of certain articulation milestones does vary between languages depending upon the complexity in the use of linguistic movements such as labials, affricates, or velars, which are articulation skills using the tongue, lips, and palate, however the progression from morphemes and phonemes to word development is universal (De Boysson-Bardies & Vihman, 1991).

Phonological stimulation. Phonological stimulation is key in the development and acquisition of language skills. Multiple theories concerning the origin and evolution of human language often conflict on many elements of language development. However, these theories generally agree that the normal infant acquisition of any language or dialect depends upon the mastery of the linguistically anatomical movements that are learned during the practice of using the smallest meaningful sound units and movements referred to as morphemes and phonemes.

In order to imitate and then practice these sound units, phonological behaviors must first be demonstrated for the infant. This then stimulates the perceptive sensory mechanisms such as sight and hearing which in turn leads to sound imitation, conditioning, and memorization. This process allows the infant to process this information and produce a response that matches or is similar to the phonological behavior of the demonstrator (Armstrong, Stokoe, & Wilcox, 1994; Eckert, Lombardino, & Leonard, 2001; Nathan & Stonvich, 2007; Parton, 1976; Whitehurst & Lonigan, 1998).

Reading Development

By the time a child reaches kindergarten they have accumulated a constellation of language skills from which they draw upon as they encounter formal reading instruction in a school setting for the first time. The successful enduring acquisition of effective reading skills for children is largely dependent upon educator's understanding of the typical reading skills that are demonstrated by the normally developing emerging reader (Botzakis & Malloy, 2006; Jordan, Snow, & Porche, 2000; Snow, Burns, & Griffin, 1998), a continued stimulating home language environment (Bailey, 2006; Drummond & Stipek, 2004; Jordan, Snow, & Porche, 2000; Neuman, 2005), and the understanding of the

developmental milestones for primary-school aged readers in grades kindergarten through 3rd grade (Molfese et al., 2006; Torgesen, 2002; Treptow, Burns, & McComas, 2007; West, Denton, & Germino-Hausken, 2000).

Emerging readers and reading readiness. Children who have reached the ages of 3, 4, and 5 under normal developmental circumstances generally possess an elemental understanding that there is something called reading and that they are participants in the process of reading. This knowledge about the process of reading possessed by this age group is accompanied by the understanding that there is also a purpose for reading, which is to provide them with information, thus identifying these children as emerging readers. An important milestone for the emerging reader is when they are able to make the connection between the letter sounds that were learned in the earlier stages of phonological development and the letter sounds with which they are familiar (Dickenson, 2002; Encisco, 2001; Heibert, 1981; Quick, 1998). From the beginning of their lives children are environmentally exposed to letters and text on items such as clothing, toys, billboards, and television. Understanding the concept of environmental exposure to text, in 1969 Dr. Edward Palmer and Joan Cooney approached New York's Children's Television Workshop with the idea of

providing a limited pre-school curriculum designed to enhance the development of a number of early childhood cognitive skills including phonemic awareness and letter recognition for inner-city children who may in some way be limited or disadvantaged in their exposure to phonological stimulation and/or literacy development activities. After nearly forty years, this program, Sesame Street, continues to positively enhance the literary environmental exposure for a wide variety of children from all walks of life (Dickenson, 2002; Heibert, 1981; Schugurensky, 2002).

Building on the basic reading skills of letter recognition and sound association, emerging readers develop print pattern awareness; that is an understanding of and ability to visually discriminate letter combinations that move from left to right as well as the ability to form simple word sounds by decoding letters in text. Companion skills for the emerging reader include the ability to distinguish between letters and numbers as well as shapes. Research indicates that the practice of each of these skills is mutually reinforcing, and that the acquisition of these abilities is a strong predictor for later reading (Dickenson, 2002; Encisco, 2001; Heibert, 1981; Quick, 1998;).

The importance of stimulating home language environments. Emerging readers with opportunities to experience linguistically rich and engaging home environments prior to school are more likely to experience success in attaining literacy skills (Jordan, Snow, & Porche, 2000; Neuman, 2005; Thomas, 1984). Parents who engage early readers in frequent and quality book-centered activities strengthen their child's vocabulary, extend their narrative understanding, develop letter recognition and sound awareness, as well as assist in their child's ability to produce narrative retelling, and understand exposition. Research in this area clearly indicates that children whose families engaged in these activities which create stimulating home language environments make significantly greater gains in language scores as measured on subtests of vocabulary, story comprehension, and story telling than their peers who are raised on language poor environments (Jordan, Snow & Porche, 2000; Neuman, 2005; Thomas, 1984).

Understanding the Developmental Milestones of Primary Age Readers

Accomplishments in reading during the primary school years of kindergarten, first, second, and third grade as well as years beyond are strongly related to environmental

factors that have been previously discussed in this literature review. The typical child enters the American school system in kindergarten at age 5. Sixty-six percent of these children can recognize and name letters of the alphabet. Sixty-one percent possess English text familiarity skills such as knowing that text is read left to right and from one line to the next. A general area of weakness among this group however includes the ability to read basic words by sight or to read more complex words in the context of a sentence. Overall, one third of American children enter kindergarten as at-risk readers (West, Denton, & Germino-Hausken, 2000).

First-grade. By the time the typical child enters first grade, he or she makes the transition from emergent to *real reader*. This student accurately decodes regular one-syllable words and non-sense words using print-sound mappings to sound out unfamiliar text. Typically, a first grade student can read aloud with accuracy and comprehend fiction and non-fiction text that is appropriate for the first half of grade 1. The typical first grader can discuss prior knowledge of topics in expository text, as well as discuss and retell new information from text (Snow, Burns, & Griffin, 1998).

Second-grade. By the time that children reach second grade at about the age of 7, the typical student has begun to establish two clearly defined skill sets that are important to successful reading. The first skill set is related to reading fluency. By grade 2 children are able to identify an increasing number of words by sight and are able to use common letter patterns and critical features to decode and spell unfamiliar words. The second skill set is related to comprehension. The typical second grader spends time daily reading and uses text to research information. They use strategies such as re-reading and questioning when comprehension breaks down. Typically these students can provide written re-telling of text with general accuracy (International Reading Association and the National Association for the Education of Young Children, 1998).

Third-grade. The effective third grade reader who has achieved good reading fluency has gained and mastered a variety of vocabulary and word identification skills. This student is able to recognize and discuss elements of different text structures such as persuasive or expository writing. This student can make critical connections between texts and is also able to write expressively about what they have read. He or she typically has good spelling skills, and is able to revise and edit his or her own

writing during and after composition based on their ability to make sense of their own written language (International Reading Association and the National Association for the Education of Young Children, 1998). Skilled 3rd-grade readers with a higher level of reading intellect process virtually every number, letter symbol, punctuation mark, and word quickly and confidently, often not realizing that they are utilizing specific skills automatically.

Successful early readers generally have a sizeable vocabulary to draw upon to assist them in recognizing words in textual material and in isolation. However, less skilled 3rd-grade readers with a lower level of reading intellect often experience alphabetic problems associated with poor phoneme and grapheme skill awareness and development. A typical sound error for example, would be the inability for a struggling reader to recognize that the digraph "ph" makes one "f" sound. These students also have difficulty following the rule of the silent "e" at the end of words where the first vowel says its name, such as in the word "hate." This unfamiliarity with phonemic analysis severely impairs the ability to assist in word identification and consequently diminishes the ability for the child to gain understanding from text (Adams, 1990; Swanson, 1999; Torgesen, 2002).

Struggling Readers

Most children who do not learn to read during the primary grades will probably never learn to read well (Holmes, Powell, Holmes, & Witt, 2007; Sloat, Beswick, & Willms, 2007; Torgesen, 2002; Triplett & Buchanan, 2004). It can be estimated that as many as thirty percent of students exiting the primary years of first and second grade into grade three are not effective readers and in fact are at-risk for reading difficulties (Otaiba & Fuchs, 2006). Reading rate is exponential in that children with high reading levels will make gains in larger quantities, and conversely children with lower reading levels will make gains in smaller quantities (Holmes, Powell, Holmes, & Witt, 2007). Often children who reach the end of grade three with low literacy skills have less access to the regular curriculum, fall further behind their peers academically, and require more intense and longer-term interventions in order to regain academic ground. Often these students are unable to reach the academic level of their able-reading peers. Frequently, issues of low self-esteem and negative behavior accompany this lack of reading success. (Sloat, Beswick, & Willms, 2007).

In order to effectively address the needs of children who emerge from their primary years as struggling readers,

it is important to gain an understanding of the characteristics of these students that include reading skills (Holmes, Powell, Holmes and Witt, 2007; Torgesen, 2002; Triplett & Buchanan, 2005), reading affect (Burns & Mc Comas, 2007; Gambrell, 1996; Holmes, Powell, Holmes, & Witt, 2007; Triplett & Buchanan, 2005), and effective reading interventions for struggling readers (Deshler & Schumaker, 1993; Holmes, Powell, Holmes, & Witt, 2007; Ogawa, Sandholts, Florez, & Scribner, 2003;).

Reading skills of struggling readers. Reading skills may be defined as an individual's ability to call upon reading practices and strategies that are available to them in a repertoire of reading tools used for breaking down and understanding text. The reading skill status of the grade 3 reader is the launching point from which future widespread cognitive skills will be developed and the foundation on which further reading skills will be built (Swanson, 1999). Recognizing that children reach this critical linguistic transitional phase in different states of preparedness for future reading requirements builds a case for the use of focused and explicit instruction aimed at narrowing the gap that exists between good and poor readers at this grade level.

Research identifies a variety of individual differences in phonological abilities among third grade children. These differences include but are not limited to the use of graphemes, phonemes, and orthographic skills, which can be identified as key basic reading skills. Many struggling readers at this age lack adequate development in these specific areas leaving them ill equipped to consistently, quickly, and adequately identify characters and letters that make up phonemes, or the smallest units of speech and written language. This deficit inhibits their ability to decode and identify words in text. Furthermore, this lack of phonemic development inherently leads to difficulty making connections between written words thus impacting the ability for the struggling reader to make sense of text (Torgesen, 2002; Vadasy, Sanders, & Peyton, 2006).

Reading affect of struggling readers. Reading affect may be defined as an individual's motivation to read, engagement in the reading process or more specifically, the amount of pleasure that one derives from reading. An engaged third grade reader is motivated, knowledgeable, strategic, and interactive. This reader has the ability to relate the text to his or her own developing identity and interests. He/she possesses the ability to engage in

higher-level thinking and communicate understanding to others (Gambrell, 1996; Teptow, Burns, & Mc Comas, 2007).

Readers with a lower level of reading affect often possess negative emotions about reading, and gain less pleasure from reading than their peers. A certain level of negative emotion can be attributed to frustration that is associated with a diminished level of reading skill. However, several studies provide insight that these students, particularly those who are poor or minority students, may be disengaged from reading by the very literary resources and activities that are provided for them at school (Burns & Mc Comas, 2007; Gambrell, 1996; Holmes, Powell, Holmes, & Witt, 2007; Triplett & Buchanan, 2005).

Addressing the lack of engagement in reading activities and meta-cognitive activities for some poor and minority students during and after reading has been the subject of a number of studies. In many cases of poor and minority students are often less engaged and possessed significantly lower reading achievement scores. Literary materials that are designed for the mainstream reader do not provide sufficient opportunity for non-mainstream children to make obvious connections between text and

personal experience (Chinn, Anderson, & Wagonner, 2001; Holmes, Powell, Holmes, & Witt, 2007).

For example, the Cooperative Children's Book Center reported that in 2004, 5000 children's books were published, and that among these books only 143 included main characters or story lines that were generally related to African Americans. A year later in 2005, the scores from the National Assessment for Educational Progress (NAEP) indicated that at grade 4, 59% of African American students scored below the basic level of reading as compared to 25% of their white peers (Holmes, Powell, Holmes, & Witt, 2007; National Center for Educational Statistics, 2005).

The emotions of struggling readers play a major role in their continued cognitive development. Research has found that children who were identified as poor readers in first and second grade become more cognitively engaged, as well as more motivationally and emotionally involved in reading when their anxiety about reading is eased. Most often this is accomplished at the classroom level when teachers abandoned traditional teacher-led activities and acquiesced to student-led, highly interactive meta-cognitive discussions about specific reading assignments (Triplett & Buchanan, 2005). These book talks allow for the integration of cultural relevance, and provide an

opportunity for interaction between various types of students in the classroom. Interaction between culturally diverse students benefits non-mainstream readers because discussion more closely matches their interaction style than simple question and answer sessions or worksheets. The ability for young students to relate text to their developing identities including race, gender, and economic class will increase engagement in reading and will enhance their ability to utilize higher order cognitive skills, such as elaboration, prediction, and the ability to develop a persuasive argument (Chinn, Anderson, & Wagonner, 2001).

Effective Reading Interventions for Struggling Readers

The critical nature of the reading ability of third grade students and the necessity for developmental reading programs for these children are well documented in literature. The challenge facing our schools is the continued effort to support struggling readers beyond this point. The contemporary emphasis on national and local standards-based curriculum has intensified the attention on students who have failed to gain grade-level proficiency in reading, math, and writing. Although a common set of outcomes has facilitated the identification of children at various levels of academic proficiency, there remains a lack of focus on instructional philosophy and practice to

address the learning needs of all children (Deshler & Schumaker, 1993; Ogawa, Sandholts, Florez, & Scribner, 2003; Reiss, 1983).

Furthermore, students who are diagnosed with specific learning disabilities along with those who are learning the English Language for the first time are an increasing part of the American public school population. This increase in the proportion of at-risk learners is accompanied by a prevailing trend to service these children in the regular classroom environment as frequently as possible (Burke, Burke, & Sugai, 2003; Haager & Windmueller, 2001).

Understanding this changing demographic in American public schools in the current climate of accountability, research in the area of teaching intervention strategies has garnered a number of salient research-based instructional principles that are recommended for effectively balancing the content-centered, standards-based curriculum and instructional strategies while optimizing the academic growth of each individual student, particularly those who struggle academically. Effective instruction in the contemporary heterogeneous classroom includes quality preventative instructional strategies that include intensive and systematic instruction that focuses on skills. Historically, an emphasis on instruction and

mastery strategies as a priority over content has proven to be effective in moving students forward in the regular classroom setting and should not be reserved for the remedial setting exclusively (Deshler & Schumaker, 1993; Fulk & Smith, 1995; Hobsbaum, Peters, & Sylva, 1996; Morocco, 2001; Roderick & Camburn, 1999; Thompson, Vaughn, Davis, & Kouzekanani, 2003). Research has demonstrated that even in areas of high poverty and diversity, explicit preventative teaching can be effective in improving reading ability (Buffer, 1985; Burke, Burke, & Sugai, 2003;).

Some guiding principles for providing reading instruction to struggling learners are as follows: (a) Individualize as much as possible. (b) Teach prerequisite skills before strategy instruction begins. (c) Teach and practice strategies regularly, intensely, and consistently each day. (d) Emphasize personal effort by the student. (e) Require mastery. Students will generalize a strategy when they are confident that they have mastered the use of that strategy. (f) Emphasize covert processing such as visualization, self-questioning, prioritizing, and hypothesizing. (g) Emphasize generalization of strategies in the broadest sense across many curriculum areas (Deshler & Schumaker, 1993; Hobsbaum, Peters & Sylva, 1996; Reiss, 1983).

Individualize as much as possible. Understanding the personal variables that both negatively and positively impact a child's ability to learn is a key factor in preventative teaching and in re-teaching students who have failed to demonstrate content mastery. Low rates of task engagement in the general education classroom and a lack of academic success for students beyond the primary years are generally related to aggravating conditions that may include among other things a specific learning disability or language barrier. Aggravating academic conditions often build upon themselves and lead to low self-esteem as a learner and an increased level of frustration. Each child has a unique academic baseline that must be considered when determining what constitutes progress.

With an understanding of the child's individual variables, a teacher is more likely to make an accurate skill deficiency diagnosis and determine what strategies and techniques are most successful in treating the academic deficiency. The teacher may then implement a daily treatment plan that is designed to take each child from their individual starting point to the next appropriate level of improvement (Burke, Burke, & Sugai, 2003; Koorland & Wolking, 1982; Morocco, 2001; Reis, 1981; Roderick & Camburn, 1999).

Teach prerequisite skills. When learning new content, students, particularly young children, must not only process the new data and store it cognitively, but often must learn a new skill that serves as a mode of gaining access to this new information. This task is at times challenging for the developmentally normal child and is compounded for the child with an aggravating academic condition. Children who are given the opportunity to practice and master prerequisite skills prior to the introduction of content are more likely to retain and apply more complex concepts. For example, if children have been given the opportunity to practice and master the skill of pronouncing diagraphs such as *ph*, *or gh*, they will be better equipped to gain meaning from text that contains such phonemes (Deshler & Schumaker, 1993; Torgesen, 2002; Vadasy, Sanders & Peyton, 2006).

Teach and practice strategies regularly, intensely, and consistently. In order for children to transcend from learning a skill to mastering a skill regular, intense, and consistent practice of skills and sub-steps to skills is required. Children must be able to see, hear, feel and appreciate what the desired academic behavior looks like, feels like, sounds like, and means to the senses. Teachers must on a regularly scheduled basis, accurately demonstrate

and allow for risk-free practice of these skills by all students. Students and teachers should set individual goals for the attainment of these skills and set aside appropriate time for supervised practice that includes immediate and meaningful feedback for each student toward the attainment of their individual goal (Deshler & Schumaker, 1993; Tobias, 1976; Tompson, Vaughn, Davis, & Kouzekanani, 2003).

Emphasize personal effort by the student. Just as it is important for a teacher to understand the individual needs and skill deficiencies of the student, it is equally important for children to understand that there is personal effort on their part that is required in order to appropriately practice and implement learning strategies that are part of their individual treatment plan for academic improvement. Students should be involved in setting and monitoring reasonable personal goals and also for monitoring the frequency and quality of practice that is put forth toward the attainment of that goal.

Research has shown that when children have skill deficiencies and academic frustration, they often develop negative coping mechanisms that result in escape or avoidance behaviors. An analysis of these behavior variables and the related academic task that triggers them

will help the teacher to develop specific sub skill-based pre-teaching interventions that decrease frustration and anxiety and increase on task behavior.(Burke, Burke & Sugai, 2003; Deshler & Schumaker, 1993).

Require mastery. In an era of standards-based curriculum and assessments an increased emphasis has been placed on a breadth of coverage of a curriculum that has been aligned with state academic standards, and the opportunity for all students to learn the intended curriculum. Reading, a required assessment area that is reported for Adequate Yearly Progress under No Child Left Behind, is a skill that for struggling children requires a great deal of time and practice in order to increase speed, fluidity, and accuracy in order to improve comprehension. It is important that teachers require that students demonstrate mastery of steps in a given strategy and that schools and school districts provide the necessary instructional time to arrive at the point of mastery before moving on to subsequent curriculum standards.(Deshler & Schumaker, 1993; No Child Left Behind, 2001).

Emphasize covert processing. As part of the treatment plan for struggling readers, teachers must include the teaching of basic cognitive strategies in addition to the mechanical aspects of reading. These strategies will assist

children in the mastery of skills and the demonstration of proficiency. Students must learn metacognitive reading strategies that help them to visualize, paraphrase, and analyze material for understanding. Other covert processing skills include the use of mnemonic devices, self-questioning, and prioritizing (Billmeyer & Barton, 1998; Deshler & Schumaker, 1993).

Emphasize generalization of strategies. As students begin to master skills associated with a specific academic behavior, teachers should broaden their instruction to teach students how to use strategies that they have mastered in a variety of applications and curriculum areas. Over time, students should be able to draw on a repertoire of tools that have a wide range of academic usefulness. (Deshler & Schumaker, 1993).

Taken together, reading lessons based on these strategies should result in improved reading outcomes and greater student motivation to read words, share meaning with the author, and explore worlds opened up only to successful readers.

CHAPTER THREE

Methodology

Participants

Number of participants. The maximum accrual for this study will be $N = 28$. The sample of participants was a naturally formed group of 3rd-grade students determined to be not proficient in reading and who were required to participate in two years of reading re-teaching intervention used in combination with regular classroom instruction ($n = 14$) and a naturally formed group of 3rd-grade students determined to be barely proficient in reading and who participated in two years of regular classroom reading instruction ($n = 14$). All participants had been in the research school 1st-grade through 4th-grade.

Gender of participants. The gender of the participants was congruent with enrollment patterns of the participating school, where females represent 49% and males represent 51% of the total enrollment.

Age range of participants. The age range of participants was from 7 years to 8 years during the 3rd-grade when they were identified as not proficient or barely proficient in reading and 9 years to 10 years during the 4th-grade at the completion of participation in re-teaching

and regular classroom reading instruction or regular classroom reading instruction only. All participants completed the 4th-grade at the end of the study.

Racial and ethnic origin of participants. The racial and ethnic origin ratio was congruent with enrollment patterns in the participating school. The current enrollment shows 89% White, not Hispanic; 3% Black, not Hispanic; 3% Hispanic; 4% Asian/Pacific Islanders; and 1% American Indian/Alaskan Native.

Inclusion criteria of participants. Fourth grade students who participated in this study attended the research school for their 3rd-grade through 4th-grade school years, participated in the re-teaching and regular classroom reading instruction, or regular classroom reading instruction alone, and have completed all assessments. Students with Individual Educational Plans (IEP) verified for inclusion in one or more Special Education classes were included in the research because they received reading instruction in the regular classroom and completed all school required assessments in the regular classroom.

Method of participant identification. No individual identifiers were attached to the achievement or behavior data of the 30 students selected for data analysis.

Description of Procedures

Research design. The pretest-posttest two-group comparative survey study design is displayed in the following notation:

Group 1 X_1 O_1 X_2-Y_1 O_2

Group 2 X_1 O_1 X_3-Y_2 O_2

Group 1 = Naturally formed group of 3rd-grade students ($n = 14$) who were determined to be not proficient in reading and completed two years of regular classroom reading instruction in combination with individual learner plan reading re-teaching intervention

Group 2 = Naturally formed group of 3rd-grade students ($n = 14$) who were determined to be barely proficient in reading and completed two years of regular classroom reading instruction alone

X_1 = Students who completed 1st-grade through 4th-grade in the research school

X_2 = Students who were determined to be not proficient in reading

X_3 = Students who were determined to be barely proficient in reading

Y_1 = Required Individual Learner Plan reading re-teaching intervention used in combination with regular

classroom reading instruction (RCRI + ILPRRI) 3rd-grade through 4th-grade

Y_2 = Regular classroom reading instruction alone (RCRIA) 3rd-grade through 4th-grade

O_1 = Third grade Pretest 1. Terra Nova norm referenced achievement test mastery percent scores for reading including: (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies. Third grade Pretest 2. Essential Learner Outcome criterion referenced achievement test subscale scores for reading including: (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, and (e) Reading Word Analysis.

O_2 = Fourth grade Posttest 1. Terra Nova norm referenced achievement test mastery percent scores for reading including: (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies. Fourth grade Posttest 2. Essential Learner Outcome criterion referenced achievement test subscale scores for reading including: (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, and (e) Reading Word Analysis. Fourth grade Posttest 3. Essential Learner

Outcome criterion referenced achievement test proficiency levels based on psychometrically derived cut scores.

Purpose of the Study

The purpose of the study is to examine the achievement outcomes of 4th-grade students, identified in the 3rd-grade as not proficient in reading, after completing two years of regular classroom reading instruction used in combination with required individual learner plan reading re-teaching intervention (RCRI + ILPRRI) compared to the achievement outcomes of 4th-grade students, identified in the 3rd-grade as barely proficient in reading, who completed regular classroom reading instruction alone (RCRIA).

Dependent Measures

Three dependent measures were used for academic achievement. The first of these was 1. Norm Referenced Tests (NRT) subtests derived from the Terra Nova, and include the mastery percent scores for reading including: (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies; 2. Essential Learner Outcome criterion referenced achievement test subscale scores for reading will include: (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, and (e) Reading Word Analysis; 3. Essential Learner Outcome criterion referenced

achievement test proficiency levels based on psychometrically derived cut scores. This data was collected retrospectively for students who completed 3rd-grade through 4th-grade independent variable instruction.

Implementation of the Independent Variables

The independent variables for this study are the two elementary reading modes in grades three and four. The first mode, Individual Learner Plan Reading Reteaching Intervention combined with Regular Classroom Reading Instruction is provided for students who have been identified as below proficient on the district criterion based reading test. The second mode, Regular Classroom Reading Instruction alone is provided for students who have been identified as at least barely proficient on the district criterion based reading test.

Individual Learner Plan Reading Reteaching Intervention combined with Regular Classroom Reading Instruction. Individual learner plan reading reteaching intervention is defined as a required prescribed plan of instruction in reading for students who have failed to attain the established cutscore on the district criterion referenced reading assessment at any grade level in the Millard Public School district. Each school in the Millard district is allocated funds to be used to implement

instructional interventions above and beyond the regular classroom instruction that is provided for every general education student. The funds allocated annually to support individual school efforts to reteach students is based on a needs formula that includes the number of students in need of assistance as well as the general level of academic deficiency in each school.

Reteaching strategies are aligned with the curriculum and generally focus on specific skill development. Modes of reteaching across the district include pull out programs for individual or small groups of students that are facilitated by certified substitute teachers, paraprofessionals or regular certified classroom teachers, voluntary before or after school individual or group skills-based instruction, required before or after school individual or group skills-based instruction, voluntary drop-in academic help labs, and required scheduled academic help labs.

Regular Classroom Reading Instruction Alone. Regular classroom reading instruction is defined as teaching and curricular strategies that, although are likely to include a variety of differentiated lesson design and delivery systems, are provided to the larger proportion of a school's regular education population on a daily basis in

the regular classroom setting. The Millard School's elementary reading curriculum emphasizes the instruction of skills that are recognized and promoted by the National Reading Panel of the National Institute of Child Health and Human Development which includes instruction in phonics, phonemic awareness, fluency, and vocabulary. The curriculum utilizes the Harcourt Trophies series including both the anthologies as well as trade book materials. These materials are augmented by the use of basal readers and comprehension activities.

Research Questions and Data Analysis

The following research questions were used to analyze student participation in ILPRRT and RCRIO measuring norm-referenced achievement outcomes.

Overarching Pretest-Posttest Norm-Referenced Achievement Research Question #1: Do students who participate in the RCRI + ILPRRI and the RCRIA lose, maintain, or improve their 3rd-grade Terra Nova mastery percent scores compared to their 4th-grade Terra Nova mastery percent scores for (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies subtests?

Sub-Question 1a. Is there a significant difference between students' ending 3rd-grade compared to

ending 4th-grade Terra Nova mastery percent scores for (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies scores after completing RCRI + ILPRRI?

Sub-Question 1b. Is there a significant difference between students' ending 3rd-grade compared to ending 4th-grade Terra Nova mastery percent scores for (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies scores after completing RCRIA?

Research Sub-questions #1a and 1b were analyzed using dependent *t* tests to examine the significance of the difference between the RCRI + ILPRRI students' ending 3rd grade compared to ending 4th grade and the RCRIA students' ending 3rd-grade compared to ending 4th-grade Terra Nova mastery percent achievement scores. Because multiple statistical tests were conducted, a one-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations are displayed on tables.

Overarching Posttest-Posttest Norm-Referenced Achievement Research Question #2: Do students who participate in the RCRI + ILPRRI and the RCRIA have congruent or different ending 4th-grade Terra Nova mastery percent scores for (a) Basic Understanding, (b) Analyzing

Text, (c) Evaluating Meaning, and (d) Identifying Strategies subtests?

Sub-Question 2a. Is there a significant difference between RCRI + ILPRRI students ending 4th-grade Terra Nova mastery percent achievement scores for (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies subtests compared to RCRIA students ending 4th-grade Terra Nova mastery percent achievement scores for (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies subtests?

Research Sub-Question #2a was analyzed using an independent t test to examine the significance of the difference between students' ending 4th-grade RCRI + ILPRRI compared to students' ending 4th-grade RCRIA Terra Nova mastery percent achievement scores for (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies subtests? Because multiple statistical tests were conducted, a one-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations are displayed on tables.

The following research questions were used to analyze student participation in RCRI + ILPRRI and RCRIA measuring criterion-referenced achievement outcomes.

Overarching Pretest-Posttest Criterion-Referenced Achievement Research Question #3: Do students who participate in the RCRI + ILPRRI and the RCRIA lose, maintain, or improve their 3rd-grade Essential Learner Outcome (ELO) scores compared to their 4th-grade ELO scores for (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, (e) Reading Word Analysis, and (f) Total Score?

Sub-Question 3a. Is there a significant difference between students' ending 3rd-grade compared to ending 4th-grade ELO scores for (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, (e) Reading Word Analysis, and (f) Total Score after completing RCRI + ILPRRI?

Sub-Question 3b. Is there a significant difference between students' ending 3rd-grade compared to ending 4th-grade ELO scores for (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, (e) Reading Word Analysis, and (f) Total Score after completing RCRIA?

Research Sub-questions #3a and 3b were analyzed using dependent *t* tests to examine the significance of the difference between the RCRI + ILPRRI students' ending 3rd-grade compared to ending 4th-grade and the RCRIA students'

ending 3rd-grade compared to ending 4th-grade ELO scores. Because multiple statistical tests were conducted, a one-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations are displayed on tables.

Overarching Posttest-Posttest Research Criterion-Referenced Achievement Question #4: Do students who participate in the RCRI + ILPRRI and the RCRIA have congruent or different ending 4th-grade Essential Learner Outcome (ELO) scores for (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, (e) Reading Word Analysis, and (f) Total Score?

Sub-Question 4a. Is there a significant difference between RCRI + ILPRRI students ending 4th-grade ELO scores for (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, and (e) Reading Word Analysis compared to RCRIA students ending 4th-grade ELO scores for (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, (e) Reading Word Analysis, and (f) Total Score?

Research Sub-Question #4a was analyzed using an independent *t* test to examine the significance of the

difference between students' ending 4th-grade RCRI + ILPRRI compared to students' ending 4th-grade RCRIA ELO achievement scores for (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, (e) Reading Word Analysis, and (f) Total Score. Because multiple statistical tests were conducted, a one-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations are displayed on tables.

The following research questions were used to analyze student participation in RCRI + ILPRRI and RCRIA measuring Essential Learner Outcome criterion referenced achievement test proficiency levels based on psychometrically derived cut scores.

Overarching Posttest-Posttest Essential Learner Outcome Research Question #5. Is there a significant difference between RCRI + ILPRRI and RCRIA students' ending 4th-grade Essential Learner Outcome criterion referenced achievement test proficiency levels based on psychometrically derived cut scores?

Sub-Question 5a. Is there a significant difference between RCRI + ILPRRI students' ending 4th-grade reported proficiency level cut scores for (a) below proficient, (b) barely proficient, (c) proficient, and (d)

beyond proficient categories compared to RCRIA students' ending 4th-grade reported proficiency level cut scores for (a) below proficient, (b) barely proficient, (c) proficient, and (d) beyond proficient categories?

Research Sub-Question #5a utilized a chi-square test of significance to compare observed versus expected proficiency level cut scores for (a) below proficient, (b) barely proficient, (c) proficient, and (d) beyond proficient category frequency scores for RCRI + ILPRRI compared to RCRIA students'. Because multiple statistical tests were conducted, a .01 alpha level was employed to help control for Type I errors. Frequencies and percents were displayed on tables.

Data Collection Procedures

All study achievement norm-referenced, criterion-referenced, cut scores, and recorded classroom marks for reading data were retrospectively, archival, and routinely collected school information. Permission from the appropriate school research personnel was obtained. A naturally formed sample of 28 students was obtained to include achievement data. Non-coded numbers were used to display individual de-identified achievement data. Aggregated group data, descriptive statistics, and

inferential statistical analysis were utilized and reported with means and standard deviations on tables.

Performance site. The research was conducted in the public school setting through normal educational practices. The study procedures did not interfere in any way with the normal educational practices of the public school and did not involve coercion or discomfort of any kind. All data was analyzed in the office of the primary investigator, at the Donald Stroh Administration Center for the Millard Public Schools, 5606 South 147, Omaha, Nebraska, 68137. Data was stored on secured databases and servers for statistical analysis in the office of the primary researcher and the dissertation chair. Data and computer disks were kept in locked file cabinets. No individual identifiers were attached to the data.

Institutional Review Board (IRB) for the Protection of Human Subjects Approval Category. The exemption categories for this study are provided under 45CFR46.101(b) categories 1 and 4. The research was conducted using routinely collected archival data. Letters of research approval are located in Appendix A and B.

CHAPTER FOUR

Results

Purpose of the Study

The purpose of the study is to examine the achievement outcomes of 4th-grade students, identified in the 3rd-grade as not proficient in reading, after completing two years of regular classroom reading instruction used in combination with required individual learner plan reading re-teaching intervention (RCRI + ILPRRI) compared to the achievement outcomes of 4th-grade students, identified in the 3rd-grade as barely proficient in reading, who completed regular classroom reading instruction alone (RCRIA).

The study analyzed ending of the 3rd-grade school year pretest compared to ending of the 4th-grade school year posttest data to determine improvement in student reading outcomes over time and 4th-grade posttest compared to 4th-grade posttest reading outcomes data following 4th-grade students' completion of two years of regular classroom reading instruction used in combination with required individual learner plan reading re-teaching intervention (RCRI + ILPRRI) compared to the achievement outcomes of 4th-grade students, identified in the 3rd-grade as barely proficient in reading, who completed regular classroom reading instruction alone (RCRIA).

All study achievement data related to each of the dependent variables were retrospective, archival, and routinely collected school information. Permission from the appropriate school research personnel was obtained before data were collected and analyzed.

Table 1 displays the gender and descriptive information of individual 4th-grade students determined to be not proficient in reading who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction. Table 2 displays gender and descriptive information of individual 4th-grade students determined to be barely proficient in reading who received regular classroom reading instruction alone. Terra Nova Norm Referenced Achievement Test mastery percent scores for 4th-Grade students determined to be not proficient in reading who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction are found in Table 3. Terra Nova Norm Referenced Achievement Test mastery percent scores for 4th-grade students determined to be barely proficient in reading who received regular classroom reading instruction alone may be found in Table 4. Table 5 displays 4th-grade students determined to be not proficient

in reading who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction pretest compared to posttest Terra Nova Norm Referenced Achievement Test mastery percent scores.

Research Question #1

Research Question #1a. The first hypothesis comparing students' who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction pretest compared to posttest Terra Nova Norm Referenced Achievement Test mastery percent scores for (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies results utilizing a dependent t test were displayed in Table 5. As seen in Table 5 the null hypothesis was not rejected for any of the four, measured norm referenced reading achievement subtests. The pretest Basic Understanding score ($M = 56.71, SD = 14.16$) compared to the posttest Basic Understanding score ($M = 64.57, SD = 23.74$) was not statistically significantly different, $t(13) = 1.22, p = 0.12$ (one-tailed), $d = .41$. The pretest Analyzing Text score ($M = 51.07, SD = 19.80$) compared to the posttest Analyzing Text score ($M = 55.00, SD = 26.50$) was not statistically significantly different, $t(27) =$

0.42, $p = 0.34$ (one-tailed), $d = .17$. The pretest Evaluating Meaning score ($M = 50.07$, $SD = 26.18$) compared to the posttest Evaluating Meaning score ($M = 48.57$, $SD = 23.49$) was not statistically significantly different, $t(13) = -0.20$, $p = 0.42$ (one-tailed), $d = .06$. The pretest Identifying Strategies score ($M = 47.43$, $SD = 19.81$) compared to the posttest Identifying Strategies score ($M = 48.43$, $SD = 24.20$) was not statistically significantly different, $t(13) = 0.12$, $p = 0.45$ (one-tailed), $d = .09$.

Overall, pretest-posttest results indicated that 4th-grade students determined to have below proficient reading skills participating in the required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction did not significantly improve their Basic Understanding, Analyzing Text, Evaluating Meaning, and Identifying Strategies posttest reading achievement score results. Pretest-posttest results for Evaluating Meaning were in the direction of lower test score performance. Pretest-posttest results for Basic Understanding, Analyzing Text, and Identifying Strategies were all measured in the direction of improved test score performance. Students' mastery percent scores for Basic Understanding were 56.71% correct at pretest and 64.57% correct at posttest for a 7.86% test

score improvement. Students' mastery percent scores for Analyzing Text were 51.07% correct at pretest and 55.00% correct at posttest for a 3.93% test score improvement. Students' mastery percent scores for Evaluating Meaning were 50.07% correct at pretest and 48.57% correct at posttest for a -1.50% test score decrease. Students' mastery percent scores for Identifying Strategies were 47.43% correct at pretest and 48.43% correct at posttest for a 1.00% test score improvement.

Research Question #1b. Analysis of the first hypothesis comparing students' who received regular classroom reading instruction alone pretest compared to posttest Terra Nova Norm Referenced Achievement Test mastery percent scores for (a) Basic Understanding, (b) Analyzing Text, (c) Evaluating Meaning, and (d) Identifying Strategies results utilizing a dependent *t* test were displayed in Table 6. As seen in Table 6 the null hypothesis was not rejected for any of the four, measured norm referenced reading achievement subtests. The pretest Basic Understanding score ($M = 71.79, SD = 18.12$) compared to the posttest Basic Understanding score ($M = 80.36, SD = 14.84$) was not statistically significantly different, $t(13) = 2.08, p = 0.03$ (one-tailed), $d = .52$. The pretest Analyzing Text score ($M = 65.36, SD = 11.96$) compared to

the posttest Analyzing Text score ($M = 70.43$, $SD = 20.11$) was not statistically significantly different, $t(13) = 1.09$, $p = 0.15$ (one-tailed), $d = .31$. The pretest Evaluating Meaning score ($M = 69.21$, $SD = 18.90$) compared to the posttest Evaluating Meaning score ($M = 69.29$, $SD = 14.92$) was not statistically significantly different, $t(13) = 0.01$, $p = 0.49$ (one-tailed), $d = .00$. The pretest Identifying Strategies score ($M = 67.07$, $SD = 17.42$) compared to the posttest Identifying Strategies score ($M = 71.57$, $SD = 14.32$) was not statistically significantly different, $t(13) = 0.80$, $p = 0.22$ (one-tailed), $d = .31$.

Overall, pretest-posttest results indicated that 4th-grade students determined to have barely proficient reading skills participating in regular classroom reading instruction alone did not significantly improve their Basic Understanding, Analyzing Text, Evaluating Meaning, and Identifying Strategies posttest reading achievement score results. However, all pretest-posttest results for Basic Understanding, Analyzing Text, Evaluating Meaning, and Identifying Strategies were measured in the direction of improved test score performance. Students' mastery percent scores for Basic Understanding were 71.79% correct at pretest and 80.36% correct at posttest for an 8.57% test score improvement. Students' mastery percent scores for

Analyzing Text were 65.36% correct at pretest and 70.43% correct at posttest for a 3.93% test score improvement. Students' mastery percent scores for Evaluating Meaning were 69.21% correct at pretest and 69.28% correct at posttest for a 0.08% test score improvement. Students' mastery percent scores for Identifying Strategies were 67.07% correct at pretest and 71.57% correct at posttest for a 4.50% test score improvement.

Research Question #2

The second hypothesis was tested using the independent *t* test. A comparison of 4th-grade students who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction and 4th-grade students who received regular classroom reading instruction alone posttest compared to posttest Terra Nova Norm Referenced Achievement Test mastery percent score results were displayed in Table 7. As seen in Table 7 the predetermined .01 alpha level set for rejecting the null hypothesis was obtained for two measured reading achievement subtests Evaluating Meaning and Identifying Strategies. However, posttest-posttest comparison *p* values less than .05 were obtained for two, reading subtests as indicated in Table 7 Basic Understanding and Analyzing Text. The posttest Basic

Understanding score for the students who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction ($M = 64.57$, $SD = 23.74$) compared to the posttest Basic Understanding score for the students who received regular classroom reading instruction alone ($M = 80.36$, $SD = 14.84$) was not statistically significantly different at the .01 level of confidence, $t(26) = 2.11$, $p = 0.02$ (one-tailed), $d = 2.91$. The posttest Analyzing Text score for the students who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction ($M = 55.00$, $SD = 26.50$) compared to the posttest Analyzing Text score for the students who received regular classroom reading instruction alone ($M = 70.43$, $SD = 20.11$) was not statistically significantly different at the .01 level of confidence, $t(26) = 1.74$, $p = 0.05$ (one-tailed), $d = 0.66$. The posttest Evaluating Meaning score for the students who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction ($M = 48.57$, $SD = 23.49$) compared to the posttest Evaluating Meaning score for the students who received regular classroom reading instruction alone ($M = 69.29$, $SD = 14.92$) was statistically

significantly different beyond the .01 level of confidence, $t(26) = 2.79$, $p = 0.005$ (one-tailed), $d = 1.08$. The posttest Identifying Strategies score for the students who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction ($M = 48.43$, $SD = 24.20$) compared to the posttest Identifying Strategies score for the students who received regular classroom reading instruction alone ($M = 71.57$, $SD = 14.32$) was statistically significantly different beyond the .01 level of confidence, $t(26) = 3.08$, $p = 0.002$ (one-tailed), $d = 1.20$.

Overall, results indicated that 4th-grade students participating in the required regular classroom reading instruction alone did have significantly greater posttest Basic Understanding, Analyzing Text, Evaluating Meaning, and Identifying Strategies reading achievement test score results compared to the posttest Basic Understanding, Analyzing Text, Evaluating Meaning, and Identifying Strategies reading achievement test score results for the 4th-grade students participating in the required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction. It should be noted that given the consistency of the statistical results for all four subtests and the moderate

to large effect sizes observed across all four posttest-posttest comparisons using the $< .05$ level of significance for rejecting the null hypotheses for the Basic Understanding and Analyzing Text subtests insures a lower chance of making a Type II error. This error consists of *not* rejecting the null hypothesis when it should be rejected.

Table 8 displays the Essential Learner Outcome pretest scores for 4th-grade students determined to be not proficient in reading who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction. Table 9 displays the Essential Learner Outcome pretest scores for 4th-grade students determined to be barely proficient in reading who received regular classroom reading instruction alone. Table 10 displays the Essential Learner Outcome posttest scores for 4th-grade students determined to be not proficient in reading who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction. Table 11 displays the Essential Learner Outcome posttest scores for 4th-grade students determined to be barely proficient in reading who received regular classroom reading instruction alone.

Research Question #3

Research Question #3a. The third hypothesis comparing 4th-grade students determined to be not proficient in reading who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction pretest compared to posttest Essential Learner Outcome scores for (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, (e) Reading Word Analysis, and (f) Total Reading Score results utilizing a dependent *t* test were displayed in Table 12. As seen in Table 12 the null hypothesis was not rejected for two of the six, criterion referenced reading achievement subtests. The pretest Reading Construct Meaning score ($M = 6.00$, $SD = 1.47$) compared to the posttest Reading Construct Meaning score ($M = 5.93$, $SD = 1.64$) was not statistically significantly different, $t(13) = -0.11$, $p = 0.46$ (one-tailed), $d = .04$. The pretest Reading Story Structure score ($M = 4.50$, $SD = 1.56$) compared to the posttest Reading Story Structure score ($M = 5.50$, $SD = 1.61$) was not statistically significantly different, $t(13) = 1.61$, $p = 0.07$ (one-tailed), $d = .63$. The pretest Reading Study Skills score ($M = 2.86$, $SD = 1.41$) compared to the posttest Reading Study Skills score ($M = 9.93$, $SD = 4.05$) was

statistically significantly different, $t(13) = 6.45$, $p = 0.0001$ (one-tailed), $d = 2.58$. The pretest Reading Vocabulary score ($M = 4.29$, $SD = 1.38$) compared to the posttest Reading Vocabulary score ($M = 8.29$, $SD = 2.40$) was statistically significantly different, $t(13) = 5.29$, $p = 0.0001$ (one-tailed), $d = 2.11$. The pretest Reading Word Analysis score ($M = 2.50$, $SD = 1.22$) compared to the posttest Reading Word Analysis score ($M = 6.71$, $SD = 2.02$) was statistically significantly different, $t(13) = 7.20$, $p = 0.0001$ (one-tailed), $d = 2.59$. The pretest Total Reading score ($M = 20.14$, $SD = 2.21$) compared to the posttest Total Reading score ($M = 36.36$, $SD = 8.86$) was statistically significantly different, $t(13) = 7.25$, $p = 0.0001$ (one-tailed), $d = 2.93$.

Overall, pretest-posttest results indicated that 4th-grade students determined to have below proficient reading skills participating in the required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction did not significantly improve their Reading Construct Meaning and their Reading Story Structure posttest reading achievement score results. Pretest-posttest results indicated that 4th-grade students determined to have below proficient reading skills participating in the required individual learner

plan reading reteaching intervention used in combination with regular classroom reading instruction did significantly improve their Reading Study Skills, Reading Vocabulary, Reading Word Analysis, and Total Reading Score posttest reading achievement score results. Pretest-posttest results for Reading Construct Meaning were in the direction of lower test score performance. Pretest-posttest results for Reading Story Structure, Reading Study Skills, Reading Vocabulary, Reading Word Analysis, and Total Reading were all measured in the direction of improved test score performance. Students' Essential Learner Outcome formative scores for Reading Construct Meaning were 6.00 correct at pretest and 5.93 correct at posttest for a -0.07 test score decrease. Students' Essential Learner Outcome formative scores for Reading Story Structure were 4.50 correct at pretest and 5.50 correct at posttest for a 1.00 test score improvement. Students' Essential Learner Outcome formative scores for Reading Study Skills were 2.86 correct at pretest and 9.90 correct at posttest for a 7.07 test score improvement. Students' Essential Learner Outcome formative scores for Reading Vocabulary were 4.29 correct at pretest and 8.29 correct at posttest for a 4.00 test score improvement. Students' Essential Learner Outcome formative scores for Reading Word Analysis were 2.50

correct at pretest and 2.59 correct at posttest for a 0.09 test score improvement. Finally, students' Essential Learner Outcome summative scores for Total Reading Score were 20.14 correct at pretest and 36.36 correct at posttest for a 16.22 test score improvement. However, despite statistically significant pretest-posttest gains noted in four of the six formative subtests the mean Essential Learner Outcome Total Reading Score of 36.36 did not meet the numerical threshold (39) required for reading proficiency.

Research Question #3b. The third hypothesis comparing 4th-grade students determined to be barely proficient in reading who received regular classroom reading instruction pretest compared to posttest Essential Learner Outcome scores for (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, (e) Reading Word Analysis, and (f) Total Reading Score results utilizing a dependent *t* test were displayed in Table 13. As seen in Table 13 the null hypothesis was not rejected for one of the six, criterion referenced reading achievement subtests Reading Construct Meaning. The pretest Reading Construct Meaning score ($M = 8.50$, $SD = 1.87$) compared to the posttest Reading Construct Meaning score ($M = 7.64$, $SD = 1.98$) was not statistically

significantly different, $t(13) = -1.23$, $p = 0.12$ (one-tailed), $d = .04$. The pretest Reading Story Structure score ($M = 6.21$, $SD = 1.25$) compared to the posttest Reading Story Structure score ($M = 7.43$, $SD = 1.40$) was statistically significantly different, $t(13) = 3.08$, $p = 0.004$ (one-tailed), $d = .69$. The pretest Reading Study Skills score ($M = 3.57$, $SD = 1.16$) compared to the posttest Reading Study Skills score ($M = 14.07$, $SD = 1.73$) was statistically significantly different, $t(13) = 21.99$, $p = 0.0001$ (one-tailed), $d = 6.36$. The pretest Reading Vocabulary score ($M = 5.07$, $SD = 1.21$) compared to the posttest Reading Vocabulary score ($M = 11.00$, $SD = 1.75$) was statistically significantly different, $t(13) = 10.99$, $p = 0.0001$ (one-tailed), $d = 4.00$. The pretest Reading Word Analysis score ($M = 4.64$, $SD = 1.69$) compared to the posttest Reading Word Analysis score ($M = 9.00$, $SD = 1.41$) was statistically significantly different, $t(13) = 6.78$, $p = 0.0001$ (one-tailed), $d = 2.81$. The pretest Total Reading score ($M = 28.00$, $SD = 1.47$) compared to the posttest Total Reading score ($M = 49.14$, $SD = 6.48$) was statistically significantly different, $t(13) = 13.99$, $p = 0.0001$ (one-tailed), $d = 5.32$.

Overall, pretest-posttest results indicated that 4th-grade students determined to have barely proficient reading

skills participating in regular classroom reading instruction did not significantly improve their posttest Reading Construct Meaning scores. However, 4th-grade students determined to have barely proficient reading skills participating in regular classroom reading instruction did significantly improve their Reading Story Structure, Reading Study Skills, Reading Vocabulary, Reading Word Analysis, and Total Reading Score posttest reading achievement score results. Pretest-posttest results for Reading Construct Meaning were in the direction of lower test score performance. Pretest-posttest results for Reading Story Structure, Reading Study Skills, Reading Vocabulary, Reading Word Analysis, and Total Reading were all measured in the direction of improved test score performance. Students' Essential Learner Outcome formative scores for Reading Construct Meaning were 8.50 correct at pretest and 7.64 correct at posttest for a -0.86 test score decrease. Students' Essential Learner Outcome formative scores for Reading Story Structure were 6.21 correct at pretest and 7.43 correct at posttest for a 1.22 test score improvement. Students' Essential Learner Outcome formative scores for Reading Study Skills were 3.37 correct at pretest and 14.07 correct at posttest for a 10.50 test score improvement. Students' Essential Learner Outcome

formative scores for Reading Vocabulary were 5.07 correct at pretest and 11.00 correct at posttest for a 5.93 test score improvement. Students' Essential Learner Outcome formative scores for Reading Word Analysis were 4.64 correct at pretest and 9.00 correct at posttest for a 4.36 test score improvement. Finally, students' Essential Learner Outcome summative scores for Total Reading Score were 28.00 correct at pretest and 49.14 correct at posttest for a 21.14 test score improvement. Statistically significant pretest-posttest gains were noted in five of the six formative subtests and a mean Essential Learner Outcome Total Reading Score of 49.14 surpassed the numerical threshold (39) required for reading proficiency.

Research Question #4

The fourth hypothesis was tested using the independent *t* test. A comparison of 4th-grade students who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction and 4th-grade students who received regular classroom reading instruction alone posttest compared to posttest Essential Learner Outcome score results were displayed in Table 14. As seen in Table 14 the predetermined .01 alpha level set for rejecting the null hypothesis was obtained for students who received required

individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction compared to students who received regular classroom reading instruction alone on all measured reading achievement subtests (a) Reading Construct Meaning, (b) Reading Story Structure, (c) Reading Study Skills, (d) Reading Vocabulary, (e) Reading Word Analysis, and (f) Total Reading Score. The posttest Reading Construct Meaning score for the students who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction ($M = 5.93$, $SD = 1.64$) compared to the posttest Reading Construct Meaning score for the students who received regular classroom reading instruction alone ($M = 7.64$, $SD = 1.98$) was statistically significantly different beyond the .01 level of confidence, $t(26) = 2.49$, $p = 0.01$ (one-tailed), $d = 0.94$. The posttest Reading Story Structure score for the students who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction ($M = 5.50$, $SD = 1.61$) compared to the posttest Reading Story Structure score for the students who received regular classroom reading instruction alone ($M = 7.43$, $SD = 1.40$) was statistically significantly different beyond the .01 level of confidence,

$t(26) = 3.39, p = 0.001$ (one-tailed), $d = 1.28$. The posttest Reading Study Skills score for the students who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction ($M = 9.93, SD = 4.05$) compared to the posttest Reading Study Skills score for the students who received regular classroom reading instruction alone ($M = 14.07, SD = 1.73$) was statistically significantly different beyond the .01 level of confidence, $t(26) = 3.52, p = 0.0008$ (one-tailed), $d = 1.43$. The posttest Reading Vocabulary score for the students who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction ($M = 8.29, SD = 2.40$) compared to the posttest Reading Vocabulary score for the students who received regular classroom reading instruction alone ($M = 11.00, SD = 1.75$) was statistically significantly different beyond the .01 level of confidence, $t(26) = 3.42, p = 0.001$ (one-tailed), $d = 1.30$. The posttest Reading Word Analysis score for the students who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction ($M = 6.71, SD = 2.02$) compared to the posttest Reading Word Analysis score for

the students who received regular classroom reading instruction alone ($M = 9.00$, $SD = 1.41$) was statistically significantly different beyond the .01 level of confidence, $t(26) = 3.47$, $p = 0.001$ (one-tailed), $d = 1.33$. The posttest Total Reading Score for the students who received required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction ($M = 36.36$, $SD = 8.86$) compared to the posttest Total Reading Score for the students who received regular classroom reading instruction alone ($M = 49.14$, $SD = 6.48$) was statistically significantly different beyond the .01 level of confidence, $t(26) = 4.36$, $p = 0.0001$ (one-tailed), $d = 1.66$.

Overall, results indicated that 4th-grade students participating in the required regular classroom reading instruction alone did have significantly greater posttest Reading Construct Meaning, Reading Story Structure, Reading Study Skills, Reading Vocabulary, Reading Word Analysis, and Total Reading Score reading achievement test score results compared to the posttest Reading Construct Meaning, Reading Story Structure, Reading Study Skills, Reading Vocabulary, Reading Word Analysis, and Total Reading Score reading achievement test score results for the 4th-grade students participating in the required individual learner

plan reading reteaching intervention used in combination with regular classroom reading instruction.

Research Question #5

Table 15 displays 4th-Grade Essential Learner Outcome total reading proficiency levels nomenclature at posttest Analysis of observed posttest-posttest district administered criterion-referenced ending of 4th-grade proficiency level cut score nomenclature for students total reading scores are found in Table 16. The fifth hypothesis was tested using chi-square (X^2). The result of X^2 displayed in Table 16 was statistically significantly different ($X^2(3, N = 28) = 12.62, p = < .01$) so we do reject the null hypothesis of no difference or congruence for observed posttest-posttest district administered criterion-referenced ending of 4th-grade proficiency level cut score nomenclature for students total reading scores.

Inspecting our frequency and percent findings in Table 16 we find that 4th-grade students participating in the required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction had Not Proficient nomenclature posttest frequencies (10, 71%) greater than students participating in regular classroom reading instruction alone (1, 8%). Fourth-grade students participating in the

required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction had Barely Proficient nomenclature posttest frequencies (1, 8%) less than students participating in regular classroom reading instruction alone (3, 21%). Fourth-grade students participating in the required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction had Proficient nomenclature posttest frequencies (3, 21%) less than students participating in regular classroom reading instruction alone (8, 57%). Finally, 4th-grade students participating in the required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction had Beyond Proficient nomenclature posttest frequencies (0, 0%) less than students participating in regular classroom reading instruction alone (2, 14%). Frequency and corresponding percent variance as noted in Table 16 indicates that 71% (10) of the students participating in the required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction had the same proficiency level nomenclature (not proficient) at posttest compared to pretest. However, the inverse was found for

students participating in regular classroom reading instruction alone where 71% (10) had improved proficiency level nomenclature (proficient and beyond proficient) at posttest compared to pretest.

Table 1

Gender and Descriptive Information of Individual Fourth-Grade Students Determined to be Not Proficient in Reading Who Received Required Individual Learner Plan Reading Reteaching Intervention Used in Combination with Regular Classroom Reading Instruction

Student		Free and Reduced Price Lunch Status	Special Education Accommodations
Number	Gender		

1.	Female	No	No
2.	Female	No	No
3.	Female	No	No
4.	Male	No	No
5.	Male	No	No
6.	Female	No	Yes
7.	Male	No	Yes
8.	Male	No	No
9.	Male	No	No
10.	Male	No	Yes
11.	Female	No	No
12.	Male	No	No
13.	Male	No	No
14.	Male	No	No

Table 2

Gender and Descriptive Information of Individual Fourth-Grade Students Determined to be Barely Proficient in Reading Who Received Regular Classroom Reading Instruction Alone

Student		Free and Reduced Price Lunch Status	Special Education Accommodations
Number	Gender		

1.	Female	No	No
2.	Male	No	No
3.	Female	No	No
4.	Male	No	Yes
5.	Male	No	No
6.	Female	No	No
7.	Female	No	No
8.	Female	No	No
9.	Male	No	No
10.	Female	No	No
11.	Female	No	No
12.	Male	Yes	No
13.	Male	No	No
14.	Female	No	No

Table 3

Terra Nova Norm Referenced Achievement Test Mastery Percent Scores for Fourth-Grade Students Determined to be Not Proficient in Reading Who Received Required Individual Learner Plan Reading Reteaching Intervention Used in Combination with Regular Classroom Reading Instruction

(a)	A (b)		B		C		D	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1.	88	89	81	85	86	80	73	77
2.	47	68	75	54	86	50	36	77
3.	53	53	44	46	71	30	36	54
4.	53	63	38	62	43	50	55	54
5.	41	42	38	15	57	50	45	38
6.	59	89	50	38	14	40	55	31
7.	53	79	31	62	57	30	45	54
8.	71	53	63	46	43	80	18	54
9.	76	89	63	85	43	50	55	38
10.	47	15	69	15	0	0	9	8
11.	41	95	6	100	43	60	55	85
12.	41	74	44	62	29	80	36	69
13.	59	32	50	23	43	20	64	8
14.	65	63	63	77	86	60	82	31

(a) Note: Student numbers correspond with Table 1.

(b) Note: A = Basic Understanding; B = Analyzing Text;
C = Evaluating Meaning; D = Identifying Strategies.

Table 4

Terra Nova Norm Referenced Achievement Test Mastery Percent Scores for Fourth-Grade Students Determined to be Barely Proficient in Reading Who Received Regular Classroom Reading Instruction Alone

(a)	A (b)		B		C		D	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1.	59	79	75	54	86	60	82	54
2.	35	68	50	85	80	80	73	62
3.	71	84	69	69	60	40	82	62
4.	82	89	63	85	86	90	82	85
5.	65	42	56	85	71	50	45	69
6.	69	63	44	15	43	70	55	69
7.	82	89	63	69	43	60	73	69
8.	47	79	63	54	57	70	27	85
9.	100	95	88	92	100	90	91	100
10.	59	74	63	62	43	80	64	77
11.	94	89	69	77	57	80	64	62
12.	88	84	75	85	86	80	82	85
13.	82	95	56	69	71	60	55	46
14.	76	95	81	85	86	60	64	77

(a) Note: Student numbers correspond with Table 2.

(b) Note: A = Basic Understanding; B = Analyzing Text;
C = Evaluating Meaning; D = Identifying Strategies.

Table 5

Fourth-Grade Students Determined to be Not Proficient in Reading Who Received Required Individual Learner Plan Reading Reteaching Intervention Used in Combination with Regular Classroom Reading Instruction Pretest Compared to Posttest Terra Nova Norm Referenced Achievement Test Mastery Percent Scores

Source of Data (a)	Pretest Scores		Posttest Scores		Effect Size	t	p
	Mean	SD	Mean	SD			
A	56.71	(14.16)	64.57	(23.74)	0.41	1.22	.12*
B	51.07	(19.80)	55.00	(26.50)	0.17	0.42	.34*
C	50.07	(26.18)	48.57	(23.49)	0.06	-0.20	.42*
D	47.43	(19.81)	48.43	(24.20)	0.09	0.12	.45*

(a) Note: A = Basic Understanding; B = Analyzing Text; C = Evaluating Meaning; D = Identifying Strategies.

*ns.

Table 6

Fourth-Grade Students Determined to be Barely Proficient in Reading Who Received Regular Classroom Reading Instruction Alone Pretest Compared to Posttest Terra Nova Norm Referenced Achievement Test Mastery Percent Scores

Source of Data (a)	Pretest Scores		Posttest Scores		Effect Size	<i>t</i>	<i>p</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>			
A	71.79	(18.12)	80.36	(14.84)	0.52	2.08	.03*
B	65.36	(11.96)	70.43	(20.11)	0.31	1.09	.15*
C	69.21	(18.90)	69.29	(14.92)	0.00	0.01	.49*
D	67.07	(17.42)	71.57	(14.32)	0.31	0.80	.22*

(a) Note: A = Basic Understanding; B = Analyzing Text; C = Evaluating Meaning; D = Identifying Strategies.

**ns.*

Table 7

Fourth-Grade Students Who Received Required Individual Learner Plan Reading Reteaching Intervention Used in Combination with Regular Classroom Reading Instruction and Fourth-Grade Students Who Received Regular Classroom Reading Instruction Alone Posttest Compared to Posttest Terra Nova Norm Referenced Achievement Test Mastery Percent Scores

Source of Data (a)	Students Not Proficient in Reading Posttest Scores		Students Barely Proficient in Reading Posttest Scores		Effect Size	t	p
	Mean	SD	Mean	SD			
A	64.57	(23.74)	80.36	(14.84)	2.91	2.11	.02**
B	55.00	(26.50)	70.43	(20.11)	0.66	1.74	.05*
C	48.57	(23.49)	69.29	(14.92)	1.08	2.79	.005***
D	48.43	(24.20)	71.57	(14.32)	1.20	3.08	.002****

(a) Note: A = Basic Understanding; B = Analyzing Text; C = Evaluating Meaning; D = Identifying Strategies.

* $p < .05$. ** $p = .02$. *** $p = .005$. **** $p = .002$.

Table 8

Essential Learner Outcome Pretest Scores for Fourth-Grade Students Determined to be Not Proficient in Reading Who Received Required Individual Learner Plan Reading Reteaching Intervention Used in Combination with Regular Classroom Reading Instruction

	A (b)	B	C	D	E	F
(a)	Pre	Pre	Pre	Pre	Pre	Pre
1.	6	4	4	5	3	22
2.	8	4	1	6	3	22
3.	5	5	3	5	2	20
4.	6	3	1	2	4	16
5.	4	7	3	7	1	22
6.	5	2	3	3	4	17
7.	6	6	4	4	2	22
8.	5	3	1	4	3	16
9.	4	5	5	4	3	21
10.	6	2	3	6	3	20
11.	8	5	3	4	2	22
12.	6	6	5	4	0	21
13.	6	5	3	3	4	21
14.	9	6	1	3	1	20

(a) Note: Student numbers correspond with Table 1.

(b) Note: A = Reading Construct Meaning; B = Reading Story Structure; C = Reading Study Skills; D = Reading Vocabulary; E = Reading Word Analysis; F = Total Reading Score.

Table 9

Essential Learner Outcome Pretest Scores for Fourth-Grade Students Determined to be Barely Proficient in Reading Who Received Regular Classroom Reading Instruction Alone

	A (b)	B	C	D	E	F
(a)	Pre	Pre	Pre	Pre	Pre	Pre
1.	11	6	2	5	4	28
2.	8	5	4	7	3	27
3.	8	4	3	5	4	24
4.	8	6	5	6	4	29
5.	9	6	3	4	6	28
6.	10	7	2	3	6	28
7.	10	6	4	3	6	29
8.	4	6	5	6	8	29
9.	11	5	2	5	6	29
10.	9	5	3	4	5	26
11.	8	7	4	5	5	29
12.	8	8	5	6	2	29
13.	9	8	3	6	2	28
14.	6	8	5	6	4	29

(a) Note: Student numbers correspond with Table 2.

(b) Note: A = Reading Construct Meaning; B = Reading Story Structure; C = Reading Study Skills; D = Reading Vocabulary; E = Reading Word Analysis; F = Total Reading Score.

Table 10

Essential Learner Outcome Posttest Scores for Fourth-Grade Students Determined to be Not Proficient in Reading Who Received Required Individual Learner Plan Reading Reteaching Intervention Used in Combination with Regular Classroom Reading Instruction

	A (b)	B	C	D	E	F
(a)	Post	Post	Post	Post	Post	Post
1.	8	5	16	12	11	52
2.	5	8	13	10	8	44
3.	6	5	9	4	5	29
4.	5	4	9	9	5	32
5.	7	3	5	5	7	27
6.	6	5	7	9	6	33
7.	5	6	10	7	5	33
8.	3	6	6	9	4	28
9.	8	8	16	9	9	50
10.	9	5	15	12	7	48
11.	6	4	12	7	8	37
12.	6	6	3	6	4	25
13.	4	8	9	10	7	38
14.	5	4	9	7	8	33

(a) Note: Student numbers correspond with Table 1.

(b) Note: A = Reading Construct Meaning; B = Reading Story Structure; C = Reading Study Skills; D = Reading Vocabulary; E = Reading Word Analysis; F = Total Reading Score.

Table 11

Essential Learner Outcome Posttest Scores for Fourth-Grade Students Determined to be Barely Proficient in Reading Who Received Regular Classroom Reading Instruction Alone

	A (b)	B	C	D	E	F
(a)	Post	Post	Post	Post	Post	Post
1.	6	7	14	8	8	43
2.	8	7	15	11	8	49
3.	4	5	11	9	8	37
4.	8	9	14	11	9	51
5.	8	7	15	13	7	50
6.	4	8	12	9	7	40
7.	10	9	15	11	9	54
8.	6	5	13	10	10	44
9.	10	9	16	13	11	59
10.	8	7	11	11	10	47
11.	8	6	14	13	9	50
12.	10	8	16	14	11	59
13.	8	8	15	10	11	52
14.	9	9	16	11	8	53

(a) Note: Student numbers correspond with Table 2.

(b) Note: A = Reading Construct Meaning; B = Reading Story Structure; C = Reading Study Skills; D = Reading Vocabulary; E = Reading Word Analysis; F = Total Reading Score.

Table 12

Fourth-Grade Students Determined to be Not Proficient in Reading Who Received Required Individual Learner Plan Reading Reteaching Intervention Used in Combination with Regular Classroom Reading Instruction Pretest Compared to Posttest Essential Learner Outcome Scores

Source of Data (a)	Pretest Scores		Posttest Scores		Effect Size	<i>t</i>	<i>p</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>			
A	6.00	(1.47)	5.93	(1.64)	0.04	-0.11	.46*
B	4.50	(1.56)	5.50	(1.61)	0.63	1.61	.07*
C	2.86	(1.41)	9.93	(4.05)	2.58	6.45	.0001**
D	4.29	(1.38)	8.29	(2.40)	2.11	5.29	.0001**
E	2.50	(1.22)	6.71	(2.02)	2.59	7.20	.0001**
F	20.14	(2.21)	36.36	(8.86)	2.93	7.25	.0001**

(a) Note: A = Reading Construct Meaning; B = Reading Story Structure; C = Reading Study Skills; D = Reading Vocabulary; E = Reading Word Analysis; F = Total Reading Score.

ns.* *p* = .0001.

Table 13

Fourth-Grade Students Determined to be Barely Proficient in Reading Who Received Regular Classroom Reading Instruction Alone Pretest Compared to Posttest Essential Learner Outcome Scores

Source of Data (a)	Pretest Scores		Posttest Scores		Effect Size	<i>t</i>	<i>p</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>			
A	8.50	(1.87)	7.64	(1.98)	0.04	-1.23	.12*
B	6.21	(1.25)	7.43	(1.40)	0.69	3.08	.004**
C	3.57	(1.16)	14.07	(1.73)	6.36	21.99	.0001***
D	5.07	(1.21)	11.00	(1.75)	4.00	10.99	.0001***
E	4.64	(1.69)	9.00	(1.41)	2.81	6.78	.0001***
F	28.00	(1.47)	49.14	(6.48)	5.32	13.99	.0001***

(a) Note: A = Reading Construct Meaning; B = Reading Story Structure; C = Reading Study Skills; D = Reading Vocabulary; E = Reading Word Analysis; F = Total Reading Score.

ns.* *p* = .004. ****p* = .0001

Table 14

Fourth-Grade Students Who Received Required Individual Learner Plan Reading Reteaching Intervention Used in Combination with Regular Classroom Reading Instruction and Fourth-Grade Students Who Received Regular Classroom Reading Instruction Alone Posttest Compared to Posttest Essential Learner Outcome Scores

Source of Data (a)	Students Not Proficient in Reading Posttest Scores		Students Barely Proficient in Reading Posttest Scores		Effect Size	t	p
	Mean	SD	Mean	SD			
A	5.93	(1.64)	7.64	(1.98)	0.94	2.49	.01*
B	5.50	(1.61)	7.43	(1.40)	1.28	3.39	.001**
C	9.93	(4.05)	14.07	(1.73)	1.43	3.52	.0008***
D	8.29	(2.40)	11.00	(1.75)	1.30	3.42	.001**
E	6.71	(2.02)	9.00	(1.41)	1.33	3.47	.001**
F	36.36	(8.86)	49.14	(6.48)	1.66	4.36	.0001****

(a) Note: A = Reading Construct Meaning; B = Reading Story Structure; C = Reading Study Skills; D = Reading Vocabulary; E = Reading Word Analysis; F = Total Reading Score.

* $p = .01$. ** $p = .001$. *** $p = .0008$. **** $p = .0001$.

Table 15

*Fourth-Grade Essential Learner Outcome Total Reading
Proficiency Levels Nomenclature at Posttest*

	Students Not Proficient (a)	Students Barely Proficient (b)
1.	Proficient	Barley Proficient
2.	Barley Proficient	Proficient
3.	Not Proficient	Not Proficient
4.	Not Proficient	Proficient
5.	Not Proficient	Proficient
6.	Not Proficient	Barley Proficient
7.	Not Proficient	Proficient
8.	Not Proficient	Barley Proficient
9.	Proficient	Beyond Proficient
10.	Proficient	Proficient
11.	Not Proficient	Proficient
12.	Not Proficient	Beyond Proficient
13.	Not Proficient	Proficient
14.	Not Proficient	Proficient

(a) Note: Student numbers correspond with Table 1.

(b) Note: Student numbers correspond with Table 2.

Table 16

*Analysis of Observed Posttest-Posttest District
Administered Criterion-Referenced Ending of Fourth-Grade
Proficiency Level Cut Score Nomenclature for Students Total
Reading Scores*

Group	A (a)		B (b)		χ^2
	<i>N</i>	%	<i>N</i>	%	
Beyond Proficient	0	(0)	2	(14)	
Proficient	3	(21)	8	(57)	
Barley Proficient	1	(8)	3	(21)	
Not Proficient	10	(71)	1	(8)	
Totals	14	(100)	14	(100)	12.62*

(a) Note: A = Fourth-Grade Students Determined to be Not Proficient in Total Reading at Pretest.

(b) Note: B = Fourth-Grade Students Determined to be Barely Proficient in Total Reading at Pretest.

* $p = .01$ for Observed versus Expected Cell Frequencies with $df = 3$.

CHAPTER FIVE

CONCLUSION AND DISCUSSION

The purpose of the study was to examine the achievement outcomes of 4th-grade students, identified in the 3rd-grade as not proficient in reading, after completing two years of regular classroom reading instruction used in combination with required individual learner plan reading re-teaching intervention (RCRI + ILPRRI) compared to the achievement outcomes of 4th-grade students, identified in the 3rd-grade as barely proficient in reading, who completed regular classroom reading instruction alone (RCRIA).

The study analyzed ending of the 3rd-grade school year pretest compared to ending of the 4th-grade school year posttest data to determine improvement in student reading outcomes over time and 4th-grade posttest compared to 4th-grade posttest reading outcomes data following 4th-grade students' completion of two years of regular classroom reading instruction used in combination with required individual learner plan reading re-teaching intervention (RCRI + ILPRRI) compared to the achievement outcomes of 4th-grade students, identified in the 3rd-grade as barely proficient in reading, who completed regular classroom reading instruction alone (RCRIA).

All study achievement data related to each of the dependent variables were retrospective, archival, and routinely collected school information. Permission from the appropriate school research personnel was obtained before data were collected and analyzed.

Students who participated in this study attended the research school for their 3rd-grade through 4th-grade school years, participated in the re-teaching and regular classroom reading instruction or regular classroom reading instruction only and have completed all assessments. Students with Individual Educational Plans (IEP) verified for inclusion in one or more Special Education classes were included in the research because they received reading instruction in the regular classroom and completed all school required assessments in the regular classroom.

Conclusions

The following conclusions may be drawn from the study from each of the five research questions. *Research Question #1:* Pretest-posttest results indicated that 4th-grade students who were determined to have below proficient reading skills and who received a combination of reading reteaching interventions and regular classroom instruction did not significantly improve their scores on the reading sub-tests for Basic Understanding, Analyzing Text,

Evaluating Meaning, and Identifying Strategies on the Terra Nova Achievement Test after completing a year of this combination of instructional practices even though pretest-posttest results indicated movement in the positive direction on these subtests. Results for the subtest of Evaluating Meaning actually indicated a decline in performance after a year of this instruction. Furthermore, pretest-posttest results indicated that 4th-grade students determined to have barely proficient reading skills and who received regular classroom reading instruction alone also did not significantly improve their subtest scores for Basic Understanding, Analyzing Text, Evaluating Meaning, and Identifying Strategies posttest reading achievement scores on the Terra Nova. However, all pretest-posttest results in these areas indicated some level improved test score performance for the students receiving regular classroom instruction alone.

Research Question #2: When analyzing mastery level for the various subtests of the Terra Nova and comparing the not proficient students' achievement with the barely proficient students' master level, there was no significant achievement difference on pretest-posttest data between the two groups in the areas of Basic Understanding and Analyzing Text. The barely proficient students however,

demonstrated significantly higher levels of mastery in Evaluating Meaning and Identifying Strategies.

Research Question #3: Pretest-posttest results indicated that 4th-grade students determined to have below proficient reading skills and who received a combination of reading reteaching interventions and regular classroom instruction did not significantly improve their Reading Construct Meaning and their Reading Story Structure posttest reading achievement score results on the district Essential Learner Outcome Exam (ELO) after a year of intervention. These same students did however significantly improve their Reading Study Skills, Reading Vocabulary, Reading Word Analysis, and Total Reading posttest scores on the ELO during the one year period. Overall, pretest-posttest results indicated that 4th-grade students determined to have barely proficient reading skills participating in regular classroom reading instruction alone showed a decrease in their posttest Reading Construct Meaning scores on the ELO. However, these same barely proficient students did significantly improve their Reading Story Structure, Reading Study Skills, Reading Vocabulary, Reading Word Analysis, and Total Reading Score posttest reading achievement on the district ELO.

Research Question #4: Overall, results indicated that 4th-grade students determined to have barely proficient reading skills and who participated in regular classroom reading instruction alone did have significantly greater posttest Reading Construct Meaning, Reading Story Structure, Reading Study Skills, Reading Vocabulary, Reading Word Analysis, and Total Reading Score reading achievement test score results on the ELO compared to the same ELO subtest score results for the below proficient students participating in the required individual learner plan reading reteaching intervention used in combination with regular classroom reading instruction.

Research Question #5: Findings indicate that 4th-grade students who were determined to have below proficient reading skills and who received a combination of reading reteaching interventions and regular classroom instruction had a lower frequency of movement to a higher level of proficiency than the barely proficient students who received regular classroom instruction alone. Seventy percent of below proficient readers remained below proficient after a year of intervention while seventy percent of barely proficient readers moved to a higher level of proficiency in the same time period.

Discussion

This study was conducted to determine the effectiveness of a combination approach to teaching reading to pre-literate students who were determined to be below proficient readers compared to the effectiveness of regular classroom instruction alone that was provided to similar, but slightly more proficient pre-literate readers. These students' proficiency levels were determined by psychometrically derived cutscores developed in order to minimize classification error. Yet like all such classification determination, borderline students exist which should place them in groups on either side of the cutscore but on a relatively similar achievement trajectory. This study found that although students on both sides of the cutscore made achievement gains in reading, gains were not always statistically significant and the students determined to be barely proficient receiving regular instruction alone made more reading achievement progress than their peers who were below proficient and receiving extra assistance in addition to the regular classroom instruction.

Accuracy of Psychometrics

The accuracy of the psychometrics used in the development of the Essential Learner Outcome Reading Exam

appears to be at a high level in the identification of those students who are truly below proficient and in need of intensive reading intervention. Using multiple methods to gain teacher data, the district appears to have set a cutscore that is both defensible and that minimizes classification error. Teaching children to read is a complex task. No less complex is the science of measuring reading proficiency levels and the accuracy of psychometrics in the area of reading carries a major responsibility because of federal No Child Left Behind requirements. In a school district initiated response to No Child Left Behind legislation, the Millard Public Schools developed a K-12 testing program that introduced the use of psychometrically developed and reliable assessments that included a standard setting process used to derive reliable, accurate, and legally defensible cutscores (Crawford, Crum and Lopez; 2008). The four proficiency levels derived from this process included Below Proficient, Barely Proficient, Proficient, and Beyond Proficient in mathematics, reading, writing, speaking, listening, science, and social studies. This work would eventually lead to the adoption of a high stakes graduation requirement in the district in the early 2000's.

The Oscar and Luella Buros Center for Testing at the University of Nebraska, was instrumental in implementing several standard setting methods which not only substantially increased the reliability of the assessments, but created a partnership that allowed the Buros experts to exercise their research agenda in the area of psychometrics (Crawford, Crum and Lopez; 2008). The cutscores used to identify the levels of proficiency of the students in this study were derived using these same psychometric processes.

Psychometrics is test development that is concerned with the measurement of human characteristics that are related to specific mental and intellectual abilities. Psychometrics has been the genesis of intelligence testing and has broadened into the areas of personality and vocational testing as well (Williams, 2008). In the current educational climate regarding testing and accountability, this science has become a vital part of the field of public education. Developing a sound, testing program requires a prescribed process used to complete each step from item development and administration to standard setting and scoring. A test that can be identified as legally defensible has been developed according to industry guidelines that identify specific skills and knowledge that define proficiency in a particular subject area or trade.

Test items are linked back to specific skills that are delineated for the job or in the educational setting, academic skill. Psychometricians develop a variety of measures that are not limited to the academic setting. Accurate measures of proficiency are necessary in many fields. Some examples include medical licensure exams and driving licensure exams (Waters, 2002).

Testing and reporting requirements by the federal government of student achievement across the country has created critical demand for individuals skilled in the area of psychometrics. Government and industry officials warn that a shortage of experts in the area can undermine the testing process leading to errors, with consequences such as children being misdiagnosed and schools and districts erroneously reporting student achievement resulting (Herszenhorn, 2006). The implication for the Millard Schools is that based on this study, a seemingly effective system is in place to identify students that are below proficient in reading which provides school staff with the necessary data to address learning needs.

Concern Regarding Growth in Reading Achievement

Having established confidence in the assessment system, it appears that there should be concern regarding limited statistically significant growth in the area of

reading for both groups in the study on the reading portion of the Terra Nova norm referenced exam. Particular attention should be given to the decrease in pretest posttest scores in the area of Evaluating Meaning by the below proficient students. Additionally, it would appear that students receiving a combination of services including regular classroom instruction in addition to reteaching interventions, although attaining some measure of growth, did not improve enough to raise their proficiency level to the barely proficient at a consistent rate with 70% remaining below proficient when examining posttest ELO data. Conversely, the barely proficient students made enough improvement to consistently move to higher levels of proficiency on the posttest ELO assessment with 70% moving to either the proficient or beyond proficient levels. It would appear that school districts would benefit from additional research in the area of effective reteaching strategies used across the district for below proficient readers.

Large school districts such as the Millard schools often find it challenging to make consistent achievement gains across this population. One of the reasons for this is that even though most school districts implement researched-based interventions at the building level, the

complexities of the naturally formed classroom and school settings makes generalizing interventions with consistent effectiveness difficult (Barr, 1986). Having said that, it is important to allow for variance in programs that are best suited for these naturally formed populations, but equally important to provide ongoing evaluation, feedback, and required use of proven instructional practices to maximize the potential for improved student reading outcomes.

Schuder (1993) indicates that although there are a multitude of approaches to teaching reading to K-6 at-risk learners, there are some critical elements that must be evident in intervention strategies.

These elements are: (1) provide regular opportunities to listen to and/or read and write about interesting and substantive text; (2) engage the students in actively constructing and evaluating interpretations of text; (3) teach students to value and use their own internal resources as an indispensable tool for learning; (4) provide frequent opportunities to discuss and write about their interpretations of text in heterogeneous and socially supportive environments; (5) provide instruction in executive control functions such as monitoring their

own comprehension; (6) provide explicit instruction of the above elements that include modeling, coaching, practice phrases, and cognitive apprenticeship. (p. 185)

Collins, Brown and Newman's (1989) concept of cognitive apprenticeship is reflective of situated cognitive theory in that it is situated within the social constructivist paradigm in which students work together on tasks that students can not manage independently and rely on the assistance of peers and the instructor to succeed. Overall, the Millard district is achieving high levels of proficiency, in the range of approximately 85% to 90%, on the first round of criterion referenced testing in all areas at all grade levels. Although the number of students who are identified as below proficient on these tests is relatively low compared to the total population, with additional research in effective reading strategies, evaluation of the effectiveness of building level programs, additional individualized reading instructional support, and one robust reading intervention, not two separate activities--regular classroom reading plus reading reteaching--for students correctly identified as below proficient, consistent gains should be expected.

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APPENDIX A

Letter of Approval for Research from the Millard Public
Schools (Copy of the letter available upon request)

APPENDIX B

Letter of Approval for Research from the Combined
University of Nebraska Medical Center/University of
Nebraska at Omaha Institutional Review Board for the
Protection of Human Subjects (Copy of the letter
available upon request)