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The Implementation of Interventions and Strategies for Children Who Struggle with
Reading Utilizing the Read 180 Program

by

Rebecca Josephine Haag Guyne

December 2009

A Dissertation submitted to the Education Faculty of Lindenwood University
in partial fulfillment of the requirements for the
degree of

Doctorate of Education

School of Education

Declaration of Originality

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

Legal Full Name : Rebecca Josephine Haag Guyne

Signature: Rebecca Josephine Haag Guyne Date: 10/30/09

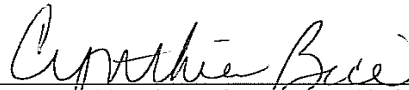
A Dissertation

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Rebecca Josephine Haag Guyne

This dissertation has been approved as partial fulfillment of the requirements for the degree of
Doctorate of Education
at Lindenwood University by the School of Education




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Abstract

All children can learn if given the opportunity, correct assistance, and appropriate instruction. Finding the learning tools which will enhance and encourage learning is the ultimate way to make certain that all students can and will learn. Many teachers use their gut instinct to determine the interventions and strategies to present in their classroom. Improvement will only occur for teachers and students when *best practice* or research-based interventions and strategies are not only accessible but utilized correctly on a daily basis. Children with reading disabilities find fluency and reading comprehension a challenge. The most effective method reported in the research to increase reading comprehension for students with learning difficulties seems to be a blending of direct instruction and strategy instruction. Early intervention and strategy instruction will assist all students to become better learners. This study primarily explored READ 180 to increase fluency and reading intervention strategies to enhance reading comprehension. Other strategies may have been employed but were not part of this particular study, as they are a normal part of the regular reading program. According to the findings of this research, the READ 180 program looks promising. There appears to have been a positive impact on learning of comprehension and fluency for students with learning difficulties related to READ 180. More implementation time and testing will be essential to ensure accurate data analysis on which to base instructional change.

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CHAPTER 1- Introduction

The No Child Left Behind Act of 2001 (NCLB) strives to increase the performance of schools in America by raising accountability standards, having higher expectations, and setting goals to achieve success for all students (Corcoran & Davis, 2005). This legislation focuses on reading and scientifically-based research to drive teaching and assessment. NCLB guidelines require interventions to be implemented in order to provide that all students master curricula set forth by states and districts. Finding the learning tools which will enhance and encourage learning is the ultimate way to make certain that students can and will learn. All children, including students with disabilities, are required to meet specified expectations. Despite the use of best practices and learning strategies, some students will continue to struggle academically. Learning strategies and interventions based on individual strengths or weaknesses should be implemented to aid students in completing tasks.

Learning strategies and interventions based on research are influential tools for individuals identified with and without learning disabilities. The past approaches of guessing or assuming what a student needs to succeed at reading simply will no longer work in the education system. Children are all unique individuals and should be instructed and aided according to their reading abilities. Too often children are acknowledged for their disabilities rather than their potential. All children can learn if given the opportunity, correct assistance, and appropriate instruction. A variety of programs exist to improve students' reading abilities. READ 180 is intended to offer an instructional setting to sustain students' individual variation in linguistic and conceptual development (DeVivo & Aguhob, 2004). DeVivo and Aguhob declared that READ 180

provides classrooms that “are effective because they engage students in authentic tasks that place the students in the position to create interesting and important multimedia products that teach their peers, parents and others about important life topics” (p. 41). Additionally, the systematic program provides for improved literacy, cognitive, and technology skills which are all indispensable for future educational endeavors.

Reading is essential for success in all content fields. President George W. Bush signed NCLB as a reauthorization of the Elementary and Secondary Education Act in January 2002 in an effort to make certain that all students obtain a quality education and attain proficiency in the core subject areas. Simply disseminating scores and continuing the status quo has become unacceptable in 21st century schools. Although standards and expectations are rising, many schools continue to rely on textbooks as the principal source of curriculum delivery even when the average student does not read at the grade level of these texts (Allington, 2005).

Students who struggle to read and comprehend text face an all-encompassing problem encountered by many students and adults. Biancarosa and Snow (2004) explained that more than 8 million students in grades 4 through 12 are struggling readers. The National Assessment of Educational Progress (NAEP) reports that 26% of students cannot read material generally deemed essential for daily living, such as road signs, newspapers, and bus schedules (Grigg, Daane, Jin, & Campbell, 2003). Furthermore, low reading achievement is a key risk factor for dropping out of school (Biancarosa & Snow, 2004).

Need for the Study

The multiple variables of the individual abilities of students and the prior skill levels of professional educators involved in reading programs simply demand a system of providing reading education in a unified, coherent manner. Teaching reading without adequate knowledge and guidance is, at best, a hit-or-miss method. Research that helps teachers effectively implement reading inventories, strategy instruction, and other valid teaching methods can enhance reading programs. Teachers need access to research-based reading interventions and strategies, although this is just the beginning step to actually improving instruction and learning for all students (American Institutes for Research, 2006). Many teachers use their “gut instinct” to determine the interventions and strategies to present in their classroom, but improvement will only occur for teachers and students when best practice or research-based interventions and strategies are not only accessible but are utilized correctly on a daily basis. A need exists for easy to implement research-based interventions and strategies that are determined by scientific research because students continue to have learning to read. One of the countless strategies aimed at more effective reading instruction is READ 180. Outcomes and conclusions related to READ 180 and strategy instruction showcase the potential for fluency and reading comprehension for all students with emphasis on students with learning difficulties. The number of strategies currently being employed in schools across the United States of America is an indication of the need for intervention, but that intervention needs to be data driven. The way educators perceive and interact with children determines more than the classroom management. Strategies, interventions, and the atmosphere for learning are

also influenced by teacher knowledge and implementation of reading programs and strategies that are being utilized.

Statement of the Problem

Most children with learning difficulties find fluency and reading comprehension a challenge. The focus for them is more on decoding each individual word and simply deciphering the text rather than reading for comprehension and meaning. Students with learning difficulties often fail to understand that they must focus on comprehending a text as they read and reread as necessary. The most effective method reported in the research to increase reading comprehension for students with learning difficulties seems to be a blending of direct instruction and strategy instruction (Sagor, 2003). When they participated in repeated reading, students with learning difficulties demonstrated increases in reading rate, accuracy, and comprehension. Repeated reading does improve the fluency for students with learning difficulties especially when fluency is built into daily reading instruction. Students with learning problems often dislike school and academic tasks due to years of struggling and minimal success. Turning these negative experiences around might be achieved by participation in successful reading and comprehension experiences. When students feel competent, they are more likely to acquire the needed skills to be successful readers. In turn, students experience satisfaction from feelings of competency (Sagor, 2003). Providing students with a motivational learning environment that encourages improvement of fluency and reading comprehension is a daily trial for educators. For any strategy or intervention to be applied, the teachers and students must perceive the benefits outweigh the drawbacks.

Purpose of the Study

The purpose of this case study was to investigate the effect of the execution of fluency and reading comprehension interventions and strategies on the achievement of students with learning disabilities. Early intervention and strategy instruction will assist students in becoming better learners. READ180 utilizes technology and printed text to construct vital reading and writing skills (“READ 180,” n. d.) Broad and varied forms of supported reading and writing experiences are included in the program. This study primarily explored the effect of the READ 180 program on fluency and reading comprehension. Supplemental language arts strategies and interventions may be employed by the READ 180 teacher but are not part of this particular study as they are a normal component of the regular reading program.

This case study is intended to heighten the awareness of the impact of strategies and interventions on students’ learning. Analysis of which strategies/interventions worked and the type of impact the intervention had on the students’ learning were completed. This study may also give the teacher a new understanding of students’ strengths and weaknesses as learners. Information gathering included Standardized Test of Assessment for Reading (STAR) Reading scores, previous reading rates, medical information from permanent records, and grades. STAR Reading involves three steps. First, students take a multiple choice test on the computer, then, teachers receive the results, and finally, the teacher makes data-driven decisions based on the test results (Renaissance Learning, 2009). The STAR software evaluates the leisure and instructional reading level for each student on a quarterly basis. Individualized reading levels and parent reports can be generated for each student.

Definition of Terms

The National Reading Panel Report (2000) analyzed five areas of reading instruction: fluency, phonemic awareness, phonics, vocabulary, and text comprehension. The National Reading Panel (2003) defined *fluency* as the ability to read a text correctly and rapidly. Reading fluently allows students to comprehend what they read. Fluency bridges recognition of words and comprehension. Reading fluency can be expanded through modeling fluent reading and repeated oral reading. Reading fluency monitoring assists teachers in evaluating reading fluency instruction and setting instructional goals. Tracking their reading fluency can also be motivating for students as they see their growth and success. Fluent readers are able to concentrate on comprehension, making connections between ideas in a text and idea from their background knowledge.

Additionally, NAEP defined *fluency* as the “ease or naturalness” of reading. Phrasing (intonation, stress, and pauses), syntax, and, expressiveness (sense of feeling, anticipation, or characterization) are all fundamental aspects of fluency (Pinnell et al., 1995, p. 1). The NAEP fluency scale identifies students at 3 and 4 as being fluent and students at 1 and 2 as non-fluent. Accuracy and rate are two additional facets NAEP assesses for oral reading. Accuracy means correctly read words, and rate indicates words read per minute (Pinnell et al., 1995).

Text comprehension is the reason for reading. Text comprehension must be purposeful, and the student must be actively involved. Text comprehension includes reading the material and then being able to answer questions related to the text. Developing text comprehension occurs through teaching comprehension strategies through explicit instruction and cooperative learning. Strategies must be flexible, and a

variety of strategies must be taught and utilized so that children with different learning styles can learn the required strategy (Pinnell et al., 1995). *Reading comprehension* is defined as a “crafting process—one in which understanding is constructed by students, authors, and teachers working artistically together to create knowledge” (Bock, 1999, p. 108).

For strategies to be successfully implemented, students must have meta-cognitive awareness of their reading processes. Four levels of meta-cognitive awareness and the ways in which readers monitor their thinking about their reading are described in *Strategies That Work* by Harvey and Goudvis (2000). Tacit readers lack consciousness of how they think as they read. Aware readers usually grasp when meaning has broken down, but they may be deficient in strategies to resolve the problem or repair misunderstanding. Strategic readers use a diversity of strategies to develop understanding, monitor, and mend meaning. Reflective readers employ tactics depending on their reading objective. They mull over their thinking process and adjust their strategies as needed.

The definition for *specific learning disabilities* identified one or more of the vital psychological processes. They include understanding and using language in spoken or written form which might lead to the “inability to listen, think, speak, read, write, spell or do mathematical calculations” (Department of Elementary and Secondary Education, 2006, p. 19). Included are conditions like perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Children with visual, hearing or motor disabilities, mental retardation, emotional disturbance, or environmental, cultural or economic disadvantage are not included in the specific learning disability definition.

Literacy is “an individual’s ability to use printed information to function in society, to achieve one’s goals, and to develop one’s knowledge and potential” (Kirsch, Jungeblut, Jenkins, & Kolstad, 1993, p. 2). *Adolescent literacy* is described as “the set of skills and abilities that students need in Grades 4 through 12 to read, write, and think about the text materials they encounter” (National Governors Association, 2005, p. 6).

Intervention is expressed as “integrated, strategic, meaningful, and if necessary, intensive curriculum and instruction to powerfully enrich and expand adolescents’ reading lives” (Greenleaf & Roller, 2002, p. 495). *Lexile* is defined as a metric used for matching text to reader (Scholastic, 2002b).

The *Normal Curve Equivalent* (NCE) is described as a score derived from an achievement or assessment test. The NCE is a method of calculating where a student falls along the normal curve which is divided into equal intervals from 1 to 99. These scores can be averaged and compared from one year to the next. An NCE score that stays the same from one year to the next denotes a normal growth pattern for that year (MacGinitie, MacGinitie, Maria, & Dreyer, 2000). Reading achievement is defined by NCE scores on the fall and spring administered STAR reading or the Scholastic Reading Inventory (SRI) and as the gain between the fall and spring administrations.

“READ 180 is a intensive, adaptive intervention program designed to meet the needs of students in grades four through eight whose reading achievement is significantly below grade level” (Scholastic, 2002a, p. 9). Read 180 includes direct and explicit reading instruction with appealing and age-appropriate content. Data-driven technology ensures that differentiated instruction and guided practice take place. Diagnostic and curriculum entrenched assessments drive instruction. Additionally, intermittent

evaluation of student progress and mastery assists the teacher in making instructional decisions.

Limitations

The major limitation of this research is sample size. It was limited to classrooms with students that qualify for READ 180 services. Increasing the data, data collection duration, population, and sample size would provide a better statistical base for analysis. The research in this paper encompasses students in third to sixth grade from one elementary in a district in central Missouri. Ensuring that the sample size represented the entire population of students with learning disabilities between kindergarten and college is needed. Multiple levels of research would be required to accomplish this broad goal.

Student selection for the READ 180 Program and the traditional reading program was based on low performance on reading pretests and principal recommendation. The READ 180 class was scheduled for 75-minute blocks every day. Scholastic (2004) specified that implementation ideally should be presenting READ 180 instruction for a 90-minute block 5 days per week. Selection of participants was compromised of parents who requested inclusion or exclusion from the READ 180 program. Additionally, due to the mobility of a community with military dependents several subjects that began the program were eliminated from the initial data collection. These subjects were replaced based on need without attention to random assignment. Data was only collected on students who completed at least eight months of READ 180 instruction.

Summary

The vast majority of all students will have some type of difficulty with reading at some point in their school years. Some individuals may be able to overcome their

difficulty independently, but many more will need explicit strategy instruction. The students will need to have knowledgeable instructors to guide their attempts and teachers should be aware of the most current and effective means to provide reading assistance based on the assessment individual strengths and abilities. A popular and apt analogy is that if the only tool in the toolbox is a hammer, then everything looks like a nail. Reading education simply must teach teachers that there is a multitude of reading tools/strategies from which to choose to address the multiple varieties of nails.

CHAPTER 2 - Review of the Literature

Introduction

After signing NCLB (2001), President George W. Bush declared, "Today begins a new era, a new time for public education in our country. Our schools will have higher expectations—we believe every child can learn. From this day forward, all students will have a better chance to learn, to excel, and to live out their dreams. (Committee on Education & the Workforce, 2002, p. 1)"

Educators strive to assist struggling students in the pursuit of learning which will hopefully allow them to reach their goals. Swanson (2006) cautions, "There is no 'miracle cure' for reading disabilities. Even a reading program that has all the right elements requires both student and teacher to be persistent and work steadily toward reading proficiency" (p. 92). The actual "cure" is simply a matter of hard work for all those involved. Teachers and students will likely have higher benefits if the hard work is based on research proven methods. The teacher needs to know the student's strengths and weaknesses as well as a gamut of strategies to address these areas. Quite often, students are unaware of the scope of their problem and the fact that they even have a problem, although they know they are struggling. Additionally, they do not know the strategies that good readers utilize to achieve fluency and comprehension.

Cooter, Mathews, Thompson, and Cooter (2004) suggested that teachers employ "random acts of teaching" (p. 388) instead of practices based on research as a manner to determine instruction. Phonemic awareness, explicit instruction in phonics, reading comprehension, reading fluency, and vocabulary development are all areas included in reading strategy continuums which are based on research. Teachers who are reflective

and complete self-evaluation improve their efficiency and effectiveness, which allows them to assist students in achieving academic outcomes. Self-assessment should be completed at the beginning of the year and toward the end of the school year so that the data can be utilized during professional development planning, allocation of resources, and planning for the upcoming school year. Honest self-assessment is essential for valuable and efficient execution of reading strategies. Running records, guided reading in flexible, small groups, and utilizing graphic organizers are research-based reading strategies that increase higher levels of reading comprehension. Running records are informal classroom assessment methods to report instruction as compared to decoding development for students. Reading strategy continuums should be used in individual classrooms, buildings, and throughout the entire district to help educators provide reliable and constant instruction based on the needs of all students.

Some students need an intensive version of the existing curriculum. Teachers must try a variety of approaches and strategies as they monitor what works for each student. The National Reading Panel (2003) stated that the best approach to increase fluency is individual or small group instruction that is supported and guided by a teacher. Reading materials multiple times, also known as repeated reading, can be helpful to struggling readers. Repeated reading is not perfect, but it does make students better and faster by encouraging them to read more. Phonics practice, increasing familiarity with high frequency words, and vocabulary development are all increased through repeated reading. Struggling students do not understand the difference between being good readers and being good readers. They need to be taught that some good readers must read slowly in order to reflect, respond, and comprehend the meaning of the text. Modeling

comprehension strategies with all reading is essential. Students should be taught to look at the title, pictures, and headers. Predicting, reflecting and developing mental images are all strategies that good readers use as they read. Additionally, good readers re-read, slow their reading, check for understanding, and make inferences and connections as they read. As struggling readers become more actively involved, their comprehension improves. Daily comprehension instruction and continuous addition of strategies will enable students to construct meaning from text through imagery, prediction, connections, questions, clarification, and summarization (Duke & Pressley, 2005).

READ 180

READ 180 is intended to offer an instructional setting to sustain each student's individual linguistic and conceptual development. Additionally, the systematic program improves literacy, cognitive, and technology skills, which are all indispensable for future educational endeavors. The Cognition and Technology Group at Vanderbilt (1990) touts READ 180 as one of the best new ideas for literacy development. The focus of the READ 180 program is generating real-world experiences to assist students in connecting experiences in the classroom and the community. The READ 180 program is based on research conducted by Hasselbring of Vanderbilt University in 1985. Hasselbring and a team of researchers, with support from the Cognitive and Technology Group, were curious about the function technology could perform in quickening the learning for students with mild disabilities. Hasselbring and his team of researchers determined that the obstacles to reading success included decoding skills and reading fluency issues, inferior comprehension due to inability to form mental representation, lack of vocabulary, limited background knowledge, an inability to manage and comprehend grade-level text

with a focus on content-area academic language, low motivation, and lack of associations to materials and schools. Hasselbring and the team of researchers state that READ 180 was intended to attend to the needs of struggling readers. The objective of the research team was to draw on technology for individualizing instruction to address the needs of the at risk student. READ 180 utilizes direct and explicit reading instruction through engaging and age-appropriate content. Data driven educational endeavors guarantee that differentiated instruction and guided practice take place (Scholastic, 2005h).

The researchers worked jointly with the Orange County Public Schools to enhance READ 180 (Scholastic, 2005a). This merging of their work became the foundation for the READ 180 instructional model. Scholastic combined the work of the researchers at Vanderbilt and the work of the Orange County Public Schools with universal access features created by Rose and his team from the Harvard Center for Applied Special Technology in 1997. Universal design features provided organization within the READ 180 software that would accommodate students with disabilities and struggling readers (Scholastic, 2005g).

Scholastic also integrates the Lexile system for leveling reading materials developed by Stenner. The Lexile Framework for Reading makes use of reading measurement to match readers' current level of reading ability to appropriate text. The reader's capabilities and the text complexity are calculated on the Lexile scale. Educators have the ability to examine reading comprehension and support reader progress using Lexile measures within the READ 180 program (Scholastic, 2005e). The Lexile scale extends from 200L for the beginning or struggling reader to 1700L for the advanced or avid reader.

The effectiveness of the READ 180 program was addressed by a study of the reading achievement and proficiency of struggling readers in Boston, Massachusetts; Columbus, Ohio; and Dallas, Texas (Scholastic, 2005a). Additionally, the extent that teachers dependably implemented READ 180 was recorded. Students from the three contributing districts that participated in READ 180 classes verified greater reading achievement than the control group. Reading comprehension growth did occur in Boston, Columbus, and Dallas when the READ 180 program was utilized. Academic progress was noted when the treatment groups were compared to students in the control group. The results indicate that READ 180 can demonstrate reading improvement for struggling readers. The data showed “statistically significant improvement in reading scores” (Scholastic, 2005a, p. 6)

Most classrooms, including many regular and special education which deal with struggling readers, do not provide systematic instruction based on technology and direct instruction. “Developed in clinical and classroom settings, the program is uniquely positioned to address the needs of struggling readers (Scholastic, 2005c, p. 1).” READ 180 is a research based program which utilizes technology and direct instruction to build phonics, fluency, vocabulary, comprehension, and spelling skills. Materials include a variety of useful elements that offers a concise instructional path, a professional development component, assessment instruments to be utilized with students, and materials that make differentiating instruction easy. A Quick Start Kit consists of tools to begin a READ 180 classroom. The *Anchor Videos* aid students at the beginning of each workshop to construct background knowledge about the upcoming workshop topic. Each workshop includes at least three lessons with a focus skill and topic which are located in

the students' rBook. The teacher's edition of the rBook provides instructional material with specific daily instruction that encompasses both whole-group and small-group instruction. The Teacher Bookshelf holds a variety of teaching instruments which are easily organized and managed (Scholastic, 2005a). Additionally, the program provides assessment tools that allow teachers to evaluate students and employ data to differentiate instruction for struggling readers and English Language Learners students. READ 180 Software incorporates instructional CDs and support manuals to assist with installment and ensures that the program operates the software productively. The Scholastic Achievement Manager (SAM) manages the data for the READ 180 program. SAM assembles and categorizes student performance information which allows teachers to present data-driven instruction and to comply with Annual Yearly Progress requirements for accountability. Additionally, SAM supplies district-wide aggregated data for teachers and administrators. SAM can produce reports for individual students, classes, schools, and the entire district while connecting standards based resources to core skills. Through SAM, teachers and administrators can generate informative and comprehensive reports on student progress on a continuous basis to recognize deficiency areas which allows for additional instruction in problem areas. Finally, the Professional Development component promotes and maintains training that focuses on best practices of teaching for the students. READ 180 assessments and management tools can assist teachers to optimize decision-making and instruction of new strategies taught to the students.

The student materials are required as an essential part of the program (Scholastic, 2005a). Student rBooks include daily lessons that focus on reading comprehension, vocabulary, and writing and grammar skills instruction for whole-group and small-group

instruction which will encompass at least a year's worth of instruction. Nine Topic Software CDs are a key component of the program because they provide individualized instructional software. Each high-interest video piece constructs background related to the theme. The Topic Software offers custom-made reading training and instruction that is individualized for each student. READ 180 software permits students to work with computers to develop and practice comprehension, vocabulary, and spelling concepts (Scholastic, 2005f). Software differentiates instruction for each student, and as they make progress, the computer adjusts the content level. Data-driven instruction enables teachers to precisely focus the individualized teaching and concentrate on specific problem areas during small-group and one-on-one sessions. Paperbacks for Independent Reading include 30 titles with five copies of each title. These high-interest instructional books are age-appropriate and leveled by Lexile which permit students to effectively read independently at their reading ability level. Additionally, there are twelve audiobooks with five copies included in the set. Each audiobook includes a paperback and a corresponding audio CD that assists struggling readers to support reading skills and encourage love for reading through authentic grade-level text.

Direct Instruction

Watkins (1997) acknowledged that there are three main elements that facilitate the effective execution of the Direct Instruction method. The primary factor was how the program is designed. Direct instruction identified strategies, concepts, and rules that were taught and modeled in a clear manner. Each lesson encouraged the students to respond to group and individual questions as well as complete reading activities on a daily basis. Teachers are obliged to make adjustments to instruction immediately to ensure progress

and growth for all students. Direct Instruction programs can be highly effective for the students who struggle with learning to read when they are implemented in a high quality and professional manner. The next element that determines success is how the instruction is structured. This included scheduling and combining student groups by ability and skill deficiencies. Monitoring progress must be a continual process for students on an individual basis. Direct Instruction programs group students according to their abilities, meeting the needs and requirements of each individual student. The third component is the student-teacher communication system. This system requires and ensures that every student is actively engaged in the learning process.

The Florida Center for Reading Research (2004) explained that READ 180 is a comprehensive reading intervention program for struggling readers in grades four through twelve. Stage A targets elementary students while Stage B targets middle school students, and Stage C targets high school students. Daily lessons include two whole-group instructional sessions, which occur at the beginning and end of the instructional time. Additionally, there are three small-groups that rotate during the sessions. The aim of the program is to boost the students' decoding, fluency, and comprehension skills. A typical instructional period lasts a total of 90 minutes. Each session begins with 20-minutes of whole group instruction where the teacher performs a read-aloud activity, models fluent reading, utilizes best practice reading strategies, and employs shared reading, choral reading, or other group reading strategies to engage students. Students then rotate through a direct instruction session with a teacher, a computer focused session, and a guided reading session, all of which last 20 minutes each. During the direct instruction with the teacher, the educator supplies small group, differentiated instruction.

The SRI is a placement test that delineates reading levels for individual students, which the teacher utilizes to develop groups for different rotational groupings. Evaluating the students' progress through the computer generated progress monitoring system or SAM system can also aid instructional planning. Teachers can expand a new concept or re-teach a prior concept that has not been mastered. The intention of the small group reading, writing and grammar, word study, and test-taking instruction is optimized with guidance and monitoring by the teacher.

The Computer rotation session encompasses several components (Florida Center for Reading Research, 2004). In the Reading Zone a student begins by watching a brief video intended to facilitate the building of background knowledge centered on material, which is followed by a reading passage. The student then reads this concise passage that is based on his or her reading level. The passage includes word supports, phonics patterns, model spelling examples, high frequency words, and content words that correspond to the student's reading level. The student may re-read the passage as many times as needed. *Power words* are pronounced and spelled, definitions are provided, words are broken down into parts, and decoding tips are given. Comprehension questions are asked after the reading is completed, and the chart illustrates the number of words he or she read. The Word Zone is intended to target automaticity and fluency. The final component entitled the Spelling Zone assesses knowledge of words from the prior passages and presents a word study activity that focuses on blends, inflected endings, digraphs, spelling, and fluency practice. A report of the number of words mastered can assist the teacher with future planning and individualizing the instruction. The Success Zone is the final computer zone that emerges after students have verified mastery of all

reading concepts that include Reading, Word, and Spelling Zones (Scholastic, 2005f). Discrepancy passages, cloze procedure activities, and a final oral reading practice are all a part of the Success Zone. During the final reading students are allowed to record and listen to their oral reading of the passage as the computer records and stores the reading on the teacher's server. The advantage to this is that the teacher may execute fluency checks or share samples of readings with parents at parent-teacher conferences.

The Florida Center for Reading Research (2004) identified the guided reading session, called the library station, as a way to allow students to read silently and complete Quick Writes, written comprehension exercises that are centered around the books currently being read. This allows the teacher to assess reading comprehension at frequent intervals. There are twelve audiobooks and forty paperback books at four reading levels. The audiobooks make available two levels of support for the reader by supplying the voice of a reading coach as a model of comprehension strategies and think-alouds.

The teaching kit also includes a teacher's guide, a resource book, strategy books, a reports guide, a collection of blackline masters, and classroom management forms (Scholastic, 2005a). These supplemental resources present teaching plans, graphic organizers, activities, and suggestions for teaching diverse students in a READ 180 classroom. Hearing and vision impairment are compensated for through closed captioning of videotext and increased text font size. Student materials comprise paperback books, audiobooks, and nine Topic CDs that contain four pre-reading video segments. Each of the topics supports a focal point or theme of People and Cultures, Science and Math, History and Geography.

Assessment and Placement Testing for READ 180

READ 180 contains numerous types of assessments (Scholastic, 2005e). The SRI is utilized to group students and examines progress throughout the program. Daily monitoring observations occur through comprehension questions, spelling tests, and cloze procedure exercises placed in the Word, Spelling, and Reading Zones. The comprehensive technology component supplies immediate and continuous feedback for teachers by providing detailed progress reports. The STAR Test is designed to assess the student instructional reading level. STAR Reading requires students to take the test on the computer, and then teachers receive the results and make data-drive decisions based on the test results (Renaissance Learning, 2009). The test also gives a scaled score, grade equivalent, percentile rank, normal curve equivalent, and zone of proximal development. Students are required to read scored text and enter the omitted words from a set of multiple choice options. STAR utilizes the student's answers to increase or decrease the degree of difficulty of the upcoming passage based on the student's performance on previous questions. The primary STAR goal of the test is to calculate the instructional reading level of each student. Pelegrino, Chudowsky, and Glaser (2001) emphasized that greater student growth is achieved when instruction and assessment are entwined.

READ 180 helps educators meet the accountability requirements of NCLB. The legislation states that five essential elements must be part of an effective reading program. These elements are phonemic awareness, phonics, fluency, vocabulary, and text comprehension. READ 180 addresses these fundamental reading components and also helps schools meet other NCLB requirements ranging from providing superb assessment tools to offering quality professional development.

Reading Comprehension and READ 180 Implementation

The National Reading Panel (2003) emphasized that six comprehension strategies have been shown to improve reading comprehension. These include monitoring comprehension, using graphic organizers, answering questions, generating questions, recognizing story structure, and summarizing. Scholastic (2006a) stated that READ 180 includes numerous lessons for direct instruction in self-monitoring strategies. Graphic organizers are utilized during comprehension lessons, during teacher modeling, and students even independently use graphic organizers as they are reading passages in the rBook. Students have many opportunities to pose and respond to questions both orally and in written form as they participate in the reading, writing, and skills instruction activities. Additionally, READ 180 provides a variety of direct instruction lessons that focus on text structure and summarizing. Opportunities also exist to practice these skills during reading and writing in the program. Marzano (2004) asserted that the connection between academic background knowledge and academic achievement is one of the top interventions utilized to augment student achievement. The READ 180 program ensures that this occurs through the use of energetic and vibrant videos. Each rBook Workshop begins with a video that expands the background knowledge and academic vocabulary of students prior to reading the passages on the Topic Software. The student's mental model of the content material supports comprehension of the written text. Both of these supplementary materials offer an irreplaceable method of building background knowledge and sparking the interest of the students.

Computer-Based Instruction and READ 180 Implementation

Fulton (1998) expressed her opinion that computer-based instruction helps students learn additional material in shorter time with more enthusiasm about the subject material. Scholastic (2006a) maintained that READ 180 provides continual practice opportunities to enhance fluency. The READ 180 program through the Topic Software delivers an innovative and appealing manner to address each students individualized reading difficulties. Feedback is obtained in a tireless and accommodating method that supports and provides success which they may not have experienced during previous learning situations. Eagerness and zeal for learning is apparent as the students complete READ 180 software. This educational tool not only intensifies student participation in the process, but the computer-based instruction also creates instruction that is effective and successful.

Fluency Research

Reading research and instruction has focused primarily on phonemic awareness, phonics, vocabulary development, comprehension, and building fluency which is especially helpful for struggling readers. In 2000 the National Reading Panel reported that students who do not develop reading fluency are likely to remain poor readers throughout their lives. The National Reading Panel examined research related to two instructional strategies that are used in the majority of classrooms worldwide to build reading fluency. Repeated oral reading and independent silent reading provide students with reading practice opportunities. As previously noted, repeated oral reading requires reading out loud from a passage several times with guidance and feedback from a fluent reader. Independent silent reading, also known as Drop Everything And Read and Silent

Sustained Reading, encourages students to read independently, normally without guidance and feedback. Research reveals that repeated oral reading with guidance and feedback improve the reading ability of readers until at least 5th grade (Osborn, Lehr, & Hiebert, 2003). Struggling readers at higher grade levels are also positively affected by repeated reading with guidance and feedback. The National Reading Panel (2000) did not endorse or reject independent silent reading for use in the classroom; however, struggling readers do not build fluency through independent silent reading without additional support and instruction in a variety of settings. Providing time to discuss, interpret, and recommend text after independent silent reading is a way to make this time more productive (Osborn, Lehr, & Hiebert).

Instruction in fluency is the most neglected skill of the five critical reading areas for young children (Carbo, 2005). Research showed the importance of reading fluency to facilitate proficient reading comprehension (Stevens, 2006). Oral reading is considered a quality method for promoting reading fluency. High quality oral reading practice tends to develop fluent reading. Research indicated that instructional methods for improving students' reading fluency performance should utilize partner reading or repeated reading to develop automaticity and fluency (Stevens). Auditory models used for assisted reading will provide appropriate phrasing and fluency for students of lower reading ability. Practice to increase processing speed through naming letters and numbers quickly might need to be considered for those with extremely low reading ability. Reading fluency and reading comprehension for students falling far behind their peers will be improved by all of these strategies: utilizing a combination of oral reading practice, assisted reading to develop prosody, and speed of processing practice. Oral reading yields important

increases in students' reading fluency. As fluency increases, comprehension is easier to master (Stevens).

As teachers consider how they teach fluency, they should encourage their students to remember several important concepts about fluency. Readers who think about their reading do not always read fast. The reader's pace changes depending on the difficulty of the text, the vocabulary, and the purpose for reading. Readers who self-monitor while they read often self-correct words and phrases. Repeating words and phrases occurs when readers are struggling with meaning. Fluent silent readers may not orally read fluently, and readers are not really required to be fluent orally. Inclusion of oral reading by a teacher, repeated readings, reading the walls, choral reading, readers' theater, echo reading, nursery rhymes, and read-alongs should all be considered in reading and language arts curriculums as a means to improve fluency (Manning, 2004).

The National Reading Panel Report (2003) analyzed five areas of reading instruction which included phonemic awareness, phonics, fluency, vocabulary, and text comprehension. Orally fluent readers are able to concentrate on comprehension. Several ways students can practice oral rereading of text included student-adult reading, choral reading, tape-assisted reading, partner reading, and readers' theatre. Student-adult reading means the student reads one-on-one with an adult who models fluent reading. The adult provides assistance and encouragement as the student rereads the passage until becoming fluent, which typically takes three to four rereads. Choral reading requires students to read with a group and a fluent adult reader. Then the adult rereads the book and invites students to join in as they recognize the words the adult is reading. The student continues rereading the book after a read aloud until students have read the book three to five times

total during the same day. Tape-assisted reading allows students to read along with a fluent reader, who is reading the passage on an audiotape. During the initial reading, students should follow along with the tape and point to each word the student hears on the tape. Students should then read along with the tape until the students can independently read the text without assistance from the tape. Partner reading encourages student pairs to read aloud to each other. The more fluent reader begins reading the first passage to provide a fluent model. The dysfluent reader repeats the same text. The fluent reader provides pointers and support for the less fluent partner. However, partner reading can also work with children who read at the same level to practice rereading the passage.

Instruction in fluency is the most neglected skill of the five critical reading areas for young children. Fluency instruction should provide eloquent models who encourage repeated reading until struggling students can meet the criteria previously set for fluency. Repeated reading utilizes a variety of assisted reading methods such as shared reading, echo reading, recorded books, neurological impress, choral reading, and pair reading (Carbo, 2005). High-interest reading materials on tape and written text should be provided so that students can compare written text and spoken words (Carbo).

Struggling readers who utilize all of their cognitive resources just to decode words are unable to devote the needed resources to achieve full comprehension. Reading that includes good phrasing and expression assists readers to construct meaning from words that they see in print. Without appropriate phrasing, expression, and meaningful reading, comprehension will not be attained. Rasinski (2003) stated, "Reading fluency is the ability to read quickly and accurately, with appropriate and meaningful expression. It may be thought of as the bridge between two other major components of reading:

decoding and comprehension” (p. 16). Effective fluency instruction must contain modeling fluent reading for students, allow time for students to practice reading and repeated reading, and supply support while they read. Supportive reading allows students the opportunity to listen to fluent readers. Poetry reading, partner reading, and performing Reader’s Theater scripts provide natural ways to increase fluency as part of the reading curriculum. Buddy reading allows formative feedback that provides support, encouragement, and tips for struggling readers through peer backing. As students participate in naturally occurring feedback, they develop fluent reading awareness through their own experiences as they focus on expression, smoothness, and pace.

High-level thinking is needed to summarize, analyze, and synthesize material during reading which requires fluency. Research showed that students who lack fluency are less able to understand what they read. Allington’s successful practice requires that children select reading material using the Goldilocks principle (Allington, 2004, p.12). These books are not too easy or not too hard, but “just right.” The decoding skills or vocabulary knowledge of students are challenged by a word or two, and several sentences utilize literary structure that might require the use of reading strategies to determine meaning (Allington, 2004, p. 12). Research showed that modeling fluent reading through teacher read-alouds, audiotapes, reading partners, and choral reading improved children’s fluency (Allington, 2004). Shared reading activities have been proven to stimulate more fluent reading which means that performing a reading activity with a peer initially, before choral reading, will benefit students. Fluency is increased as errors are eliminated. Teacher correction of errors will hopefully lead to students self-correcting themselves as they read. The University of Illinois developed a self-monitoring strategy to aid students

with learning disabilities to witness that their fluency and comprehension increases with each repeated reading (Allington, 2004). The three color pen strategy uses red to identify the word they missed during the initial reading, blue for the second reading, and black for the third. Students tally the words missed for each reading and then chart the data to show their development.

Blau (2007) mentioned NAEP when she reports that 45% of all fourth graders in the United States are not fluent readers. She suggested five strategies to assist second through fifth graders in making gains in fluency. Blau stated,

The most powerful way for you to help your students is to read aloud to them, often and with great expression. Choose selections carefully. Expose them to a wide variety of genres including poetry, excerpts from speeches, and folk and fairy tales with rich, lyrical language - texts that will spark your students' interests and draw them into the reading experience. (para. 4)

Encouraging students to share their thoughts after listening to an adult read and discussing what good readers do allows students to think about how a fluent reader engages the listener. Rereading promotes fluency and the discussions that occur during the repeated readings should focus on phrasing, rate, and intonation. Following-up this with echo-reading and choral reading promotes fluency for all students if this activity is engaged in without fear of embarrassment. Poetry enables educators to promote phrased reading which ensures that reading is seamless. Choppy, halted reading is eliminated by writing the lines of the poem on sentence strips. This models that good readers cluster or chunk portions of text rather than reading words individually. Tutors can provide one-on-one support for 15 minutes or more to assist non-fluent readers become familiar with

material that will be covered in upcoming lessons. Reader's theater conveys meaning through expression and intonation. Students focus on interpreting the script instead of memorizing it. Reader's theater utilizes reading the script aloud, echo or coral readings by the entire class, practice reading with individual parts, and finally presenting the script to an audience.

Fluent oral readers are able to concentrate on comprehension. Several ways students can practice oral rereading of text included student-adult reading, choral reading, tape-assisted reading, partner reading, and readers' theatre. Allinder, Dunse, Brunken, and Obermiller-Krolikowski (2001) focused on oral reading to improve the performance and determine progress of students with learning disabilities and reading difficulties. Participants in this study included 50 students in 7th grade enrolled in three remedial reading classes who were randomly assigned to the fluency strategy group or the no-strategy group. The reading instructional program comprised three major instructional components. One instructional component focused on comprehension that included group discussion led by the teacher and questions regarding characters, plot, predictions, and unfamiliar vocabulary. Phonics skills were addressed in the second instructional component. The teacher taught specific phonics rules through direct instruction, teacher modeling, and student practice. The third reading program component was oral reading where students read aloud at least twice during each class period, and teachers explained and asked the students questions. Data indicated that all students improved in comprehension based on a standardized norm-referenced test of comprehension. Students who utilized a specific oral reading strategy made significantly greater progress in reading based on curriculum-based measurement maze procedures. Middle school

students with reading problems or learning disabilities benefit from reading programs which use oral reading, fluency skills, and emphasize comprehension. Student gains are observed when they are encouraged to apply specific oral reading strategies while participating in small-group reading instruction. Teachers should be encouraged to identify and implement individual reading strategies, create a device to reinforce the strategies, and give frequent reminders for students to follow the strategies.

Phonemic Awareness and READ 180 Implementation

The National Reading Panel (2003) reported that children learn to read, spell, and comprehend text through phonemic awareness instruction. Additionally, it declared that oral blending and segmentation are vital elements of developing phonemic awareness, which ultimately leads to growth in reading and spelling. Scholastic (2006a) stated that the Topic Software affords teachers the ability to individualize phonemic awareness training centered on the needs of each student. Phonemic awareness is developed through word identification and spelling in the READ 180 program. The Topic Software provides guidance in segmentation, blending, and letter-sound relationships as it relates to words and patterns that have not been mastered previously. READ 180 instruction allows the teacher to explain, model, and give guided practice which bestows instantaneous, corrective guidance.

Fluency and READ 180 Implementation

Students can increase their fluency by listening to fluent models, through repeated reading with supervision, and by fusing reading training with reading practice at their independent reading level according to the National Reading Panel (2003). Furthermore, the same document advised, “Monitoring and assessing student progress in reading

fluency is useful in evaluating instruction and setting instructional goals. It can also be motivating to students (Nation Reading Panel, 2003, p. 31).”

Scholastic (2006a) affirmed that READ 180 activities require students to repeatedly read passages of related text with changing levels of audio support and speed. Continuous scaffolding exercises adjust to each student’s level of mastery. The Topic Software requires that students recognize words at escalating speeds to continue constructing automaticity and fluency. During Whole-Group teacher read-alouds, the teacher models fluent reading. While students are in Small-Group Rotations, a narrator utilizes READ 180 Audiobooks to model fluent reading of books on CD. This intervention provides examples of fluent reading, phrasing, and expression as the narrator reads.

Scholastic (2006b) provided text with Lexile leveled books that are age-appropriate and inspire students. The Paperbacks provide indispensable reading practice, increase fluency, create success, and give the student confidence to read more. During Small-Group Rotations, students participate in timed fluency practice while utilizing the Topic Software. Students have numerous chances to record their own oral readings, play back their version, and self-assess their own reading. Upon achieving mastery, a final recording of the passage is saved in students’ electronic portfolios. This provides the students with a sense of accomplishment due to the improvements which have occurred since their initial reading of the passage. The final recording is also an excellent assessment tool for the educator. Differentiated fluency mini-lessons in the Teacher’s rBook include activities that offer a diversity of techniques for students to apply fluent reading to segments of each reading selection.

Reading Comprehension Strategies and Research

Baumel (n.d.) asserted that the aim of reading is to grasp written text, assimilate new ideas, and generalize from what is read to other situations. Children who struggle to sound out words will likely have difficulty remembering information read when arriving at the end of the sentence or paragraph. Reading quickly and fluently leads to understanding the meaning of what is read. Reading out loud will assist with comprehension. Research has shown that oral reading practice promotes easy and natural reading. Providing opportunity to talk and write about reading enhances understanding. Using prompts and questions while reading improves reading comprehension skills. Keeping students motivated is crucial in employing these strategies during reading. Understanding oral language, decoding the written materials, reading fluently, and applying strategies are all interrelated components needed to increase reading comprehension. Difficulty in any of these components can halt the entire process of reading.

Teachers should remember several helpful hints when planning and implementing comprehension instruction (Neufeld, 2005). A few comprehension strategies should be taught well instead of teaching many ineffectively. Students need to understand that strategies are flexible and adaptable to their needs, preferences, and the text. Reading comprehension strategies assist students to become experts at comprehending difficult texts. Consistently practicing the strategies is essential for students. (Carbo, 2005). Text comprehension is the fundamental goal of reading instruction and strategies. Comprehension instruction sets the mood of a story, makes students aware of the text

structure, and monitors comprehension by asking questions related to drawing conclusions, making inferences, and predicting outcomes (Carbo).

Many students struggle to read content area textbooks. Social studies and science intermediate grade level textbooks over the course of a year were analyzed by Kragler, Walker, and Martin (2005) to determine if they encouraged comprehension instruction. The primary focus of the textbooks was on measuring or checking student understanding. Textbooks focused on content, main ideas, vocabulary words and assessment of knowledge by asking questions. Textbook questions, review questions, and test questions were included for the students or teacher to read. The content of the textbooks was the focus which meant that comprehension strategy instruction was insufficient. Teacher support for students included assessing prior knowledge before reading the text, building background knowledge for the text, describing vocabulary terms, posing questions of the students, and discussion guides. The teacher manuals concentrated on graphic organizers as their instructional approach to facilitate student comprehension. The graphic organizers typically were presented in the form of a semantic web, column notes, KWL charts, or anticipation guides. Teachers are required to obtain other sources of information to enhance meaningful reading in content areas. Activation of prior knowledge, students questioning instruction, visualization, summarization, and identifying critical information should be entrenched within classroom lessons. Previewing lessons, modeling the synthesis of materials, rethinking organizers to present, and reflecting on the positives and negatives of the text will make learning and comprehending expository text easier for students.

The six main comprehension strategies that researchers identified should be taught at all grade levels. These include predicting and prior knowledge use, answering and forming questions, thinking aloud about reading, using text structures and features, visualizing and creating visual representations, and summarizing. Predicting, questioning, clarifying, and summarizing can all be taught through the use of Reciprocal Teaching. Dramatic comprehension improvements will occur after about 20 sessions if Reciprocal Teaching is conducted effectively. Students must understand that they need to use the six comprehension strategies when reading independently. Strategy instruction in comprehension should describe the strategy in detail and when it will be useful. The strategy must be demonstrated through think alouds during realistic reading situations. Studies confirmed that students who discuss their comprehension strategies while reading score significantly higher on comprehension tests which reinforces why small-group discussion, students talking about reading, and think alouds during independent reading should be optimized. Collaboration during strategy usage should be encouraged with peers and school personnel. Teachers should provide guided individual and small group practice of comprehension strategies and ask students to explain their processing procedure for texts. Emphasizing and integrating the use of different strategies may be used in different situations. Strategy should be related to independent reading. Providing opportunities to use comprehension strategies by themselves during multiple curriculum areas and with a variety of different texts is essential for comprehension strategy instruction. Comprehension instruction has been proven to improve reading comprehension. Comprehension instruction will assist students to understand, remember, and discuss what they have learned during reading (Snowball, 2006).

Teachers desire and crave to improve reading comprehension for upper-elementary and secondary students. However, many teachers are unintentionally not helping their students to the highest degree possible. According to Ivey and Fisher (2005), there are five ineffective strategies which are being practiced in schools. The first ineffective strategy mentioned relates to letting students read independently. Students need, not only instruction, but the opportunity to “negotiate real texts for real purposes” (Ivey & Fisher, p. 10). Additionally, students should read about unfamiliar topics. A student’s disinterest in a topic is not an acceptable reason to not explore that topic. Teachers must understand each student's background, prior knowledge, interests, and what is motivational to ensure that students can make connections with the material covered. Ensuring the students are comprehending content and making connections is essential for real learning and understanding to occur. Furthermore, the idea that students must be encouraged to read difficult books is another false concept. For students to comprehend reading material, teachers must provide texts that make sense to them. Too much interrogation about materials that students have read will not benefit them. Comprehension is a proactive, recurrent process that integrates use of prior knowledge, thinking skills, and reflection. All of these must happen if the student is going to make sense of a text and truly understand the entire text. Lastly, buying a miracle computer program that does all the work will not be effective. Comprehension instruction must have a foundation that is based on assessment information and should be multi-faceted.

The NAEP indicated that many students can decode words and answer literal questions yet they cannot synthesize, analyze, integrate ideas, or execute other reading tasks that are central to reading (Grigg et al., 2003). Teachers who introduce and model

methods that promote interaction with the text assist with the development of reading comprehension. Questioning the Author (QtA) requires teachers to model ways to think and converse about text which facilitates gaining insight focused on reading strategies and boosts understanding of materials. Teachers who stress constructing meaning, expand text discussion, and check sources for accuracy have students who ask more questions and contribute more comments. Assessments included pre and post-test reading comprehension performance with the QtA method. Results demonstrated that the students' ability to monitor comprehension and their resolution of difficulties improved radically. Students tackle challenges in the text as they come across them, and they check comprehension as they read. Teachers initiate and sustain active reading through informal probes that push students to mull over meaning, question content, and cultivate their own ideas. As teachers introduce QtA, they ask and answer probe questions by thinking aloud to model how the text interacts with the readers. Teachers model how they stimulate background knowledge, assess the relevance of information, and verify whether they need to consult with other sources. Teachers must describe what they are doing because modeling and explanation is considered a better instructional approach than just modeling. Active engagement between the reader, text, and author enhances reading. Questioning the narrator makes the reader a part of the story, and questioning the writer allows thorough analysis. Utilizing multiple methods encourages active meaning construction, enhances reading comprehension, and improves curriculum content learning.

“Another strategy to improve reading comprehension is sticky notes” (Bedard, 2003). Sticky notes allow students to make notes while reading. While students are note-

taking on the sticky notes, their attention to the task increases, they are actively involved in their own learning, and it does enhance small group discussions. They also help the teacher guide students to become aware of their self-monitoring to improve reading comprehension. After modeling the process to a group of four to eight students, the teachers must model the self-monitoring strategy again, and remind the students where to place the sticky note. The students then need to try the process with support from the teacher. The sticky notes aid the students to examine their comprehension by making connections with visualizations during the reading of the passage. Students were expected to create a picture in their mind, predict what would happen, ask questions, reread, summarize, personalize the text, make connections, and ask others for help as they read the passage. Writing on the sticky notes as they read, permitted them to ascertain meaning and discuss strategies that they utilized in order to understand the text.

Literature circles, book clubs, cross-age conversations, whole-class discussions, think/pair/share, small-group discussion, and individual conferences are all classroom formats of conversation that are endorsed by Ketch (2005). Conversation engages the students to become reflective thinkers. The students search to understand the complex world through the comprehension connection of conversation. Students questioned, understood the viewpoint of others, identified connections, used mental imaging, agreed upon importance, inferred, retold, synthesized, and reached understanding of the passage through conversation. The use of conversation is a concrete strategy that supports comprehension for all involved.

Student self-assessment can enhance learning when students provide accurate, productive information about their own learning. Confusion has occurred in the education

field concerning the differences between self-assessment and self-evaluation. Self-assessment is formative because students assess unfinished work and find ways to improve their end product. Self-evaluation is summative and requires students to give themselves a grade. For self-assessment to be effective, students must understand the goal of self-assessment, comprehend their teacher's performance expectations, and have the support and time to make improvements. Andrade (2007) included research that self-assessment was typically seen as positive and self-evaluation as negative. Rubrics are one strategy to promote thoughtful self-assessment because they list criteria and describe varying levels of performance for several categories with a focus on a specific assignment. A quality written rubric can familiarize students with the concept of quality levels, inform learners for self- and peer assessment, and direct modifications so as to progress toward a better end product. Rubrics can begin as informative and end as evaluative. If they are written and designed correctly with the help of the students, they can be a helpful tool of learning. Self-assessment based on rubrics should involve three basic steps. Setting clear expectations for each task, conducting the self-assessment, and revising are all necessities. When students and teachers agree upon expectations, the students have a better understanding of quality work and they are empowered by being part of the learning and evaluation process. Teachers will need to refine the levels of quality for each criterion. Reviewing the rubric, discussing questions and comments, and making revisions will make the finalized rubric clear. The rubric is utilized for self-assessment when a rough draft of the project has been completed. The revision step is vital, and thoughtful revision will lead to improvements on their final products. Andrade reported that students stated that they could self-assess effectively, that they were more

likely to self-assess when teacher expectations were known, and their self-assessments normally led to revisions to improve their work. Self-assessment can be completed in all subject areas. If students create a product, then it can be assessed, which means it can ultimately be improved.

The fundamental elements of Response to Intervention within Individuals with Disabilities Education Act are explained by Lose (2007). Research proves that signs of literacy difficulties usually emerge after one year in school which means that intensive interventions must be provided for that child at the earliest signs of difficulty.

Appropriate assessments must explore a child's knowledge and literacy experiences.

They should consist of oral language skills which include knowledge of letters, words, sound-letter correspondences, and print concepts such as text reading and writing.

Accelerative learning and continual progress is essential. One-to-one tutoring by qualified tutors in grades one to three is the best practice for most at-risk learners. Student improvement should be supervised and examined by a teacher who is a skilled diagnostician. Best practice would indicate that the same teacher designs and delivers the Response to Intervention strategies and lessons for each child. Assessment information and teacher observation assist the teacher in refining teaching decisions. Yearly progress reports guarantee that struggling readers will receive accelerated interventions that ensure progress regardless of their economic status, race, or ethnicity. Annual reports also assist with scrutinizing the quality of interventions. All members of the school team must understand the variety of students' learning abilities. Collaboration, consistency, and shared accountability for students ensure that students' needs are identified swiftly and that strategies are devised to meet each student's needs. Interventions must be intensive

and customized specifically for each child. Students should make daily progress and learn how to boost their literacy performance with the support from an expert teacher. A knowledgeable teacher, not a program, will lead to literacy growth.

Armstrong (2004) explained how reading strategies can enable reading materials to come alive for every student. Teachers can assist special learners by instructing students to close their eyes and visualize the reading material. The comprehension of “picture-smart children” will improve with this small modification (Armstrong, p. 79). “Body-smart” or kinesthetic learners profit from acting out reading material. Logical learners can approach reading comprehension as hypothesis testing and problem solving. Musical learners benefit from inclusion of music, singing, and chanting. By connecting text to emotions, memories, and personal events, teachers are tapping into intrapersonal intelligence. Interpersonal intelligence within reading instruction should emphasize becoming critical readers, thinking about the social meaning of the text, and examining the perspective or point of view of the character(s)/text. “Nature-smart” or naturalist learners benefit from adding nature related words, having class outdoors or away from the formal classroom, and books with nature themes.

Another strategy was described by Salinger (2005) involving teacher promotion of reading comprehension skills through introducing and modeling active interaction with the text. QtA requires teachers to model thinking and talking about text. Discussion can facilitate insight into students’ own reading strategies and augment their understanding of content. The QtA approach is a research-based model that strengthens students’ comprehension abilities. This approach encourages students to construct meaning, expand discussions of text, and verify knowledge understanding. The benefits of QtA

show that students began to initiate more questions, make connections with the text, and monitor their own comprehension. Teachers initiate and maintain engagement by encouraging students to contemplate meaning, question content, and even develop their own ideas and solutions. Questions or queries can be general or specific; they may address vocabulary or choices of the authors. The aim of the queries is to help students dig deeper by thinking aloud about text. This requires teachers to ask and answers questions to model interaction with the text. Content-area teachers can model how they activate background knowledge, evaluate relevant information, and determine the source's validity. Teachers must explain what they are doing to ensure meaning is constructed by interactions between the reader, text, and author. QtA transports the reader into the story which enhances in-depth analysis.

Stahl (2004) identified four categories of comprehension strategy instruction research. These categories included research validated strategy instruction that is broadly practiced, research validated strategy instruction that is less broadly practiced, unvalidated strategy instruction that is broadly practiced, and unvalidated strategy instruction that is not broadly practiced yet might have potential. Guided/instructed retelling, story maps, teacher-generated questions, question-answer relationships, and reciprocal teaching have a solid research base and are broadly used by teachers. Activating prior knowledge, talking about the text, directed reading with a thinking activity, literature webbing, visual imagery training, utilizing videos, and transactional strategy instruction all have a solid research base but have limited use by teachers. Main idea selection, Know-Want to Know-Learned Chart, and picture walks are broadly utilized by teachers, but they lack a solid research base. Student-generated questions and

summarization strategy instruction are not validated by research and are not broadly practiced yet might have potential for the future after additional research. The beneficial strategy that teaches students the use of signal words to create summaries for sentences using 15 spaces is the Generating Interactions between Schemata and Text method. Teaching summarizing improves overall comprehension. As teachers talk about text during read alouds, they can activate background knowledge and make connections to enhance independent reading comprehension. Videos can boost incomplete or partial background knowledge. Utilizing multiple and extensive strategies that focus on previously established classroom literacy programs, which include making meaning and recalling the text, was proven to assist students. Having children answer higher level thinking questions enables students to use text information and personal experience when responding to questions. Retelling that includes five-finger retelling, a story map, or a graphic organizer will benefit students. Reciprocal Teaching and Transactional Strategy Instruction are proven research methods that require comprehension strategy instruction before implementation.

Hardiman (2001) believed that the best practices for teaching children are served when the Five Dimensions for Learning are combined with the latest brain research. Dimension one emphasizes a positive attitude. These best practices include a classroom environment that is challenging and supportive, that reduces stress and eliminates embarrassment. These classrooms should teach peer acceptance and social behaviors explicitly through instructional materials. Connecting emotions and learning drama, humor, movement, and the arts will ensure long term results. The second dimension is acquiring and integrating knowledge. New material should be connected to what the

student already knows which leads to incorporating it into new situations. The more times students complete tasks, the more connections they make. Information not only must be acquired, but it must also be retrieved. Hardiman reported that brain mapping technology reveals that different learning styles impact the retrieval process. Best practices emphasize integrating new information with prior knowledge and previously learned content. Repeating learning tasks, using mnemonics, providing manipulatives, and integrating movement, music, and art can enhance learning. Extending and refining knowledge is the third dimension. Thinking skills that focus on analysis require the brain to utilize multiple manners of retrieval and integration. By comparing, classifying, and analyzing, students can use prior knowledge to learn new concepts. The fourth dimension of learning is using knowledge in meaningful ways. When students participate in real-life problem solving, they utilize higher-order thinking skills. Hands-on tasks that involve investigation, analysis, and problem solving promote learning in a realistic manner. Providing multiple ways to demonstrate learning is beneficial due to different learning styles. The final dimension is habits of the mind. These include monitoring learning, goal setting, self-evaluation, self-regulation, and applying learning styles to maximize learning situations. Best practice strategies should emphasize reflection and discussions that lead to reflection.

Fluency and Reading Comprehension

Therrien (2004) conducted a meta-analysis to determine the indispensable instructional components of repeated reading and how reading fluency and comprehension are affected by repeated reading. The author located 33 studies that complied with his six-step process from the Educational Resources Information Center

and Psychological Information databases. Only 18 articles provided the data needed to calculate gain effect in standard mean form. Therrien's literature review indicated that repeated reading can effectively improve students' ability to fluently read and understand a specific passage. Repeated reading also improves the students' overall reading fluency and comprehension ability. Additionally, the review differentiates the necessary academic components that should be included in a repeated reading program. The goal of the intervention determines the essential components. Students should be instructed to focus on speed and comprehension while the passage being read aloud three to four times. Using repeated reading to improve students' overall reading fluency and comprehension means that students read and repeat a passage aloud to an adult who provides corrective feedback on errors until the performance criteria is met.

Two reading interventions that focused on the decoding, fluency, and reading comprehension of elementary and middle school students with reading disabilities were conducted. The goal was to determine the educational outcomes on the reading skills of older children with reading disabilities and the degree of explicitness that will lead to higher gains in comprehension. Eleven tutors were trained for 14 hours on the treatment conditions to be implemented and assigned to the treatment conditions at random. Subjects received one-to-one tutoring for one hour a day, four days per week for five weeks. The two treatment conditions varied by the degree of explicitness for the reading comprehension strategies presented. Tutors began each session by using a Curriculum Based Measurement probe and then spent about 15 minutes providing the phonological awareness/analysis training. Students were instructed in multiple decoding strategies for both conditions. For both treatment conditions, 35 minutes of each session included

strategy instruction for comprehension and decoding that utilized high-interest/low-readability expository text at or near each subject's instructional reading level. Reading fluency consisted of passage rereading for the reading comprehension component. Tutors read the passage aloud fluently with inflection while the subject "shadow read" the passage (Manset-Williamson & Nelson, 2005). This means that the subject also read out loud trying to imitate the tutor at a slightly slower rate. The subject could also read the passage alone using fluency and inflection. The two conditions were Phonemic Awareness/Analysis, Decoding, and Fluency Instruction plus Guided Reading and Phonemic Awareness/Analysis, Decoding, and Fluency plus Explicit Comprehension. The only difference between the two conditions was that one used Guided Reading and the other used Explicit Comprehension. Mean and SD for the pretest and post-test for all dependent variables were considered during the analysis of data to determine effect size. The results implied that the more explicit comprehension strategy instruction used, the higher the likelihood that upper elementary and middle school children with reading difficulties will make significant improvement in reading comprehension.

Repeated reading and question generation are proven and validated instructional strategies that improve fluency and text comprehension for struggling students. Therrien, Gormley, and Kubina (2006) created Read-Adapt and Answer-Comprehend which combined both strategies into seven instructional steps. First, students are prompted to read quickly and pay attention to what they are reading. Question-generation prompts are then read by the student. Students reread passages until the performance criterion is met by correcting mistakes made during reading. Praise is provided to students for improvements in fluency and accuracy. Students adapt and answer questions on cue cards

by looking for the answer in the passage. Finally, teachers adjust the reading materials for the next session by increasing or decreasing difficulty of materials. The RAAC strategy is easy to implement, requires minimal instructional time, and increases complicated inference generation. Students with and without learning disabilities can profit from combining repeated reading and question generation instruction into a cohesive intervention.

Fluency, Reading Comprehension, and Students Who Struggle with Reading

The National Reading Panel (2000) highlighted seven categories of text comprehension instruction which had solid scientific bases for instruction including: (a) comprehension monitoring, (b) cooperative learning, (c) use of graphic organizers, (d) question answering, (e) question generation, (f) story structure, and (g) summarization (p. 15).

Gersten and Baker (1999) suggested that students with Learning Disabilities (LD) must be taught self-monitoring techniques such as asking questions or summarizing text in their own words. While reading a narrative text, they should make predictions, which helps reading comprehension. Reflection on reading progress is an essential component of reading comprehension. Students taught multiple strategies normally experience more improvements in comprehension than students taught a single comprehension skill. Students must learn strategies to repair comprehension when they do not understand the text. Repeated reading enables students to recall content information, and it can be easily implemented in a classroom setting. Intense interventions that utilize multiple self-monitoring strategies may be the most efficient method. Students with LD find it a challenge to differentiate between pertinent and irrelevant information. A solution to this

challenge would be setting a goal to focus attention while reading. Learning the structures of stories helps students with LD improve their comprehension. Expository writing is even more difficult for students with LD because the organizational or text structures are more complex to identify. Peer-assisted learning strategies improve reading comprehension and oral reading skills through summarizing, identifying important information, and predicting. For internalization of strategies to occur, the students need an abundant amount of practice. Continuous discussion about the meaning of the text should involve the teacher modeling many strategies. Using multiple strategies shows great potential as a reading comprehension method. Generalization skills are essential so that they can be transferred to other content. Internalizing the strategies is vital so that reading comprehension improvements can continue. Reading comprehension research aims to develop intervention methods that impact standardized measures which advocates for more generalization of comprehension interventions.

Stanberry and Swanson (2003) summarized the work of a group of researchers led by H. Lee Swanson, Ph.D. who synthesized the results of 92 scientifically-based research studies between 1996 and 1998. Swanson identified teaching instructional methods that proved most effective for increasing word recognition and reading comprehension skills for students who struggle. Research found that struggling students experienced more skill improvement when they received small groups reading instruction than if they had individual instruction. Good reading intervention programs should include daily reviews, instructional objectives provided for students, new material presented by teachers, guided practice, independent practice, and formative evaluations. The most effective method reported in the research to increase reading comprehension for students with learning

difficulties seems to be a blending of direct instruction and strategy instruction. Strategy instruction requires identification of critical passages, paragraphs, or pages to determine the main idea. The instruction components found in effective reading comprehension should include questioning, controlling the process demand difficulty, elaboration, modeling, group instruction, and strategy cues.

Valencia and Riddle Buly (2004) determined three statistically discrete and instructionally well-known categories after examining 108 students in the areas of word identification, meaning, and fluency. Six distinctive profiles were then identified. They include automatic word callers, struggling word callers, word stumblers, slow comprehenders, slow word callers, and disabled readers. Automatic word callers decode quickly and accurately; however, they are unsuccessful at reading for meaning. Explicit comprehension instruction with teacher modeling, think-alouds, using a variety of types of material, building background knowledge, developing vocabulary understanding, specific explanation of figurative, and genre structure instruction will help automatic word callers. Struggling word callers battle with understanding meaning and identifying words. They would benefit from read-alouds, need experience with independent reading at their level, small-group instruction, activities that build academic language, emphasis on word meanings, instruction focused on self-monitoring, fix-up strategies training to increase comprehension, and learning to read for meaning. Decoding instruction, building background knowledge, grade level content, and vocabulary exposure will also assist struggling word callers. The word stumbler has strength in comprehension. They struggle with word identification but are more successful at understanding meaning. Self-monitoring strategies, language background knowledge, systematic word identification

instruction, assisted reading, and repeated reading utilizing materials at the correct instructional level will all promote success for word stumblers. Slow comprehenders are strong decoders with word knowledge and the understanding that reading should make sense. They attend to the meaning of the passage. Fluency is a challenge that can be supported through guided oral reading, partner reading, and Readers Theater. Slow word callers have well developed decoding skills. They have weaknesses in meaning and fluency. Attention to vocabulary building, independent reading, teacher read-alouds, and explicit word learning instruction all help slow word callers. Disabled readers have difficulty in word identification, meaning, and fluency. They are aided by intensive, systematic word identification strategies and explicit basic word identification instruction. Informal reading inventories, oral reading records, and individualized assessments provide helpful information to determine appropriate instruction for all students. Detailed classroom assessments occur only when teachers have a deep understanding of the reading process and instructional options. Teachers must think diagnostically and base instructions on current information that is constantly collected and analyzed. This requires multi-level small group instruction that is flexible and based on classroom evidence. Good teaching provides struggling students what they really need despite today's emphasis on testing scores. Students, their current skills, and the end goal for each student should be the ultimate focus and driving force for instruction.

Anderson (2006), a special education teacher, designed a program to teach reading comprehension strategies to two students who participated in inclusive classrooms. Her goal was to teach strategies in small group settings that would aid reading comprehension with the hope that the strategies would transfer to the general

education classroom. The reciprocal teaching strategy focused on clarifying unknown words, making predictions, formulating questions about the text, and summarizing what had been read. Students were provided with reading comprehension scripts to assist them in structuring comprehension and constructing meaning from text. The small group sessions had no impact on comprehension of the two subjects, but Anderson concluded that reading comprehension strategy instruction intertwined into the regular education classroom will benefit all students. Direct instruction of reading comprehension strategies was taught in a special education setting. Providing the instruction in the regular education classroom might have encouraged transfer of the strategies to occur. The author suggested that using expository text to convey content material would have been appropriate time spent in reciprocal teaching in a small group. Modeling quick sketches, breaking down dense and complex text, discussing questions that lead to connections, and thinking aloud would have benefited the students with learning disabilities as well as the regular education student. Anderson concluded that reading instruction in an inclusive setting is more effective than teaching the strategies in a small group setting outside of the regular education setting due to transfer of knowledge. Rethinking the traditional methods of teaching will allow team teaching to assist all students to enhance their comprehension of text.

Most students with learning disabilities need effective strategies in reading comprehension to facilitate and remember content reading materials learned. The Preview, Question, Read, Reflect, Recite, and Review strategy (Logsdon, 2007) improves recall of facts by as much as 70%. The Preview step requires students to look through the passage, read headings chapter and sections, read the first and last paragraph in each

section, examine the illustrations, read the captions under the pictures, and inspect charts, graphs, or maps. During the Question step the student ponders the information learned in the Preview, asks student generated questions, makes connections, and predicts main points and potential topics to be learned. The Read step includes reading the passage and making brief notes or highlighting important points. Reflection consists of making connections to previously learned topics, identifying new information, determining unexpected information that was covered, and deciding if any information was a surprise. Students recite materials with someone else and write down the main points or brief notes. Summarizing materials by using the student's own words, describing material verbally to someone else, reciting notes, or compiling a graphic organizer are all strategies which will connect knowledge to other topics. Reviewing gives details about the main points while the student considers whether his questions were answered and the teacher determines whether the student truly understand the writer's ideas and information. Utilizing the Preview, Question, Read, Reflect, Recite, and Review strategy can facilitate better grades and improved achievement in all content areas.

Dyslexia or specific reading disability (Shaywitz & Shaywitz, 2004) represents one of the most prominent problems affecting children and adults in the United States. Between 5% and 17% of school-aged children are estimated to have dyslexia and up to 40% of school-aged children are not reading with proficiency. The LD with the most research and frequency is dyslexia which affects 80% of all individuals identified as LD. Dyslexia is a chronic and persistent genetic trait that influences the proper functioning of the brain systems during reading. Individuals with reading disabilities compensate by using other brain systems. Early intervention of phonological reading mediation improves

accuracy and fluency of reading. Brain systems responsible for reading are also developed when early intervention is employed. Difficulties with oral reading, slow reading, and spelling are the most well-known symptoms. Systematic and explicit teaching of phonemic awareness and phonics is essential, as is repeated oral reading with feedback and guidance. Mastery of these fundamental and foundational skills is vital and can lead to reading fluency. Early reading intervention must be presented with intensity by highly qualified teachers who focus on quality instruction for a sufficient duration to allow readers to close the reading gap. Experienced and knowledgeable teachers must ensure that students are actively engaged in learning. Providing focused instruction for each individual student is essential when teaching strategies in comprehension. To guarantee quality reading instruction, the teachers must rely on science and data to make academic decisions rather than using the gut feelings and assumptions of the past decade in the field of education.

Students with learning disabilities demonstrate difficulties with fluency related to the areas of ability to read sight words, decode words, and read phrases and sentences without human interventions in a quick manner. The purpose of Chard, Vaughn, and Tyler (2002) was to review research on reading fluency interventions for students with LD from 24 studies. The findings included interventions using repeated reading with and without a model, sustained reading, the number of repetitions, text difficulty, and specific improvement criteria. The research results even differentiated between adult models, proficient peer models, and audiotape or computer models. Oral reading interventions were superior to silent reading, and all readers benefit from repeated guided reading. When they participated in repeated reading, especially with a model, students with

learning disabilities demonstrated increases in reading rate, accuracy, and comprehension. Tape and computer modeling is more valuable than having no model, although teacher modeling is more successful than tape or computer modeling. Cross-age models showed better results as compared to cooperative partners or peer tutors. When students gradually moved to more complex text, their previous performance appeared to boost their overall performance. Allowing students to reread text multiple times to a variety of individuals as the text increased in difficulty with corrective feedback is the best strategy to improve fluency.

Chunking words and text for struggling readers is another method that enhances fluency and comprehension. Repeated reading and collaborative strategic reading are both associated with improvement in reading and comprehension. Chard et al. (2002) and the National Reading Panel (2003) concluded that rereading text and oral repeated reading are the top documented methods to increase fluency. Repeated reading does improve the fluency for students with learning disabilities especially when fluency is built into daily reading instruction. Students with learning disabilities will profit from daily fluency and comprehension instruction that focus on rate and accuracy of reading. Oral repeated reading is preferred to silent reading due to the benefits of active participation and focus related to oral repeated reading. Fluently modeled repeated reading with corrective feedback enhances fluency by decreasing the errors during reading. Providing an intentional instruction, predetermined criteria, and adjusted difficulty levels appears to develop fluency more quickly. Focusing the student's attention on improving fluency and understanding text meaning with fluent models

develops while utilizing repeated reading enhances fluency and comprehension for students with learning difficulties.

The participants in the study conducted by Corcoran & Davis (2005) were 12 students, 3 females and 9 males, in a self-contained combination Learning Disabled and Emotionally Handicapped classroom in a public school in Central Florida. Direction, modeling, and independent practice by students as they repeat the plays, speeches, poems, or other text are utilized during readers' theater. Students prepare and practice until they are able to execute the selected material fluently and with expression for an audience. This allowed students to determine when they deemed themselves ready to present which leads to a rise in student self-confidence, oral fluency, and motivation to read out loud in front of others. The students were placed into three groups of four based on their instructional reading levels. The rotation schedule included independent reading work, reading groups lead by a teacher, and readers' theater group. Each play was practiced for six 10 to 30 minute sessions before presenting each readers' theater final performance. During this eight-week period, each of the groups performed three different plays. The first implementation week, the researcher read aloud, comparing and contrasting fluent and non-fluent reading. The groups discussed the objective of fluency and reading expression through readers' theater and determined group norms. The first day of the week, each student read the script silently and then aloud with the group. On the second day, the researcher modeled inflection and intonation while reading selected parts of the script, and then the students practiced reading the script aloud three times. While reading, they focused on projecting their voices, chunking words into phrases, and adding emotion to the script. During the third day, the researcher would read aloud the

script with the group three times before the students would practice independently. The researcher then pulled at least two students per session out to echo read their parts. The fourth day, the other students who had not previously been given a chance completed echo reading. The researcher provided feedback to the whole group on their readings. The days until the performance day required students to prepare and rehearse the scripts as the researcher provided direction, feedback, and modeling. As fluency increased, the students began to manipulate puppets. Copies of the scripts were sent home so students could practice oral reading with a family member. Individual gains of words per minute ranged from 3 to 41 between the pretest and the posttest. An examination of the fluency scores confirmed an increase in the number of words correctly read per minute in fluency tests. The outcomes from this study reveal that readers' theater programs had a positive influence on reading attitudes and the confidence of the second and third grade students with special needs (Corcoran & Davis).

Friedland and Truesdell (2006) deemed that cross-age book buddy programs that included students with LD who read with and mentored younger children were an effective method for nurturing self-efficacy. They also stated that book buddy programs should be one element of language arts curricula for all students because it was powerful in raising self-efficacy for students with LD. However, it became obvious that student mentors required additional modeling focusing on reading books aloud and discussing literature with younger children after the first year of the program. The authors met with the self-contained classes of sixth and seventh grade students for 45 minutes a week. Buddy reading and the students' responsibilities as the older buddy was discussed. At the end of the three year book buddy intervention, all of the mentors described enjoying

reading more than before they participated in the book buddy program. The consensus of the mentors' comments was that they took pleasure in reading to and with the second grade students. The comments of the mentors reveal the awareness with reference to their improvement in fluency. The students reported on their interview questionnaire that they modeled how to read and the importance of reading. The authors concluded that the increases in self-efficacy might be a factor to their persistence and commitment to reading with their book buddies. When asked if book buddies helped the students with LD to become better readers, the interviews suggest that comprehension was fostered by becoming a more fluent reader. Mrs. Bates, the special education teacher, reported "more positive attitudes" toward reading and that students "enjoyed reading for pleasure" after participating in the book buddy program (Friedland & Truesdell, p. 39).

Many strategies have been utilized to best meet the needs of struggling readers with and without disabilities. Vaughn and Klingner (1999) describe collaborative strategic reading as a method of enhancing the comprehension skills of students with learning disabilities. The four strategies include Preview, Click and Clunk, Get the Gist, and Wrap-Up. Each reading comprehension strategy is taught to the whole class by the classroom teacher or the special education teacher. The strategy is described, modeled, implementation strategies role-played with the class, and calls students to demonstrate the implementation of the strategy. Each strategy is applied several times a week with expository text to ensure all students understand and can utilize the strategy with confidence. The strategies are taught in isolation, and eventually they are integrated after two of the four strategies are acquired. One strategy is previewing and predicting occurs prior to reading. The goals of the Preview strategy are to generate interest and enthusiasm

for reading material, promote background knowledge and vocabulary connections, and cultivate hypotheses and predictions about what they will learn are. Another strategy is Click and Clunk, which describes checking for understanding and knowledge of vocabulary. Another strategy that also occurs during reading is Get the Gist, which requires students to rephrase the key ideas in 10 words or less. Click and Clunk teaches students to examine what they are reading as well as information they already know about, and information that causes them trouble. Wrap-Up is self-questioning and checking for passage understanding happens after reading. The goal of Wrap-Up is for students to review what they have read to aid in understanding and remembering learned information. Wrap-Up can also serve as a strategy for studying by learning to produce questions about materials and information read. Eventually students will create questions with a range of difficulty and formulate correct answers to these questions. Collaborative grouping and learning logs are essential parts of this strategy. Teachers who utilize CSR appreciate a reading comprehension and study skills strategy that facilitates expository text learning. Observing students become skilled at how to learn and think when they read is the best outcome reported by teachers.

Reluctant Readers

Blasingame (2008) affirmed, “Students need to be engaged in frequent, challenging, and meaningful thinking, discussion, and writing about their reading” (p. 58). Reading authorities have endorsed the concept that readers are not passive participants; they are interacting with a text by actively contemplating it, judging it in the context of their own personal experiences, and attempting to create meaning of the text. Additionally, readers are encouraged to utilize the text to make sense of their own lives.

The ultimate goal of teachers is that their students develop their own opinions related to the meaning of the text and determine what is important about the text.

In contrast, Smith and Wilhelm (2002) felt that reluctant readers did yearn to converse about what they read, and they were frustrated when not given an opportunity to discuss the material. In their case studies of 20 reluctant, male teen readers, Smith and Wilhelm testified that the participants frequently and constantly had complaints that they were not allowed to cover the material in the depth that they wished. Instead, the readers complained that the topic seemed to continually be changed without completely covering the topic. The boys desired to spend enough time on every topic to believe that they had achieved a level of competency (Smith & Wilhelm, p. 107). Sharing opinions and impressions about a text was not distasteful to them. In fact, they desired to talk about their opinions focused on the content of their reading. Books that readers can connect with, books which have controversy, and unique characters with which the reader can identify are paramount to spark the interest of young reluctant readers. Making connections between the text and real life shows that young readers are actually utilizing the text to form new opinions and ideas about relationships that are found in their world.

Rawles (2008) asserted that reluctant readers learn with their ears more easily than they do with their eyes. Furthermore, Rawles states, “The physical act of reading is stressful for them” (p. 39). A quality story told in a simple and compelling manner is the greatest way to catch the reader’s attention. Books that provide insight and information that cause the reader to care about the characters or which bring the reader to a fulfilling ending make the reading activity worth the effort.

Scales (2008) suggested a multitude of ways to win over reluctant readers. The initial and most important mode is to present reading choices. Teachers are obliged to avoid being judgmental of the reading selections of students as well as making certain that selections are centered on the students' outside interests. Strategies for accomplishing this include using shorter, high-interest books and connecting novels to a variety of texts including newspapers, magazines, and nonfiction. Students are frequently drawn into a book when the teacher reads aloud the first chapter of a novel, but students should be coached to stop reading a book if they lack interest in the book by the end of the second chapter. As with all readers, struggling readers should be provided with a curriculum that incorporates a variety of genres. All students should assist with the development of a reading list for the class. As a teacher, read as many of the books that students recommend as possible and discuss the suggested books with the students.

Audiobooks

Audiobooks, accompanied with a copy of the book, are one component of the READ 180 reading program (Scholastic, 2005b). Neuman (2007) noted that audiobooks are valuable tools because students can follow along in the text as the narrator reads. Moreover, this reading tool enhances each student's multi-sensory experience. The narrator models fluency and expression to the text. As students listen to the material, the compelling sound effects and music can make reading more inspiring and entertaining for students. Utilizing audiobooks, improves awareness of narrative structure and language. Students are also able to gain a sense of the abounding and diverse ways in which language communicates meaning through learning new vocabulary words.

Johnson (2003) testified, “Audiobooks have traditionally been used in schools by teachers of second-language learners, learning-disabled or -impaired students, and struggling readers or nonreaders” (para. 4). Furthermore, audiobooks have proven successful in providing a way for these students to access literature and enjoy books. Typically audiobooks are not utilized with students who are considered to be average, avid, or gifted readers. Audiobooks receive mixed review from professionals. Some teachers, parents, students, and family members are enthusiastic about their merits, while others don’t consider it reading. The debate can be resolved by defining the true meaning of reading. Johnson stated,

If reading is understanding the content of the story or the theme, then audiobooks certainly succeed. No one would argue the importance of decoding in teaching children to read. But, understanding the message, thinking critically about the content, using imagination, and making connections is at the heart of what it means to be a reader and why kids learn to love books. (para. 3)

The benefits of audiobooks can reach all students. Varley (2002) wrote, “Uncertain whether audiobooks belong to the respectable world of books or the more dubious world of entertainment, elementary and high-school teachers have often cast a fishy eye at them, and many have opted for the safe course of avoidance” (p.252). Audiobooks provide access to books above their reading level, model quality interpretive reading, foster critical listening, showcase the humor in books, allow students to read new genres not previously consider, and allows students to encounters new vocabulary and unusual names or places (Johnson, 2003).

The majority of students will find listening to well-narrated, quality literature to be a transformative experience. Varley (2002) stated, “If one thing has struck me about the way people describe listening to audiobooks, it is the reported intensity of their absorption and the emotional grip of the experience. ‘They go right to your soul,’ says one listener” (p. 253). However, audiobooks are not located in classrooms due to limited availability. Often, public libraries have a quantity of audiobooks, but most school libraries and classrooms have a limited amount of audiobooks because they tend to be expensive. The cost of CD players, headphones, and batteries have made it impossible for most schools to locate the funds to purchase these valuable teaching tools.

Many online databases were used to examine the application and outcomes of reading interventions to address communication art problems and to identify promising practices as this dissertation was written. To locate peer-reviewed studies and background research, electronic databases such as Wilson Web, Educational Resources Information Center, and Psychological Information were employed.

CHAPTER 3 - Methodology

Introduction

The literature review is comprised of data about fluency and comprehension of students with reading difficulties. The primary focus of this review was READ 180, since the program's premise is that READ 180 positively impacts both fluency and comprehension. Other strategies will be briefly discussed during regular communication arts instruction because it is impossible to isolate any other instruction while the study occurred. The six main comprehension strategies include predicting and prior knowledge use, answering and forming questions, think alouds about reading, using text structures and features, visualizing and creating visual representations, and summarizing (National Reading Panel, 2003). Many of these strategies are located in the READ 180 program and other instructional programs. Without these strategies in any educational setting, learning will likely cease.

The creators of Scholastic READ 180 (Scholastic, 2005g) recommended that the first year of implementation must consist of specific key components. Each class should be scheduled for 90 minutes during each of the five school days. The time is divided into 20 minutes of whole-group instruction at the beginning, three 20 minute rotations, and 10 minutes of whole-group instruction at the end of the period. The small group instruction blocks make available an opportunity for differentiation by the reading specialist. The groups of students should range from five to seven students. All of the required hardware, software, and READ 180 materials must be supplied to ensure correct instruction and the best possible growth for the struggling students. Additionally, the educators implementing the program must have adequate training and professional development.

The teacher must utilize the entire teaching system to assist with evaluation and accurate modifications for the students enrolled in the READ 180 program. Repeated and constant use of READ 180 guides and materials will allow the teacher to better understand how to assist each child. The READ 180 Teaching System consists of Professional Development materials, rBook Teacher's Edition, rBook Anchor Videos, Resources for Differentiated Instruction, Assessment materials, and READ 180 Software (Scholastic, 2005g, p. 18). Testing requires administration of the SRI at the beginning, midpoint, and end of each school year. Students must participate in READ 180 for at least one year for improvements to be observed. The READ 180 program was employed in this research setting with all of the mentioned factors with the exception of daily 90-minute blocks five days per week. READ 180 was administered each day for a 75-minute block of instructional time.

One of the groups of students worked independently at a computer using READ 180 software, which differentiates instruction depending of the student's correct and incorrect responses. Student frustration and discouragement is diminished because instruction is aligned to the each student's current level of functioning. Positive feedback allows students to amplify fluency and literacy skills (National Reading Panel, 2000). The Vanderbilt researchers created software activities with the aim of mastery through practice and review of appropriate skills based on each student's strengths and needs (Scholastic, 2005, p.7). Each workshop included an rBook Anchor Video. "The video engages students, builds background, and helps students form mental models for their reading. The video then becomes the anchor for all reading instruction" (Scholastic,

2005h, p. 7). The teacher then utilized the assessment information to direct and modify instruction during the small group rotations.

Additionally, the students in the second group are provided individualized instruction and modeling by an additional adult who monitors progress and redirects their learning as needed. However, this additional adult is not an element that is required of the READ 180 program. In the third small group area, students participated in direct reading to build comprehension skills. READ 180 paperback and audiobooks were modeled, and feedback was provided by an adult or through the audiobooks. The audiobooks included instructors who stopped occasionally to converse about a reading concept or vocabulary word. Frey and Fisher (2008) promoted the use of nontraditional layouts which include graphic novels, audiobooks, and comic books as educational devices for activating comprehension because they appeal to struggling students. Reducing the quantity of written text allows many struggling students to develop more sophisticated comprehension skills. Graphic novels, audiobooks, television clips, computer movies clips, and role-playing elements are all components of the READ 180 program.

Research Design

The case study utilized quantitative research methodology. According to Merriam (1998), quantitative research uses numbers, facts, and data to make correlations. Statistical analysis of the mean, mode, median, range, Standard Deviation (SD), correlations, and T-test (reports significance) can be easily gleaned by means of quantitative research.

This case study was completed within an elementary educational setting. Data was collected while completing graduate degree requirements in education with an

emphasis on Instructional Leadership and Policy Analysis. Information gathered focused on fluency strategies and interventions, reading comprehension strategies and interventions, and strategies and interventions that have been successful when working with students with reading problems. The information gathering purpose was to expand insight and increase information related to strategies and interventions that will positively impact fluency and reading comprehension for struggling students.

STAR Reading Test

The STAR Reading test is a broadly employed test as a means of measuring reading achievement. Each test consists of 25-items administered by computer. It is an adaptive test that measures reading achievement (Renaissance Learning, 2000).

Administration of the STAR Reading Test can be completed in a small-group setting or an entire class can have the test administered at the same time. It provides swift approximations of students' reading levels within an administration time of about 20 minutes. The norms and standardization for the STAR Reading test makes use of a nationally representative sample of 30,000 students from 269 schools. Norming data was obtained to review norm-referenced, percentile rank, and NCE scores. STAR Reading consists of two-stages of testing which measures reading levels more accurately. An example can be seen Appendix A. The pretest scores on the STAR Reading test calculated the baseline reading achievement for the study participants. The posttest scores on the STAR Reading test measured reading achievement at the end of the instructional school year, which was the dependent variable. STAR Reading reports illustrate through a variety of reports where each student needs assistance. This allows the educator to structure instruction that provides for differentiated instruction. The reports include a

Diagnostic Report, Growth Report, and Progress Monitoring Report. The Diagnostic Report provides detailed suggests to advance and further optimal reading growth. An example of this report provided by STAR Reading can be found in Appendix A. The Growth Report supplies a graphic representation of the whole class's reading progress. An example of the pretest and post-test scores for each student provided by STAR Reading can be found in Appendix B. The Progress Monitoring Report explains the progress of a class throughout the school year by evaluating average Scaled Scores with national Norms.

Scholastic Reading Inventory (SRI)

The SRI is an adaptive reading assessment taken on the computer. The number of questions for each student varies and it can be administered to students in Grades K through 12. The SRI is based on the Lexile Framework for Reading with a design that is measured by norm-referenced and criterion-referenced reading tests (Scholastic, 2005e, p. 21). The test provides percentile rank, NCE, and other norm-referenced scores. The SRI was based on a state sample of 512,224 participants. Student responses establish the level of questions, and the difficulty level is altered by the computer until a student is matched to a Lexile level. The Lexile scale for texts ranges from 100L for beginning or struggling readers to 1500L for advanced or avid readers (Scholastic, 2005e, p. 21).

Data Collection

Reading pretests to assess reading achievement of all students in the school setting were administered in large groups on a computer prior to student assignment in the treatment group or the comparison group. Administrators used the results from the reading pretest and teacher recommendation to assign students to READ 180 or the

traditional reading program. The STAR Reading test was used for pretest and posttest measures in the school years 2007-2008 and 2008-2009 for the comparison and treatment groups. The SRI was administered to all participants in the school years 2007-2008 and 2008-2009 in the fall and the spring of the academic year.

Data Analysis

Descriptive statistical analyses were performed to determine frequency, mean, and SD through the use of computer software. Runyon and Haber (2004) explained, “An important benefit of the T-score transformation is that it allows us to compare people from different age groups” (p. 128). T-tests were employed to find the mean differences between the pretests and posttests scores. Statistical significance was demonstrated by probability values less than or equal to .05. T-tests were performed to determine if a significant difference existed between the reading achievement scores of students who take part in READ 180 as compared to students participating in a traditional reading program serving as a control group. The pretest examined the preliminary differences between the treatment and comparison groups of students. The posttest explored the differences between the treatment and comparison groups of students at the end of the school year. T-tests comparing the difference between pre- and post-tests for the treatment and control were conducted. Additionally, T-test were run to compare the males and female in the treatment group.

Site of the Study

The site of this case study took place in a community in central Missouri. The school district serves several rural communities. Currently approximately 5058 students are attending eleven school sites from pre-K through 12th grade. About 1,248 high school

students, 1,184 middle school students, and 2,626 elementary students are enrolled in the district. The school district includes six elementary buildings, one middle school building, and one high school building. The elementary school was the setting for implementation during the fall and spring of 2007-2008 and 2008-2009 school years. The building includes third grade through sixth grade with approximately 1,150 students enrolled during a regular school year.

Seventy-five minutes per day were spent implementing interventions and strategies in an elementary school. The duration of the implementation and data collection was between September of 2007 and continued until April of 2009. Consistency in scores during the school year was validated by comparing data of the control group and the treatment group. Pre-test and post-test were completed each year.

The researcher works as an elementary reading specialist in the district where the study takes place. The researcher primarily works in a pull out setting where the READ 180 program was implemented. All subjects in the study were seen personally by the researcher on a daily basis. The researcher wrote field notes noting the strategies implemented each day as well as examining the reports generated by the READ 180 software.

Sample Selection (Participants)

Subjects were chosen with the following criteria: (a) attendance at a specific elementary school in a rural community in central Missouri who have been diagnosed as struggling with reading, and (b) demonstrated learning problems in the areas of fluency and reading comprehension which might hinder their progress academically. Students from fourteen classrooms were identified as subjects for the research to be implemented

and data obtained. There were 60 control students and 60 treatment students that began this study. Data was collected on 58 control students and 58 treatment students. The students were between 3.0 and 1.0 years behind in reading as measured by the STAR. All students were at the third or fourth grade level during the 2007-2008 school year and the fourth or fifth grade during the 2008-2009 school year.

CHAPTER 4 - Results of the Study

Introduction

The site of this case study took place in a community in central Missouri. The school district serves a rural community. The school district includes six elementary buildings, one middle school building, and one high school building. The elementary school was the setting for implementation during the fall and spring of 2007-2008 and 2008-2009 school years. The building includes third grade through sixth grade with approximately 1,150 students enrolled during a regular school year. The study was conducted to further examine the effectiveness of instructional methods in teaching students with learning difficulties with reference to reading fluency, reading comprehension, and the READ 180 program. Participants (N=116) were selected due to their STAR scores, teacher recommendation, and previous test results. Students completed a pre-test and post-test that consisting of the STAR scores to determine if there is a higher post-test score than pre-test score on the STAR. Hands-on computer based learning and direct instruction utilizing the READ 180 program was the instructional intervention. This method of instruction was employed to assist at risk students to learn communication arts skills. This study investigates the conditions under which reading strategies improve with relationship to gender. In addition, the study was designed to examine the benefit, if any, of hands-on computer based learning for the male participants. The teachers of the control group employed the traditional lecture, balanced literature, and text approach. Participants (N=116) were assigned to a treatment or a control group. Both groups of students completed a pre-test and post-test that consists of 25 items. The school also included data on gender (coded Male=0, Female=1).

Purpose of the Study

The purpose of this quantitative study was to investigate the effect of comprehension interventions and strategies on the achievement of students with learning difficulties. Early intervention and strategy instruction will assist students to become better learners. This study primarily explores READ 180 to increase fluency and reading intervention strategies to enhance reading comprehension. Other strategies may be employed but are not part of this particular study as they are a normal component of the regular reading program. During this study data was collected and analyzed to address the following questions.

Research Questions

1. Did the READ 180 approach to instruction have an impact on student learning?
2. Was the instructional method more effective on either gender?
3. Was the treatment group mean post-test scores significantly higher than the mean post-test scores of the control group?
4. Was the mean male post-test scores in the treatment group significantly higher than the mean male pre-test scores?

The following hypotheses will guide this study.

H₁: The treatment group mean post-test scores will be significantly higher than the mean post-test scores of the control group.

H₀₁: The treatment group mean post-test scores will not be significantly higher than the mean post-test scores of the control group.

H₂: There will be a difference between males' post-test scores then females' post-

test scores in the treatment group.

H₀₂: There will not be a difference between males’ post-test scores then females’ post-test scores in the treatment group.

H₃: The mean males’ post-test scores in the treatment group will be significantly higher than the mean males’ pre-test scores.

H₀₃: The mean males’ post-test scores in the treatment group will not be significantly higher than the mean males’ pre-test scores.

H₄: The mean females’ post-test scores in the treatment group will be significantly higher than the mean females’ pre-test scores.

H₀₄: The mean females’ post-test scores in the treatment group will not be significantly higher than the mean females’ pre-test scores.

Descriptive Statistics

Table 1

Group A Treatment Group Descriptive Statistics for 2007-2008 School Year (N=58)

	Mean	Standard Deviation
Pre-test		
Whole Group	1.5	0.6
Male	1.5	0.7
Female	1.5	0.6
Post -test		
Whole Group	2.4	1.0
Male	2.4	1.1
Female	2.4	1.0

Table 1 contains the descriptive statistics of the groups on the pre-test and post-test. The mean of the whole Group A pre-test was 1.5 and the SD was 0.6. The mean of the male Group A pre-test was 1.5 and the SD was 0.7 as compared to the mean of the female Group A pre-test was 1.5 and the SD was 0.6. The mean of the whole treatment Group A post-test was 2.4 and the SD was 1.0. The mean of the male treatment Group A post-test was 2.4 and the SD was 1.1. The mean of the female Group A post-test was 2.4 and the SD was 1.0. The mean of the Group A post-test was 2.4, the SD was 1.0 and the mean of the Group A pre-test was 1.5, the SD was 0.6.

Table 2

Group B Treatment Group Descriptive Statistics for 2007-2008 School Year (N=58)

	Mean	Standard Deviation
Pre-test		
Whole Group	2.0	0.6
Male	1.9	0.7
Female	2.1	0.5
Post -test		
Whole Group	2.6	0.7
Male	2.4	0.4
Female	2.8	0.9

Table 2 contains the descriptive statistics for Group B. The mean of the Group B pre-test was 2.0, the SD was 0.6. The mean of the Group B post-test was 2.6, the SD was

0.7. The mean of the male treatment Group B pre-test was 1.9 and the SD was 0.7 as compared to the mean of the male treatment Group B post-test was 2.4 and the SD was 0.4. The mean of the female treatment Group B pre-test was 2.1 and the SD was 0.5 compared to the mean of the female treatment Group B post-test was 2.8 and the SD was 0.9. The mean of the whole Group B improved from pre-test to post-test. Additionally, the mean of the boys and the girls from the pre-test to the post-test increased.

Table 3

Group C Treatment Group Descriptive Statistics for 2007-2008 School Year (N=58)

	Mean	Standard Deviation
Pre-test		
Whole Group	2.6	0.2
Male	2.7	0.1
Female	2.6	0.2
Post -test		
Whole Group	3.4	0.6
Male	3.7	0.3
Female	3.2	0.6

Table 3 contains the descriptive statistics of the groups on the pre-test and post-test. The mean of the whole Group C pre-test was 2.6 and the SD was 0.2. The mean of the male Group C pre-test was 2.7 and the SD was 0.1 as compared to the mean of the female Group C pre-test was 2.6 and the SD was 0.2. The mean of the whole Group C

post-test was 3.4 and the SD was 0.6. The mean of the male Group C post-test was 3.7 and the SD was 0.3. The mean of the female Group C post-test was 3.2 and the SD was 0.6. The mean of the Group C pre-test was 2.6, the SD was 0.2. The mean of the Group C post-test was 3.4, the SD was 0.6.

Table 4

Group D Treatment Group Descriptive Statistics for the 2007-2008 School Year (N=58)

	Mean	Standard Deviation
Pre-test		
Whole Group	1.4	0.5
Male	1.5	0.6
Female	1.2	0.3
Post -test		
Whole Group	2.6	1.0
Male	2.5	1.0
Female	3.0	1.1

Table 4 contains the descriptive statistics for Group D. The mean of the Group D pre-test was 1.4, the SD was 0.5. The mean of the Group D post-test was 2.6, the SD was 1.0. The mean of the male Group D pre-test was 1.5 and the SD was 0.6 as compared to the mean of the male Group D post-test was 2.5 and the SD was 1.0. The mean of the female Group D pre-test was 1.2 and the SD was 0.3 compared to the mean of the female Group D post-test was 3.0 and the SD was 1.1. The mean of the whole Group D

improved from pre-test to post-test. Additionally, the mean of the boys and the girls in Group D from the pre-test to the post-test increased.

Table 5

Control Group Descriptive Statistics for 2007-2008 (N=58)

	Mean	Standard Deviation
Pre-test		
Whole Group	2.1	0.7
Male	2.0	0.5
Female	2.3	1.0
Post -test		
Whole Group	3.2	0.2
Male	3.1	0.1
Female	3.4	0.5

Table 5 contains the descriptive statistics of the control group on the pre-test and post-test. The mean of the whole control group pre-test was 2.1 and the SD was 0.7. The mean of the male control group pre-test was 2.0 and the SD was 0.5 as compared to the mean of the female control group pre-test was 2.3 and the SD was 1.0. The mean of the whole treatment group post-test was 3.2 and the SD was 0.2. The mean of the male treatment group post-test was 3.1 and the SD was 0.8. The mean of the female control group post-test was 3.4 and the SD was 3.1. The results of the treatment groups will be compared to the control groups to determine if correlations are present.

Table 6

Treatment Group Descriptive Statistics for 2008-2009 (N=58)

	Mean	Standard Deviation
Pre-test		
Whole Group	3.8	0.6
Male	3.6	0.7
Female	3.9	0.6
Post -test		
Whole Group	3.9	0.7
Male	3.8	0.6
Female	4.0	0.7

Table 6 contains the descriptive statistics of the control group on the pre-test and post-test. The mean of the whole control group pre-test was 3.8 and the SD was 0.6. The mean of the male control group pre-test was 3.6 and the SD was 0.7 as compared to the mean of the female control group pre-test was 3.9 and the SD was 0.6. The mean of the female control group post-test was 4.0 and the SD was 0.7. The results of the treatment groups will be compared to the control groups to determine if correlations are present.

Table 7

Group A Treatment Group Descriptive Statistics for 2008-2009 (N=58)

	Mean	Standard Deviation
Pre-test		
Whole Group	2.7	1.0
Male	2.3	1.0
Female	2.7	1.1
Post -test		
Whole Group	3.7	0.7
Male	3.9	1.3
Female	3.7	0.7

Table 7 contains the descriptive statistics for the treatment group. The mean of the treatment group pre-test was 2.7, the SD was 1.0. The mean of the treatment group post-test was 3.7, the SD was 0.7. The results of the treatment group pre-test will be compared to the treatment group post-test to determine if correlations are present. The mean of the male treatment group pre-test was 2.3 and the SD was 1.0 as compared to the mean of the male treatment group post-test was 3.9 and the SD was 1.3. The mean of the female treatment group pre-test was 2.7 and the SD was 1.0 compared to the mean of the female treatment group post-test was 3.7 and the SD was 0.7.

Table 8

Group B Treatment Group Descriptive Statistics for 2008-2009 School Year (N=58)

	Mean	Standard Deviation
Pre-test		
Whole Group	2.7	0.7
Male	2.8	0.7
Female	2.7	0.8
Post-test		
Whole Group	4.2	0.6
Male	4.1	0.6
Female	4.2	0.6

Table 8 contains the descriptive statistics for Group B. The mean of the Group B pre-test was 2.7 and the SD was 0.7. The mean of the Group B post-test was 4.2 and the SD was 0.6. The mean of the male treatment Group B pre-test was 2.8 and the SD was 0.7 as compared to the mean of the male treatment Group B post-test was 4.1 and the SD was 0.6. The mean of the female treatment Group B pre-test was 2.7 and the SD was 0.8 compared to the mean of the female treatment Group B post-test was 4.2 and the SD was 0.6. The mean of the whole Group B improved from pre-test to post-test. Additionally, the mean of the boys and the girls from the pre-test to the post-test increased.

Table 9

Group C Treatment Group Descriptive Statistics for 2008-2009 School Year (N=58)

	Mean	Standard Deviation
Pre-test		
Whole Group	2.3	0.5
Male	2.5	0.4
Female	2.1	0.5
Post -test		
Whole Group	3.4	0.4
Male	3.6	0.1
Female	3.2	0.5

Table 9 contains the descriptive statistics of the groups on the pre-test and post-test. The mean of the whole Group C pre-test was 2.3 and the SD was 0.5. The mean of the male Group C pre-test was 2.5 and the SD was 0.4 as compared to the mean of the female Group C pre-test was 2.1 and the SD was 0.5. The mean of the whole Group C post-test was 3.4 and the SD was 0.4. The mean of the male Group C post-test was 3.6 and the SD was 0.1. The mean of the female Group C post-test was 3.2 and the SD was 0.5. The mean of the Group C pre-test was 2.3, the SD was 0.5. The mean of the Group C post-test was 3.4, the SD was 0.4.

Table 10

Group D Treatment Group Descriptive Statistics for the 2008-2009 School Year (N=58)

	Mean	Standard Deviation
Pre-test		
Whole Group	2.4	0.7
Male	2.4	0.6
Female	2.3	0.9
Post -test		
Whole Group	3.4	0.5
Male	3.6	0.9
Female	3.3	0.5

Table 10 contains the descriptive statistics for Group D. The mean of the Group D pre-test was 2.4, the SD was 0.7. The mean of the Group D post-test was 3.4, the SD was 0.5. The mean of the male Group D pre-test was 2.4 and the SD was 0.6 as compared to the mean of the male Group D post-test was 3.6 and the SD was 0.9. The mean of the female Group D pre-test was 2.3 and the SD was 0.9 compared to the mean of the female Group D post-test was 3.3 and the SD was 0.5. The mean of the whole Group D improved from pre-test to post-test. Additionally, the mean of the boys and the girls in Group D from the pre-test to the post-test increased.

Descriptive Statistics

Table 11

Control Group Descriptive Statistics for the 2008-2009 School Year (N=58)

	Mean	Standard Deviation
Pre-test		
Whole Group	3.4	0.6
Male	3.2	0.5
Female	3.5	0.6
Post -test		
Whole Group	3.5	0.7
Male	3.4	0.6
Female	3.6	0.7

Table 11 contains the descriptive statistics of the control group on the pre-test and post-test. The mean of the whole control group pre-test was 3.4 and the SD was 0.6. The mean of the male control group pre-test was 3.3 and the SD was 0.5 as compared to the mean of the female control group pre-test was 3.5 and the SD was 0.6. The mean of the whole treatment group post-test was 3.5 and the SD was 0.7. The mean of the male treatment group post-test was 3.4 and the SD was 0.6. The mean of the female control group post-test was 3.5 and the SD was 0.7. The results of the treatment groups will be compared to the control groups to determine if correlations are present.

Test for Means

Table 12

Independent samples T-test for differences in Means (N=58)

Group	Mean	tStat	Significance
Control Difference	.1655		
Treatment Difference	.1224	-1.3	p=.3788

Note. Claim: Treatment group will improve more than the control group. Ho: Mean1 is less than or equal to Mean 2. Ha: Mean1 is greater than Mean 2. n1=58 n2 =58

Table 12 depicts the independent samples T-test for significance in mean was run for the control and treatment posttest scores. The P-value is the probability of making a Type 1 error. Table 12 presents the results of the T-test for differences. The mean T-tests for difference scores for the treatment group were .1224 and the mean score for the control group were .1655. The T-test revealed a change, but not a statistically significant difference in mean scores, (p= .3788). This means there is a 37.88% chance that the treatment group will improve more that the control group. The significance is much higher therefore the null hypothesis is accepted and the hypothesis is rejected. There is not enough information to accept the claim of the hypothesis.

Table 13

Independent samples T-test for differences in Means (N=58)

Group	Mean	Standard Deviation	tStat	P-value
Male Pretest (treatment)	2.6	0.6		
Male Posttest (treatment)	3.7	0.4	-9.6	p=.004

Table 13 depicts the independent samples T-test for significance in mean was run for the treatment group male pretest and posttest scores. The P-value is the probability of making a Type 1 error. The mean scores for the male pretest treatment group were 2.6 and the SD was 0.6. The mean score for the male posttest treatment group were 3.7 and the SD was 0.4. The T-test revealed a significant difference in mean scores, ($p = .004$). The significant difference was $p = .004$ for the males pretest and posttest scores. The significance means that there is less than 1% chance that the Read 180 program does not make a difference for males. There is a 99% chance that the Read 180 program does make a difference for males.

Table 14

Independent samples T-test for differences in Means (N=58)

Group	Mean	Standard Deviation	tStat	P-value
Female Pretest (treatment)	2.5	0.7		
Female Posttest (treatment)	3.7	0.5	-10.9	p=.008

Table 14 depicts the independent samples T-test for significance in mean was run for the treatment group female pretest and posttest scores. The P-value is the probability of making a Type 1 error. The mean scores for the female pretest treatment group were 2.5 and the SD was 0.7. The mean score for the male posttest treatment group were 3.7 and the SD was 0.5. The T-test revealed a significant difference in mean scores, ($p = .008$). The significant difference was $p = .008$ for the females pretest and posttest scores. The significance means that there is less than 1% chance that the Read 180 program does not make a difference for females. There is a 99% chance that the Read 180 program does make a difference for females.

Analysis

The results of this research confirm the effectiveness of using hands-on computer based learning and direct instruction utilizing the READ 180 program as the instructional intervention to learn communication arts skills. Read 180 can significantly improve reading comprehension and fluency skills of females. The data shows that consistent gains were made by the students on all measures of communication arts. The research has also shown effectiveness of using laboratory computer based learning and direct instruction utilizing the READ 180 program as the instructional intervention to learn

communication arts skills for males. The mean of the whole Group for Groups A, B, C, and D improved from pre-test to post-test. Additionally, the mean of the boys and the girls for Groups A, B, C, and D increased from the pre-test to the post-test.

The first aim of this research was to measure if the treatment group mean post-test scores were not significantly higher than the mean post-test scores of the control group. The independent sample T-test revealed a significant difference in the means between the control group and the treatment group. The students in this study made statistically significant progress in communication arts skills measured by pre-test and post-test scores. The significance is much higher therefore the null hypothesis is accepted and the hypothesis is rejected. There is not enough information to accept the claim of the hypothesis.

The second aim of the research was to examine whether there is or is not a difference between male post-test scores and female post-test scores in the treatment group. There was a difference between males and the posttest scores. Statistically significant differences were found. It can be concluded that there is a higher difference between male post-test scores than female post-test scores in the treatment group. Consequently, the null hypothesis 2 is rejected.

The third research question was to inspect the mean male post-test scores in the treatment group to determine if they were not significantly higher than the mean male pre-test scores. The mean male post-test scores in the treatment group were higher than the mean male pre-test scores. The male students appeared to benefit from using laboratory computer based learning and direct instruction utilizing the READ 180

program as the instructional intervention to learn communication arts skills. As a result, null hypothesis 3 is rejected.

The fourth research question was to scrutinize the mean female post-test scores in the treatment group to determine if they were not significantly higher than the mean female pre-test scores. The mean female post-test scores in the treatment group were higher than the mean female pre-test scores. For this reason, the null hypothesis 4 is rejected.

Students were selected by administration for READ 180 program or a traditional reading classroom based on STAR test results and teacher recommendation. Identical pretest measures were utilized to select subjects for READ 180 and the traditional reading classroom. The comparison group participated in a traditional reading program, and the treatment group was provided READ 180 as a reading intervention. T-tests were used to examine the statistics related to reading achievement. In conclusion, it is important to note that the aim of READ 180 is similar to using any laboratory computer based learning and direct instruction as the educational intervention. It is to learn communication arts skills to enhance the reading comprehension and fluency. One limitation of this research includes sample size. The participants (N=116) provided a partial and imperfect sample that doesn't represent the population. Increasing the data, data collection duration, and sample size would have provided a better statistical base for analysis. The research in this paper only encompasses students at one elementary in a central Missouri community. Ensuring that the sample size represented the entire population of students is essential. Multiple levels of research would be required to accomplish this broad goal. Parameters would benefit if all of the other data was more

likely to represent the population of students who are learning reading comprehension and fluency between the ages of kindergarten through another specified level or grade.

According to the findings of this research, the results look promising. There appears to be an impact on gender with relationship to laboratory hands-on learning and the traditional lecture text approach. More testing is essential to ensure accurate data analysis on which to base instructional change. There remains a need to know how much of an impact on reading comprehension and fluency can be made by instruction abounding with individual components which increase communication arts skills and knowledge. Blending methods and determining benefits for samples will allow meaningful and effective teaching interventions to be based on research-based methods. Work and research into reading strategies and teaching must continue to develop before communication arts can be completely understood. Communication arts instruction will advance as the findings of research are utilized in classrooms on a daily basis.

CHAPTER 5 - Results of the Study Analysis

Introduction

The aim of this study was to determine the effectiveness of instructional methods in teaching students with learning difficulties with reference to reading fluency, reading comprehension, and READ 180. The READ 180 program was the instructional intervention program that investigated the conditions under which reading fluency and reading comprehension improves for students at risk. Participants (N=116) were assigned to a treatment group which participated in seventy-five minutes a day of READ 180 instruction. All students completed a pre-test and post-test that consisted of the STAR scores.

Discussion of Findings

Implementing READ 180 whole-group and small-group instruction can be challenging. For instance, one group of struggling students is expected to work independently as the reading specialist leads another small group of students while a third group is working on individualized computer instruction. Teachers without an extensive background in teaching reading are likely to struggle during whole-group instruction and find it difficult to lead small-group instruction. Each student has strengths and needs in the area of reading and writing. Meeting all of these needs could be very overwhelming for a teacher without a background in reading instruction. Managing the independent reading component of READ 180 was complicated because students who were not invested in the program had a tendency to misbehave during unsupervised rotations such as independent reading. The computer component was also challenge to manage because technology difficulties forced the reading specialist to discontinue instruction to resolve

those computer issues. Classroom management was the chief factor for the computer-assisted component and independent reading component, which made it complicated to implement. Quality classroom management was essential to ensure that learning by all students continued. The reading specialist needed to contact the Help Desk at many points during the implementation of the READ 180 program for assistance with frequent and pervasive technical problems. Problems included computers freezing, voice-recording not working, students being bumped off the computer mid-session, and student's data being lost or corrupted. Progress was shown through the use of data for females and males. If all of the computer issues were resolved, the students would have more time to access the computer software. This would likely lead to additional progress by the students.

Recommendations for Future Studies

In conclusion, it is important to note that the aim of comprehension and fluency interventions, such as using READ 180 as the instructional intervention to learn communication arts skills, should be used as remediation once students have fallen remarkably behind their peers. Best practice would be for students to be introduced to a balanced communication arts approach so that the amount of remediation needed can be decreased. Buying READ 180 for the entire district might not be the most cost effective approach at this time. The best practice approach would be to complete the READ 180 instructional intervention for several additional school years before investing a large amount of money. The current data has positive potential that might impact the implementation for the entire district.

The results in this study exposed that an intensive reading intervention like READ

180 can improve reading achievement for struggling readers. This reading intervention study was limited by sample size and restricted to a 2-year span. For future research, larger samples should be selected from subgroups utilizing a longitudinal approach of 5 or more years to ensure validity. Many questions regarding efficient strategies to quicken the reading improvement of struggling elementary readers still remain. Additional research with READ 180 could cover how this program corresponds with improvement in MAP scores.

A longitudinal study can scrutinize the effect of vertical alignment across grade levels to consider whether the implementation and execution of READ 180 at the elementary, middle, and high school levels is feasible. The data would need to clearly indicate that READ 180 has positive benefits for struggling readers related to academic and postsecondary success. Future research is recommended to analyze the achievement of the READ 180 students enrolled in a language arts class where READ 180 is embedded as compared to the achievement of students who obtain language arts instruction and READ 180.

Limitations

The limitation of this research is due to sample size. The participants (N=116) provided a partial and imperfect sample that does not represent the population. Increasing the data, data collection duration, and sample size would have provided a better statistical base for analysis. The research in this paper only encompassed students at this one school in the 3rd and 4th grades during 2007 through 2008 and 4th and 5th grades during 2008 through 2009. Ensuring that the sample size represented the entire population of students is essential. Multiple levels of research would be required to accomplish this broad goal.

READ 180 would benefit all participating students if it was implemented with the intended audience of 4th, 5th, and 6th graders.

READ 180 Strengths and Weaknesses

The Scholastic READ 180 program provides many benefits. READ 180 supplies educators a structure for differentiating and individualizing instruction. Small group instruction, computer-assisted instruction, and leveled independent reading allow the teacher the ability to assist struggling students in a beneficial manner. The school district provided the needed materials and technology so that the READ 180 classroom contained areas for independent reading, small group instruction, and a computer area. Computers with headphones and microphones were provided by the district, and the building administrators ensured that replacement items were available as needed. The computer assisted instruction was employed for students across several grade levels.

There were challenges associated with the implementation of the READ 180 program. There is some amount of uncertainty among regular education teachers who had participating students in their classroom. Their concerns centered on whether to use READ 180 as a double-dose or to eliminate Communication Arts instruction for these students because they were also receiving READ 180 services. Of additional concern to instructors is that there are a finite number of hours in each school day, thus scheduling of all necessary activities decreased the amount of READ 180 time available to individual students. There are numerous technical problems with the computer-assisted component of READ 180, including the program freezing up or not working when students recorded themselves reading a passage. Additionally, the READ 180 audio does not function at times, and the program repeatedly malfunctions for select students.

Technical support from Scholastic was not timely. During the implementation of the READ 180 program, a district technology specialist in the school district took over technical support issues due to the lack of support from the READ 180 Corporation. The Reading Specialist who implemented the program felt isolated. The READ 180 implementer had unique concerns which were not shared by other reading specialists in the district. Virtually all the regular education teachers and the other reading specialists throughout the district were utilizing the Basal, Balanced Literacy, or other intervention programs.

Implementing READ 180 whole-group and small-group can be very challenging due to the fact that struggling students are expected to work independently as the reading specialist leads a small group of students. Background in teaching reading is essential due to the fact that whole-group instruction and small-group instruction might be hard to lead without previous experience. The independent reading component of READ 180 was complicated due to student's misbehavior during unsupervised rotations. The computer component was problematic due to technology glitches. Implementing the computer-assisted component and independent reading component was difficult thus making classroom management critical. Quality classroom management was essential to ensure that learning by all students continued. Despite contacting the Help Desk at many points during the implementation of the READ 180 program computer problems persisted. The READ 180 program has benefits and students would likely make larger gains if the program was implemented as it is intended.

Implications

This study supports the research demonstrating that reading achievement skills for struggling readers can be facilitated by research-based intervention strategies such as the READ 180 program. The foundation for an effective literacy program must include professional development, formative assessment, and summative assessment which are all elements of the READ 180 program. Additionally, it includes sufficient implementation training with online course and instructional support and assistance (Scholastic, 2002). Formative and summative assessments are provided by SAM which is an element of the READ 180 program. Moreover, reports based on norms and recommendations for aiding students as they strive to meet grade level expectations are accessible to educators (Scholastic, 2002). READ 180 scaffolds background knowledge and assists students construct mental representations (Cognition & Technology Group at Vanderbilt, 1990). The results in this study show that larger gains in reading achievement can be attained by developing higher order thinking through the execution and implementation of the READ 180 program. The READ 180 software was intended to encourage students to read and revisit concepts requiring reinforcement and improvement. The findings in this study sustain the notion that attaching instruction to computer-based technology has advantages that will assist with escalating reading achievement.

The implication of this study indicates that implementation, although not optimal, can produce gains. If schools decide to make use of READ 180, administrators and districts should fashion student schedules so that READ 180 can be executed as recommended by Scholastic to facilitate the most advantageous benefits from

participation in the READ 180 program. Software problems which were beyond the power of the reading specialist who was executing READ 180 were challenging during the initial year of implementation. Implementation difficulties will become critical as schools become more accountable because struggling readers cannot lose instructional time due to technical software obstacles. The study implies that READ 180 is effective as a reading intervention.

President George W. Bush signed NCLB in January 2002, to make certain that all students acquire a quality education and achieve proficiency in the core subject areas (Committee on Education and the Workforce, 2002). The NCLB requires that highly qualified teachers use reading interventions that are scientifically based and confirmed to be effective. As accountability comes to the forefront of education, the results in numerous READ 180 studies have shown significant reading achievement gains for school districts such as Boston, Houston, Dallas, and Orange County (Scholastic, 2005a). As standards and expectations continue to be on the rise, many schools must utilize textbooks as the primary source of curriculum delivery. This study sustained the research that indicates that utilizing the READ 180 instructional model can show achievements in reading for struggling students. The implication is that literacy must be accepted vertically across the grade levels and content areas throughout all levels of public schooling.

Summary

The purpose of this study was to examine the effects on reading achievement for elementary school students who were enrolled in READ 180 as compared to students enrolled in a traditional reading program. Despite the need for research on best practices

for struggling readers in third and fourth grade, there has been limited research on the benefits of READ 180 for these grade levels as compared to adolescent readers. The research in this study added to the research on the effects of reading interventions at the elementary level. According to the findings of this research, the results of the READ 180 program look promising. There appears to be an impact on learning of comprehension and fluency for students with learning difficulties with relationship to READ 180. More implementation time and testing will be essential to ensure accurate data analysis on which to base instructional change. Comprehension and fluency improvement can be better studied by implementing the READ 180 program with the correct grade levels and with the prescribed amount of time. Future implementation of READ 180 as intended will allow for successful teaching interventions to be based on methods that have been proven. Work and research into comprehension and fluency strategies and teaching must continue to develop before reading instruction can be understood. Comprehension and fluency instruction will advance as the findings of research are utilized in all classrooms on a daily basis.

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OBJECTIVE

Educator in Daegu, Korea

EDUCATION

July 2009	LINDENWOOD UNIVERSITY (4.0/4.0) <i>Educational Doctorate for Instructional Leadership and Policy Analysis</i> <i>Dissertation: The Implementation of Interventions and Strategies for Children who Struggle with Reading Utilizing the READ 180 Program</i>	St. James, MO
May 2008	LINDENWOOD UNIVERSITY (4.0/4.0) <i>Educational Specialist for Instructional Leadership and Policy Analysis</i> <i>Thesis: A Quantitative Study of the Implementation of Interventions and Strategies of Children who Struggle with Reading</i>	St. James, MO
May 2006	DRURY UNIVERSITY (4.0/4.0) <i>Masters of Education</i> <i>Concentration: Special Reading</i> <i>Thesis: An Observational Case Study of the Implementation of Interventions and Strategies of Children who Struggle with Learning Disabilities Utilizing Readers' Theater</i>	Springfield, MO
May 1999	KANSAS STATE UNIVERSITY (3.5/4.0) <i>Educational Bachelor of Science in Agriculture</i> <i>Major: Recreation and Parks Administration</i>	Manhattan, KS
May 1997	KANSAS STATE UNIVERSITY (3.8/4.0) <i>Master of Science</i> <i>Major: Special Education</i> <i>Minor: Learning Disabilities (K-12) and Mental Retardation (K-9)</i>	Manhattan, KS
July 1995	KANSAS STATE UNIVERSITY (3.5/4.0) <i>Bachelor of Science</i> <i>Major: Elementary Education</i> <i>Minor: Mathematics (5-9), General Science (5-9), and Social Studies (5-9)</i>	Manhattan, KS

PROFESSIONAL CERTIFICATION

Early Childhood Education (B-3)
 Elementary Education (1-6)
 Mild/Moderate Learning Disabilities (K-12)
 Mild/Moderate Mental Handicapped (K-12)
 General Science (5-9)
 Mathematics (5-9)
 Social Science (5-9)
 Special Reading (K-12)

EXPERIENCE

- August 2007-
May 2009 **DRURY UNIVERSITY** St. Robert, MO
Adjunct instructor
Courses: Education of the Exceptional Child, Psychology of the Exceptional Child, and Reading Practicum II
- August 2007-
May 2009 **WAYNESVILLE SCHOOL DISTRICT** Waynesville, MO
Reading Specialist at Freedom Elementary
- Coordinator of the after school tutoring program
 - Facilitator of Freedom Curriculum Mapping for 3rd, 4th, 5th, and 6th grade
 - Member of the Reading Committee
 - Student Assistance Team Coordinator
 - New Teacher Mentor for two teachers
 - Literacy Leader at Freedom Elementary
 - Presenter of 6 +1 Traits In-service for staff at Freedom elementary and other district employees
 - Presenter of Reading Strategies In-service for staff at Freedom elementary and other district employees
- August 2008-
December 2008 **DRURY UNIVERSITY** St. Robert, MO
Adjunct instructor
Course: Children's Literature
- August 2006-
May 2007 **WAYNESVILLE SCHOOL DISTRICT** Waynesville, MO
Inclusion Teacher at Freedom Elementary
- Member of the Reading Committee
 - Member of the Student Assistance Team
 - Coordinator of the after school tutoring program
 - Presenter of 6 +1 Traits In-service for staff at Freedom elementary and other district employees
- August 2005-
May 2006 **RICHLAND SCHOOL DISTRICT R-IV** Richland, MO
Junior High Inclusion and Senior High School Special Education Teacher
- Provided individualized training with colleagues on IEP goal writing which included baselines
 - Attended conference which focused on Special Education Law and Inclusion for students who have Autism and Asperger's.
 - Administered and analyzed WISC-III
- August 2003-
May 2005 **GEARY COUNTY SCHOOL DISTRICT** Junction City, KS
4th Grade Teacher at Sheridan Elementary
- Supervised and managed the after school tutoring program
 - Prepared and administered district and state assessments
 - Developed, organized, and implemented thematic units as well as literature focused units
 - Mentored a first year teacher
 - Mentored student teachers, Block A, Block B, and teacher aides from Kansas State University
 - Participant in Debbie Miller Training during school year and two summers
 - Staff member of a Blue Ribbon School

- August 1999- May 2003 **GEARY COUNTY SCHOOL DISTRICT** Junction City, KS
Interrelated Elementary Teacher at Sheridan Elementary
- Developed, organized, and implemented IEP goals and objectives
 - Administered and analyzed Brigance and Woodcock-Johnson as well as local and state assessments
 - Participated in the Special Education Task Force
- Dec. 1992- August 2000 **MANHATTAN PARKS AND RECREATION DEPARTMENT** Manhattan, KS
Special Populations Coordinator, Little Apple Day Camp Coordinator, and Recreation Technician
- Interviewed, hired, trained, and disciplined seasonal employees.
 - Planned, implemented, and taught recreations programs in arts and crafts, drama and creative movement, sports, and music for individuals from age 2 up to and including retirement age
 - Planned five annual brochures, staff and volunteer manuals, and reminder fliers
 - Complied with state standard for running Little Apple Day Camp
 - Managed budgeting, facility management, staff scheduling, and program development
 - Planned and organized sporting and recreational events throughout the year and annual events

PRESENTATIONS

- Haag Guyne, Rebecca (2006). Comprehension instruction: Expository Retelling. Material presented at the Drury University.
- Haag Guyne, Rebecca (2006). 6 + 1 Traits Part 1. Material presented at the Waynesville School District at Freedom Elementary.
- Haag Guyne, Rebecca (2006). 6 + 1 Traits Part 2. Material presented at the Waynesville School District at Freedom Elementary.
- Haag Guyne, Rebecca (2007). 6 + 1 Traits Part 1. Material presented at the Waynesville School District at Partridge Elementary.
- Haag Guyne, Rebecca (2007). 6 + 1 Traits Part 2. Material presented at the Waynesville School District at Partridge Elementary.
- Haag Guyne, Rebecca (2008). Reading Comprehension Strategy Instruction. Material presented at the Waynesville School District at Freedom Elementary.
- Haag Guyne, Rebecca (2008). Nonfiction text structures. Material presented at the Waynesville School District at Freedom Elementary.

PUBLICATION

- Haag Guyne, Rebecca (2007). *The Educational Benefits of Gaming*. techLearning.

MEMBERSHIPS

- Council for Exceptional Children
National Education Association