# Measuring Student Reading Comprehension and Fluency with Response to Intervention

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A Special Project

Presented to

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ABSTRACT

Students across the nation were not reading at grade level. Therefore, reading programs needed to be implemented to enhance levels of reading proficiency to better prepare students for college and for general life in society. The reading programs needed to be cost effective and it was imperative that they worked.

The researcher conducted an experimental study that measured student progress after reading programs were implemented using the Response To Intervention model. With a control group and a treatment group, the study lasted for approximately six months. The data was compared and analyzed, and the researcher found that the reading programs increased the reading proficiency of the students involved in the study.

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# CHAPTER 1

## Introduction

### Background for the Project

If students were to be ready for success in college, work, and citizenship, they could not settle for a minimal proficiency level in reading while in the public education system. Rather, it was vital for students to develop advanced literary skills to master content areas such as science, history, and especially math. Furthermore, outside of the classroom and in the social realm, students needed to read with an adequate level of comprehension because according to Barrack Obama, "It's books more than anything else that are gonna give our young people the ability . . . the capacity to act responsibly with the respect to other people" (2007). Therefore, reading was not only important for success in school, but it was necessary to be a productive and empathetic citizen of humanity.

In the few years prior to 2007, educators, researchers, policymakers, professional associations, and advocacy groups worked to focus the attention of

policymakers and the public arena on the plight of millions of American students in grades four through twelve who could not read well enough to achieve even basic academic success. Consequently, the efforts of the aforementioned organizations and individuals resulted in local, state, and federal initiatives designed to help struggling students read with better fluency and comprehension. One such program that came into existence was Response To Intervention (RTI).

## Statement of the Problem

At the time of this study, schools faced budget cuts due to an unstable economy. Consequently, there was a need for confirmation that RTI had a positive impact on students' reading abilities after the onset of the program's implementation. Progress monitoring was necessary and records of the students' progressive reading scores needed to be viewed and compared to confirm or deny the program's effect. Without an increase in student reading abilities, time, money, and resources used would have been wasted, along with the notion that the students involved in the program probably fell even further behind in reading.

Purpose of the Project

If RTI improved student reading fluency and comprehension, RTI needed to remain in the school's curriculum. If reading scores showed little to no improvement, then the program required reevaluation.

Delimitations

The implementation of RTI took place in December of 2009, at Highland Jr. High in Cowiche, Washington, at the beginning of the second trimester. Within a six-period day, a class of nineteen eighth grade students met in a general education classroom during third period, between 9:46 a.m. and 10:43 a.m. In order to participate in RTI, the students were tested using the Academic Improvement Monitoring System-web (AIMSweb). Based on the test results, the students were placed into three categories: intensive, strategic, or benchmark. The students who tested into intensive and strategic were placed into the RTI program. The lowest achieving group of students had a different curriculum than the second-lowest achieving

group, albeit, both groups were still in RTI; the former was in another classroom with a different instructor. The latter group stayed in the researcher's classroom.

Assumptions

The students in RTI struggled with reading fluency and comprehension; therefore, they were below grade level in reading.

The RTI program used materials that were tailored to the needs of struggling readers. Before introducing the program to public schools, RTI was developed with data that was intricately researched, correlated with studies that brought forth positive results. Consequently, students who engaged in the processes of RTI gained significant growths in their reading fluency and comprehension.

Hypothesis or Research Question

Students needed to increase their reading fluency and comprehension skills to be successful in other classes and on state assessments. Does RTI increase reading fluency and comprehension?

Null Hypothesis

There was no significant difference between reading skills of those who engaged in RTI and those who did not engage in RTI. Significance was determined for $p \geq .05$, .01, and .001.

Significance of the Project

Between the years 2006 and 2009, there was a steady decrease in the number of students meeting standard on the reading portion of the Washington Assessment of Student Learning (WASL) within the Highland School District. In the 2008-2009 school year, only 50.6% of seventh graders met the reading standard. Without some kind of intervention, close to the same percentage of students would not graduate on time. Thus, the drop out rate could increase, and fewer students would be ready for college or any other type of post-secondary training/education.

However, if the results from RTI proved to be positive, the Highland School District could maintain and strengthen a reading program that produced adequate readers.

Procedure

The vice principal, also a certified Guided Language Acquisition Design (GLAD) coordinator, assessed the students' reading abilities using AIMSweb, a benchmark and progress monitoring system. Using the test results, the vice principal determined which students would participate in the RTI program. The first day the program was implemented, the vice principal went into the researcher's classroom and explained to the students the process of RTI. The researcher timed the students when they read brief passages, calculated the students' reading goals, and made sure the students followed the correct RTI steps on a daily basis. Every two weeks, the vice principal assessed the students to determine if growth in the students' reading fluency took place.

Acronyms

AIMSweb. Academic Improvement Monitoring System; web meaning the system is on the web

GLAD. Guided Language Acquisition Design

IDEIA. Individuals with Disabilities Education Improvement Act

LAP. Literacy and Parenting

RTI. Response To Intervention

SSR. Sustained Silent Reading

WASL. Washington Assessment of Student Learning

VCCS. Virginia Community College System

# CHAPTER 2

## Review of Selected Literature

### Introduction

Middle and high school students continued to read at below grade level. A multitude of reading programs had been designed and implemented into school curricula, including RTI. If RTI proved to have a positive impact on student reading abilities, the program needed to remain in the selected curriculum to be utilized and adjusted as needed in order for continued success among students. However, if RTI appeared to have little to no effect on improving reading comprehension and fluency, the program needed to be reevaluated.

The literature reviewed confirmed that there was indeed a student reading deficit nationwide. Surprisingly, middle school and high school students were not the only students who were struggling readers; many college students had problems reading as well.

Reading Comprehension

Students fell behind in reading skills for a number of reasons, but few imagined that some reasons for struggling readers was because of poor instructional practices that were implemented in schools: "Schools have become unwitting coconspirators in the decline of reading" (Gallagher, 2010, p. 36). Ivey and Fisher (2005) noted five ineffective strategies that had been utilized in schools. One of these strategies involved not letting students practice reading, as described by Ivey and Fisher (2005). A new high school principal wanted to give back to the teachers more instruction time by taking away the daily allotted time for Sustained Silent Reading (SSR). During the next two years, the rate of books that were checked out in the school's library dropped significantly, and the students' achievement on the content standards test decreased (Ivey and Fisher, 2005).

Conversely, at another high school, after the principal allocated 20 minutes each day for SSR, the

school met state accountability requirements and the average reading level improved (Ivey and Fisher, 2005).

Ivey and Fisher agreed that just the SSR alone probably was not the only reason for improved reading skills. Ivey and Fisher (2005) went on to say that they could not imagine initiatives designed to improve reading that did not prioritize time with text. In fact, *Becoming a Nation of Readers* supported finding time in the day for reading, matching books to children, and allowing students to choose their own books (Scherer, 2010).

Another ineffective reading strategy was making students read what they did not know about and did not care about. One particular teacher handed out the novel *Things Fall Apart*, along with a packet that required the students to summarize each chapter, identify characters, and answer questions pertaining to the story. Without tapping into the students' prior knowledge or creating relevance to the story, many students did not read the book because they were

not interested in it. The students simply looked for the answers and struggled to get the packet finished toward the end of the unit (Ivey and Fisher, 2005).

Making students read difficult literature was yet another ineffective reading strategy. Instead of forcing all of his students to read the same text, a teacher allowed his struggling readers the choice of reading other books on the same topic. As noted by Miller (2010, p.34), one student stated, "When teachers tell us we have to read a book, we hate it. We like it that we get to choose what we read." As a result, these particular students learned the targeted information, but with the aid of literature that they could read and comprehend. Ivey and Fisher (2005) explained that they know of no student who got better at reading by reading books that were too difficult for him, nor of any student reading at a 4th grade level who learned to read at an 8$^{th}$ grade level by reading only 8$^{th}$ grade-level books.

Interrogating students about what they read was another ineffective teaching strategy when it came to

enhancing reading skills. Telling students that they needed to understand what they read was simply not enough. "We must teach comprehension, not just assess it" (Keene, 2010, p.70). One eighth grade teacher began a class period by saying, "Today, we are focusing on comprehension" (Ivey and Fisher, 2005, p.12). The teacher then proceeded to hand out a story for the students to read. As one student read aloud, others followed along while some occupied their time by doing other things, such as whispering to neighbors or working on other homework. After several paragraphs were read, the teacher stopped and asked, "Can somebody explain what is happening so far" (Ivey and Fisher, 2005, p. 12)? After three students failed to come up with adequate summaries, the teacher asked a few comprehension questions and got no responses, just blank stares from the pupils. The teacher ended up giving a summary (Ivey and Fisher, 2005).

However, in a sixth grade classroom, the teacher did not just explain a reading strategy, the teacher effectively modeled it to her students, which elicited

a number of responses from the students. When a student read, the teacher would verbally think aloud about what was happening in the story. The teacher then offered an answer by explaining to the students what was done in order to find the answer. At times, the teacher also related what happened in the story to a movie that the teacher had seen, which allowed the students to make relevant connections to their own lives. In short, the teacher and the student negotiated the text together (Ivey and Fisher, 2005), which was a step in a teaching strategy known as scaffolding. Scaffolding, according to Edmondson (2010), "help[s] students develop essential skills for understanding and extracting meaning from text and boost their performance on reading comprehension assessments."

Reading comprehension has proved to be a proactive, continual process of utilizing prior knowledge, metacognitive awareness, and reflection to make sense of a text. However, too often teachers confused teaching comprehension skills with testing

comprehension skills. And even though directly questioning students after reading was practiced for decades, Ivey and Fisher (2005) had no reason to believe that this practice actually developed better readers. Again, for years it was believed that if students were asked enough times to find the main idea of reading passages on their own, they would eventually figure out how to do it. Ivey and Fisher (2005) concluded that there were specific strategies that students could use to help students find what was important in texts; students could be more strategic before, during, and after they read.

The fifth ineffective reading strategy that Ivey and Fisher (2005) noted was buying a computer program and letting it do all the work. It was easy for students to appear to be working on the reading program while they sat in front of a computer, but it was just as easy to surf the web in a smaller window when the teacher wasn't looking. Furthermore, a student who was struggling could sit in front of his monitor feeling frustrated because he did not know an

answer and the computer could offer him no help. Ivey and Fisher (2005) explained that although computers and web sites could reinforce skills, they could not provide feedback that students required. Intervention reading programs needed to get teachers more involved, not take teachers out of the picture completely. Reading programs also needed to be based on assessment information and provide students with instruction on reading comprehension and not just focus on a single aspect of reading, such as phonics, fluency, or spelling (Ivey and Fisher, 2005). Gallagher (2010) agrees:

> Schools are not doing the job they once did of engaging students in the kinds of reading that enable them to become literate, well-informed adults. Instead, as students progress through our schools, they are forced to read more and more worksheets focused on isolated facts. (p.38)

Reading deficits were not only evident at the middle school level; across the nation, community

college faculty had also noticed that college students possessed weak reading skills, and that the students were not completing assigned reading tasks, let alone just reading for pleasure.

Institutional data from the Virginia Community College System (VCCS) confirmed that many students who entered college for the first time scored so low on their placement exams that the question arose as to whether or not those students could be successful in college-level courses. Moreover, even students who scored high enough to be placed in college-level courses were unprepared for the individual class reading expectations.

The VCCS also reported that students who qualified for Pell Grants were almost twice as likely to require developmental reading courses than those students who did not meet the qualifications of the need-based grants. Thus, socioeconomic status was a strong indication of where college students were with respect to their reading abilities (Long, 2009, p.7).

According to Stevens (2006, p.1), the goal of

middle schools for the past four decades was to make schools more responsive to the individual needs and abilities of students. Why, then, did many college freshmen continue to struggle in reading? If the teaching philosophies of middle schools emphasized creating more personalized learning environments, creating more meaningful curricula, and encouraging students to think reflectively and to solve problems, why did recent research indicate that during the middle school years achievement levels seemed to drop along with student motivation? And since reading and writing were central to performing well in other content areas, why did the general middle school philosophy seem to fail to strengthen and increase student reading capabilities?

Though, in theory, middle schools strived to match learning environments with the unique needs of students, some research suggested that the structural and instructional characteristics of middle schools were unresponsive, which resulted in declining student achievement, attendance, and motivation.

Response To Intervention

Response To Intervention did two things: Provided high-quality instruction and interventions that matched students' needs, and it used students' learning rate over time and level of performances to make educational decisions. Response to intervention also blended assessment, instruction, and school-classroom-parent communication to increase student learning (Buffum, Mattos, and Weber, 2009, p. 14).

Surveys of American adults (Kirsch, Jungeblut, Jenkins, & Kolstad, 1993, p. xviii) revealed that over 50% of Americans lacked the necessary literacy and math skills to compete in the current technologically advanced job market. These skills were not evenly distributed across groups defined by race, ethnicity, country of birth, or socioeconomic status; for some groups, the literacy and numeracy gap was so great that it affected their members' social, educational, and economic opportunities (Buffum et al., 2009, p. xviii).

Computers and technology took jobs of skillful

American laborers. At the same time, immigration increased rapidly. Naturally, students immigrating into the American school system were not as proficient on literacy tests as students who were born in America; in fact, many of the immigrants were unable to speak English when they entered school (Buffum et al., 2009, p. xviii). Consequently, if educators did not change the way they thought about public education and how it prepared its students for the job market, America's ability to compete economically could continue to deteriorate.

For too many years, schools in America used a discrepancy model to determine if a struggling student needed special education. The discrepancy model measured the difference between a child's potential and actual achievement to determine whether the child had a learning disability (Buffum et al., 2009, p. 2). The problem with this model was that the student had to fail before any type of action could take place. Under RTI, students were considered for special education services only after the students did not

respond to systematic, research-based interventions, which were the responsibility of the general education teacher.

Though aspects of RTI had been around for years, schools limited its use to special education classrooms. The new movement involving RTI shifted the responsibility of helping all students succeed from the special education teachers to all staff. This shift culminated in the Individuals with Disabilities Education Improvement Act (IDEIA), which was signed into law by President George W. Bush in December 2004 (Buffum et al., 2009, p. 2).

What made RTI different than other intervention programs in the past, according to Brown-Chidsey and Steege (2005, p. 2), was that assessment and instruction practices were integrated into an objectives-based system with built-in decision stages. An RTI system provided a unified system of education where assessment was universal, ongoing, and formative (Buffum et al., 2009, p. 2), and many were involved, including classroom teachers, speech and language

pathologists, psychologists and social workers, special education teachers, and administrators; they worked to assist students in new capacities. Furthermore, new academic resources were sought out, evaluated, and implemented with individuals and groups of students more often and with greater diagnostic specificity than they had in the past. Schools also provided flexible supports to students by modifying the frequency and types of assistance.

In RTI, it was not necessarily important to identify a student's learning disability; what was important was being able to collect observational data that provided the kind of services that the child needed. In order to collect relevant data, administrators, school leaders, and whomever else was involved needed to have special training.

Summary

Too many students were somehow slipping through the cracks of education; students who could not read were being passed from one grade to the next. Because the education system was not putting a major emphasis

on reading skills, illiterate adults were being produced in a society that largely depended on literacy.

There were a number of reading strategies that worked and that helped students to become successful readers, but schools were failing to implement reading programs that emphasized the reading strategies.

Though facets of the RTI model had been around for years, only special education students received the interventions. It was not until all staff members became involved in implementing effective reading strategies that it was determined RTI could be used effectively for struggling readers in the general education classroom as well.

# CHAPTER 3

## Methodology and Treatment of Data

### Introduction

Middle and high school students continued to read at below grade level. Various reading programs had been designed and implemented into school curricula, including RTI. If RTI had a positive impact on student reading abilities, the program needed to remain in the selected curriculum to be utilized and adjusted as needed in order for continued success among students. However, if RTI appeared to have little to no effect on improving reading comprehension and fluency, the program needed to be reevaluated.

### Methodology

A quasiexperimental research method was used to find the effectiveness of RTI. Both groups in the study received the same pretest, both groups received a different treatment, and both groups were administered a posttest near the end of the study.

Participants

The researcher studied a convenient sample: eighth-grade students in a general education English class and eighth-grade students in a Literacy and Parenting (LAP)class. Of the approximate 85 eighth-grade students, 72% was of Hispanic origin and 28% was white. The school district was in a rural setting in which 80% of the students received free or reduced lunch.

Nineteen of the 85 eighth-grade students made up the control group based on their reading pretest scores, and were, thus, placed in the LAP class. Eight of the 19 students in the LAP class were white, and 11 were of Hispanic origin; each student of Hispanic origin was bilingual. There were five females and 14 males in the control group. The nineteen students in the control group were randomly chosen off a list of all eighth grade students.

Besides the researcher, two other adults were involved with providing instruction to the control group: another English teacher and an administrator,

a Guided Language Acquisition Design (GLAD) coordinator.

Instruments

To determine the students' reading levels, the Academic Improvement Monitoring System-web (AIMSweb) reading assessment was used as a pretest and as a posttest, in both the winter and the spring, respectively. Following the pretest, the students received instruction in either the Rewards reading program or the Read Naturally reading program.

The AIMSweb used standard oral reading fluency assessment passages. Pearson Education (2008) stated that the passages were written by experienced educators and field-tested, revised, and researched by experienced educational researchers. The passages designed and used by AIMSweb were curriculum independent, ensuring that the success of students is assessed regardless of curriculum differences among teachers and schools, and/or changes in any given curriculum over time.

Furthermore, more than 25 years of research

showed that listening to a child read graded passages aloud for one minute and calculating the number of words read correctly per minute provided a highly reliable and valid measure of general reading achievement (Pearson Education, 2008).

Scientific research on reading had shown that students must acquire skills in five areas in order to become proficient readers: phonemic awareness, phonics, vocabulary, fluency, and comprehension. Rewards was designed to be a reading intervention program focusing on fluency-building, not a complete reading program. One component of phonemic awareness, syllable blending and segmenting, was addressed in the word attack activities of each lesson. Beginning phonics skills were practiced in the pre-skill activities, but were not taught directly. The program was designed to teach a flexible strategy that was easily remembered and applied by students (Florida Center for Reading Research, 2004).

There were three major strengths of the Rewards reading program: Implementation was simple and could

be used by a variety of professionals, para-professionals, and volunteers; intervention was short-term; and student progress was easily monitored, charted, and rewarded.

Read Naturally involved three strategies that research showed to have been effective in improving students' reading proficiency: teacher modeling, repeated reading, and progress monitoring. Students listened to recordings of stories read by fluent readers. In doing so, the students learned new words and were encouraged to pronunciate properly. The students also learned expression and phrasing from the teacher modeling strategy.

Repeated reading was another strategy research showed to improve fluency. Students practiced reading stories until they could read the stories at predetermined goal rates. Mastering stories helped students build fluency and confidence.

In Read Naturally, students became more involved in their own learning. The students monitored their progress by graphing the number of words they read

correctly in each story, for both the first reading of the story and for after they practiced reading the story. Daily monitoring of student progress had been shown to have a positive impact on student achievement.

Design

The researcher used Gay's formula (Gay, Mills, & Airasian, 2009)for the pretest-posttest control group design within the experimental study, or:

$$R\ O\ X_1\ O$$
$$R\ O\ X_2\ O$$

(p. 256)

Both groups were administered the same pretest, received different treatment, and both groups took the same posttest. However, another possible research design could have been:

$$R\ O\ X_1\ O\ O$$
$$R\ O\ X_2\ O\ O$$

(Gay et al., 2009)

Within the treatment time period, the students were assessed additional times in order to compare the results with the students' progress monitoring.

Procedure

In the winter trimester of the school year, each eighth-grade student was administered the AIMSweb reading assessment to determine each student's reading level. The reading assessment involved each student doing a timed read of one minute. Any student that read fewer than 130 words in the allotted minute qualified for a reading intervention program, and was, thus, placed in a LAP reading class in addition to the students' core English class. The students who qualified to be placed in a LAP reading class were further divided into two groups: strategic and intensive. The intensive students scored lowest on the pretest, and the strategic students did not quite reach benchmark, but they scored higher than the intensive students-between 100 and 129 words per minute.

Each group of students, intensive and strategic, received instruction from two different types of reading programs, and from two different English teachers in separate classrooms. The intensive

students received instruction from the Rewards reading program, and the strategic students received instruction from the Read Naturally program.

Because the students in this particular study had never participated in the Rewards program before, the students began by completing six review lessons that included skills and strategies for decoding multi-syllabic words. Each review lesson took 50-55 minutes to complete, and the lessons were from the Teacher's Guidebook.

After completing the six review lessons, the students received their own workbooks, which consisted of various reading passages. Before reading the passages, students circled word parts at the beginning and end of each word, underlined vowel sounds, read words aloud part by part, and then read the whole word. During the reading of each passage, the instructor asked literal and inferential comprehension questions, and after reading, students practiced reading the passage again, or repeated readings.

The strategic students were supplied with a total

of 48 stories to choose from. The first step for the strategic students was to choose any story and to immediately do a cold read, or a one-minute timed read without having practiced reading the story first. The cold read involved the student reading orally to the teacher a brief passage as the teacher read along in his own copy of the chosen passage. As soon as the timer rang, the student stopped abruptly, and the teacher calculated the student's score. The student was then given his words-per-minute score, along with his goal for his second timed read, or his hot read. With a blue colored pencil, the student then colored in a bar graph indicating his cold read score.

After the student's graph was colored in, the student listened to the same passage via a compact disc on the computer and with earphones. Each student listened to and read along with each passage at least three times. After listening to the passage, the student completed and self-corrected nine comprehension questions pertaining to the story. Before doing the second timed read, or the hot read,

each student practiced reading the passage to himself at least three times. The student was then allowed to do a hot read in an attempt to meet his words-per-minute goal. If the goal was met, the student graphed his score on the same bar graph, only this time, using a red colored pencil. If a student failed to meet his words-per-minute goal, he was allowed to practice reading the story to himself before attempting another hot read. Only the passing words-per-minute score was recorded on the bar graph. After the hot read score was recorded, the student chose any of the other reading passages and went through the steps again.

Though the students self-monitored their own progress, the researcher and the GLAD coordinator monitored student progress by giving one-minute timed reads to every intensive and strategic student every two weeks.

Treatment of the Data

The data was collected and organized into a color-coded spreadsheet. The intensive students were listed first, beginning with the lowest score, with

their scores highlighted in red. The strategic students were listed second with their reading scores highlighted in yellow. The rest of the students, or the benchmark students, were listed last, with scores highlighted in green.

The researcher used a t-test to compare the reading scores of the control and treatment groups, both in the winter and in the spring.

Summary

The researcher studied the impact of RTI on students' reading proficiency levels using an experimental study with a convenient sample.

The participants were eighth grade students, and those students who did not assess at benchmark were placed in a LAP reading class. Based on their reading scores the participants were further divided into two groups: strategic or intensive. The groups received instruction with either the Rewards reading program or the Read Naturally reading program. Toward the conclusion of the study, a posttest was administered to both the treatment group and the control group,

and a t-test was used to compare scores to determine if RTI had a positive, a negative, or no impact on the students' reading skills.

# CHAPTER 4

## Analysis of the Data

### Introduction

Schools across the nation saw an increased number of students who had insufficient reading skills. Consequently, various reading programs were implemented to increase student reading proficiency. If RTI did not increase student reading proficiency, the reading program needed to be reevaluated.

### Description of the Environment

The implementation of RTI took place in December of 2009, at the beginning of the second trimester. Within a six-period day, a class of nineteen eighth grade students met in a general education classroom during third period, between 9:46 a.m. and 10:43 a.m. In order to be a participant in RTI, the students were tested using AIMSweb. Based on the test results, the students were placed into three categories: intensive, strategic, or benchmark. The students who tested into intensive and strategic were placed into the RTI program. The lowest achieving group of students had a

different curriculum than the second-lowest achieving group, albeit, both groups were still in RTI; therefore, the former went to another classroom with a different instructor. The latter group stayed in the researcher's classroom.

Hypothesis/Research Question

Students needed to increase their reading fluency and comprehension skills to be successful in other classes and on state assessments. Does RTI increase reading fluency and comprehension?

Null Hypothesis

There was no significant difference between reading skills of those who engaged in RTI and those who did not engage in RTI. Significance was determined for $p \geq .05$, .01, and .001.

Results of the Study

All eighth grade students took the AIMSweb reading assessment in December to determine their respective reading score. If the students' reading score on the pretest was lower than 130, it was recommended that the student be placed in a LAP

reading class to receive instruction from either the Rewards reading program or the Read Naturally reading program.

As it were, 85 students took the pretest, but there were only 19 students who qualified to be in the experimental group, and 19 other students were chosen randomly to be in the control group and to compare scores. The range of scores totaled a difference of 824 words-per-minute; the treatment group scored 2087 and the control group scored 2911. The mean of the treatment group was 109.84 and the mean of the control group was 153.21. The difference was due to the inadequate reading skills of the students who qualified for intervention compared to the students with reading proficiency who did not qualify for reading interventions.

Table 1

AIMSweb Pretest Reading Scores

| Treatment Group Scores | Control Group Score |
|---|---|
| 59 | 137 |
| 77 | 162 |
| 74 | 151 |
| 106 | 158 |
| 110 | 143 |
| 103 | 143 |
| 112 | 156 |
| 116 | 160 |
| 116 | 133 |
| 117 | 164 |
| 120 | 156 |
| 112 | 168 |
| 122 | 158 |
| 129 | 167 |
| 127 | 144 |
| 116 | 147 |
| 127 | 161 |
| 123 | 155 |
| 121 | 148 |

The scores were entered into and computed by Statpak (Gay et al., 2009), a software program designed to compare data. A negative t-value indicated that the students in the treatment group performed considerably lower than the students in the control group. However, the question then regarded the t-value based on the posttest scores when the students were assessed a final time in June. Based on the posttest scores, the t-value was closer to zero than with the pretest scores, which meant that both treatment and control groups improved their reading proficiencies. However, the t-value from the posttest scores still indicated that the treatment group lacked proficiency when compared to the control group despite the additional reading instruction.

Table 2

Statpak Analysis for Pretest Scores

| Statistics | Values |
|---|---|
| No. of Scores in Group X | 19 |
| Sum of Scores in Group X | 2087 |
| Mean of Group X | 109.84 |
| Sum of Squared Scores in Group X | 235929 |
| SS of Group X | 6688.53 |
| Number of Scores in Group Y | 19 |
| Sum of Scores in Group Y | 2911 |
| Mean of Group Y | 153.21 |
| Sum of Squared Scores in Group Y | 447805 |
| SS of Group Y | 1809.16 |
| *t-value* | -8.70 |
| Degrees of freedom | 36 |

The researcher considered the gain scores of the students in each group, compared the scores, ran a t-test, and found that the t-value of the gain scores was much closer to zero.

After the researcher found the distribution of t, however, there was no significance, which meant that the null hypothesis was accepted: There was no significant difference between reading skills of those who engaged in RTI and those who did not engage in RTI. Significance was determined for $p \geq .05$, .01, and .001. Consequently, there was no support for the hypothesis that Response to Intervention (RTI) positively impacted student reading skills.

Table 3

Gain Scores

| Treatment Group | | | Control Group | | |
|---|---|---|---|---|---|
| Pre | Post | Gain | Pre | Post | Gain |
| 59 | 80 | 21 | 137 | 154 | 17 |
| 77 | 91 | 14 | 162 | 156 | -6 |
| 74 | 98 | 24 | 151 | 160 | 9 |
| 106 | 111 | 5 | 158 | 161 | 3 |
| 110 | 119 | 9 | 143 | 165 | 22 |
| 103 | 123 | 20 | 143 | 165 | 22 |
| 112 | 128 | 16 | 156 | 166 | 10 |
| 116 | 129 | 13 | 160 | 166 | 6 |
| 116 | 132 | 16 | 133 | 166 | 33 |
| 117 | 135 | 18 | 164 | 167 | 3 |
| 120 | 142 | 22 | 156 | 168 | 12 |
| 112 | 143 | 31 | 168 | 168 | 0 |
| 122 | 144 | 22 | 158 | 170 | 12 |
| 129 | 147 | 18 | 167 | 170 | 3 |
| 127 | 148 | 21 | 144 | 171 | 27 |
| 116 | 148 | 32 | 147 | 173 | 26 |
| 127 | 149 | 22 | 161 | 174 | 13 |
| 123 | 149 | 26 | 155 | 176 | 21 |
| 121 | 149 | 28 | 148 | 177 | 29 |

Note: $X_1 = 19.8$ $X_2 = 15.7$

When the gain scores were compared using Statpak (Gay et al., 2009), the researcher found that the treatment group outscored the control group by 110 words-per-minute. Two control group student scores were not utilized in the gain score comparison because one student score remained the same from her pretest score, and the other student actually decreased her number of words-per-minute score by six words.

The value of t was -8.70 when the pretest scores were compared between both groups of students. On the gain score comparison, however, the t-value was 1.48, which indicated that the students in the treatment group greatly enhanced their reading proficiency by receiving instruction in a reading program. Most of the students in the control group increased their reading proficiency as well, but their increases were not as profound, which suggested that the students in the control group may have improved due to maturation.

Table 4

Statpak Analysis of Gain Scores

| Statistics | Values |
|---|---|
| No. of Scores in Group X | 19 |
| Sum of Scores in Group X | 378 |
| Mean of Group X | 19.89 |
| Sum of Squared Scores in Group X | 8386.00 |
| SS of Group X | 865.79 |
| Number of Scores in Group Y | 17 |
| Sum of Scores in Group Y | 268 |
| Mean of Group Y | 15.76 |
| Sum of Squared Scores in Group Y | 5734.00 |
| SS of Group Y | 1509.06 |
| *t-value* | 1.48 |
| Degrees of freedom | 34 |

Significance was determined for $p \geq .05$, .01, and .001 (Gay et al., 2009). The calculated value of t, which was 1.48, was smaller than all three threshold values at .05, .01, and .001. Therefore, there was no significance; the hypothesis that students would improve their reading proficiency was not supported.

Table 5

Distribution of t

| | p | | |
|---|---|---|---|
| df | .05 | .01 | .001 |
| 34 | 2.042 | 2.75 | 3.646 |

Findings

The students who qualified for the LAP reading class based on their AIMSweb reading scores were significantly behind the students who met the benchmark standard.

Though students in both treatment group and control group increased their reading proficiencies, the distribution of the t-value did not show significance with either the posttest scores or the gain scores. As a result, the null hypothesis was accepted and the hypothesis was not supported.

However, the treatment group did surpass the control group in the sum of the gain scores. Therefore, the researcher found that RTI helped to improve reading proficiency despite the fact that the statistical data shows little to no impact.

Discussion

The researcher's expectations correlated with the gain scores made by the treatment group. The expectations of the other teacher involved, as well as the administrator/GLAD Coordinator, were fulfilled, as

well, because the time and effort put forth into implementing the program would not have warranted the belief in substandard results.

Steps in RTI duplicated some of the strategies that research showed to be effective in improving students' reading proficiency, such as teacher modeling, repeated reading, and progress monitoring.

The treatment group made noticeable gains in their abilities to read. The students' gains were considerably more than the gains made by the students in the control group, which suggested that RTI did have an overall impact on the students' reading proficiencies.

Summary

The students who did not meet reading benchmark standards were placed in a LAP reading class. In the LAP reading class the treatment group received additional reading instruction. When the treatment group's reading scores were compared with the reading scores of the control group, on both the pretest and the posttest, the Statpak analysis concluded no

significance as a result of RTI. Therefore, the hypothesis was not supported.

The only way that RTI rendered credibility was when the gain scores were compared between the treatment group and the control group at the conclusion of the study; the treatment group made greater gains than did the control group, which suggested that though there was not a significant impact, there was, indeed, profound improvement in the reading abilities of students.

# CHAPTER 5

## Summary, Conclusions, and Recommendations

### Introduction

Schools faced budget cuts due to an unstable economy. Consequently, there was a need for confirmation that RTI had a positive impact on students' reading abilities after the onset of the program's implementation. Without an increase in student reading abilities, time, money, and resources used would have been wasted, along with the notion that the students involved in the program probably fell even further behind in reading. If RTI improved student reading fluency and comprehension, RTI needed to remain in the school's curriculum. If reading scores showed little to no improvement, then the program required reevaluation.

### Summary

Schools around the nation reported abundances in reading deficiencies amongst their students. Various reading programs were adopted and implemented in an attempt to improve reading scores. The researcher

conducted an experimental study on the impact of RTI. The sample consisted of two groups: a treatment group and a control group, each of which had 19 eighth-grade students.

The students in the treatment group received reading instruction in a LAP reading class, in addition to the students' core English class. In the LAP class, the students were involved in either the Rewards reading program or the Read Naturally reading program.

The students who were randomly selected for the control group received only the standard reading instruction in their regular English classes.

After six months of reading intervention, a Statpak analysis revealed no significance in impact that RTI had on its treatment sample. However, the gain scores showed that the students who received the reading intervention improved their words-per-minute scores drastically when compared with the control group, who received no reading intervention in the course of the six months.

Conclusions

Ivey and Fisher (2005) noted that one of the few ineffective strategies that schools used, and continue to use, involved not giving students sufficient time to practice reading. Making students read difficult texts was another ineffective reading strategy, along with simply telling the students that they needed to understand everything they read.

The reading programs that corresponded with RTI had a number of positive strategies: An entire class period was utilized for struggling students to practice reading, the reading passages were brief and could be easily understood after practice, and there was no added pressure for the students to necessarily understand what they read.

Each student in the LAP reading class made noticeable gains by the end of the study. In fact, the sum of the gain scores made by the students in the treatment group totaled more than the sum of the gain scores made by the students in the control group, as shown in Table 4.

## Recommendations

The researcher recommends for educators an expectation that most students can and will increase their reading proficiency through maturation. The researcher also recommends reading interventions for those students who are not reading at grade level because this study has shown the drastic improvement students make when reading programs are implemented into the students' instruction in addition to the students' natural maturation.

The researcher also recommends that any reading program that is implemented into a curriculum is one with research that states the program's credibility and success rate in increasing student's reading skills.

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