

Response to Intervention in Reading Achievement  
of Fifth Grade Students

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A Special Project

Presented to

Dr. Gretta Merwin

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Master of Education

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## FACULTY APPROVAL

Response to Intervention in Reading Achievement of Fifth Grade Students

Approved for the Faculty

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## ABSTRACT

The purpose of the project was to determine the effectiveness of reading intervention using the Soar to Success program, as published by Houghton Mifflin Company, on fifth grade students identified as below grade level in reading achievement according to the Washington Assessment of Student Learning and/ or Measures of Academic Progress. Student achievement was measured by the computer-based Northwest Evaluation Association Measures of Academic Progress test in October 2008 and again in February 2009. Students selected for the study completed the pre and post tests and the raw scores were compared to the mean score of the pre and post tests of students who were not selected for the study.

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## CHAPTER 1

### Introduction

#### Background for the Project

Education reform had been an issue for education in the United States before the 2001 No Child Left Behind Act was signed by President George W. Bush. In 1983, a study which documented the condition of education in America was released by the National Commission on Excellence in Education. The report, *A Nation At Risk*, stated systematic reform was necessary for the United States to improve education levels and be competent in the global economy. Several education reform ideas were formed over the past 20 years as a result of the *Nation at Risk* report. Until 2001, the reform ideas were only held in infancy. One problem was resolving the suggestion the federal government should have increased control over what individual states considered reform (National Education Reform, 1994).

By 2001, reform at the state level went unfinished. After states attempted to improve educational changes, progress was not widespread. When the No Child Left Behind Act was signed into law in 2001, President Bush increased the amount of federal control over state-run education systems. The law focused on improving: literacy, teacher quality, mathematics and science instruction, English fluency, parental options, safe schools, technology, providing aid and encouraging freedom and accountability (No Child Left Behind, 2001).

Prior to the act of 2001, Washington State responded to the call for reform in 1993 as imposed by the Legislature in House Bill 1209. Standards were developed over time and became known as the Essential Academic Learning Requirements. The effectiveness of the new standards was measured with the criterion-referenced Washington Assessment of Student Learning in grades four, seven, and ten. The State Board of Education determined students graduating in the year 2008 would be the first to pass the new requirements.



The No Child Left Behind Act required students in grades three through eight to be tested annually and schools were required to make annual improvements or risk federal sanction (Partnership for Learning, n.d.). By 1997, Washington students in grades four, seven and ten were tested. The criterion-based Washington Assessment of Student Learning, in reading, writing, listening and mathematics, was used. Starting in 2004, the listening assessment was discontinued and science was implemented for students in grades eight and ten. In 2005, the science Washington Assessment of Student Learning was implemented at grade five and students in grade three were assessed in the areas of reading and mathematics.

In addition to Annual Yearly Progress requirements as imposed by No Child Left Behind, school districts were required to share annual results of school scores with parents and community members. The information was made available on the Office of the Superintendent of Public Instruction website under the heading of School Report Cards. Individual student scores were not available to the public; parents of students who took the assessment received notification of assessment results through the United States Postal Office.

The elementary school was located in Eastern Washington in a suburban area with agriculture and industrial waste rehabilitation as sources of economic support. In October 2008, there were 631 students enrolled in kindergarten to fifth grade. The ethnic makeup of the school was comprised of 1.0% American Indian/Alaska Native, 4% Asian, 0.5% Black, 6.0% Hispanic and 87.5% White. In May of 2008, the population of students who received free or reduced meals was at 10.8%. Special education students made up 11.5% of the school population. Transitional bilingual students made up 2.2% of the students, while no students were migrant learners. The unexcused absentee rate was 0.1% for the 2007-2008 school year (OSPI, Report Card, 2008).

## Statement of the Problem

According to the No Child Left Behind Act, literacy was of utmost importance. “States that establish a comprehensive reading program anchored in scientific research from kindergarten to second grade will be eligible for grants under a new Reading First initiative” (No Child Left Behind, 2001, p. 1). Federal monies were directly tied to the successful completion of tests. The goal was for all students to read at grade level by grade three. Previously, students who showed difficulty in reading in early grades did not receive additional supportive education unless the reading level was two grade levels below and many students were not helped by this method of selection for added support in areas of weakness. A 2006 article in Reading Research Quarterly noted:

The field of special education is confronting fundamental changes in how it defines and identifies its constituency; how those changes relate to theory, practice, and policy; and the precise role of special education in furthering learning and instruction. From a historical perspective, difficulty in learning to read has been perhaps the most prominent manifestation of the learning difficulties that occupy the attention of those in the field of special education. (Fuchs & Fuchs, p. 92)

The 2007-2008 Washington Assessment of Student Learning results for the school showed 83.6% of students in grade four passed the reading assessment. In grade five of the same year, 88.1% of the students passed the reading assessment, while 11.9% of the students did not pass the assessment (OSPI, Report Card, 2008).

In addition to the Washington Assessment of Student Learning assessment, another assessment was used by the district to monitor student achievement. The Northwest Evaluation Association developed a state-aligned assessment which provided enhanced student learning and monitoring. Educators who developed the tests wanted to have accountability

to “Measure the growth in each student’s academic achievement over time. Provide information that teachers could use to meet individual student needs. Give administrators data they could use to evaluate academic program effectiveness” (Northwest Evaluation Association, History, n.d., p. 1). The computer-based adaptive version was launched in 1986 in Oregon. By the year 2000, 17 thousand students took the Measures of Academic Progress tests (Northwest Evaluation Association, n.d.). The Measures of Academic Progress was a norm-referenced test.

The assessment provided the teacher with immediate results so interventions were implemented in a timely manner. Teachers used effective teaching intervention to improve student achievement in the area of literacy. The district purchased a published reading program which included research-based intervention materials.

#### Purpose of the Project

The purpose of the research project was to determine if interventions in literacy at grade five would positively impact student learning. Would 5<sup>th</sup> grade students, identified as below grade level in reading according to spring 2008 Washington Assessment of Student Learning guidelines, and/ or the fall 2008 Measures of Academic Progress tests, be able to make significant progress with literacy intervention using the Soar to Success program? Student scores on the Measures of Academic Progress taken in October 2008 and again in February of 2009 were used as the measure of progress. Scores were compared to the mean score of students not participating in the intervention study.

#### Delimitations

Twenty-eight fifth grade students were tested late in October 2008. The Measures of Academic Progress computer program was used. The Measures of Academic Progress was a norm-referenced assessment. The test took place during the regular school day with the regular classroom teacher as proctor. The students were provided with the proper test environment in

the school computer lab which held 30 computers. All computers were in working order. Students confirmed the correct test was shown on the monitor. There was not a time limit given. Students were given two hours in which to complete the test, however if more time was needed, students could return at another time and the test would be continued. Only 1 of the 28 students needed more time than was initially provided due to illness. This student was not part of the intervention process. There were 52 questions administered to each student. Students remained seated when finished and read silently until all students were completed. The students felt comfortable taking the assessment in the computer lab. All of the classroom students were tested in the computer lab at the same time. After results were acquired, 5 of the 28 students were identified as needing intervention in reading.

### Assumptions

Teachers in previous grade levels were highly qualified to teach the grade level. The teachers knew the grade level expectations as determined by the Washington state standards. Students received reading instruction in grades K-4. The Measures of Academic Progress reading assessment tool was appropriate for grade five students. The proctor was knowledgeable about administration of the tool.

### Research Question

Would 5<sup>th</sup> grade students, identified as below grade level on the Washington Assessment of Student Learning from student's spring of 4<sup>th</sup> grade scores and/ or fall of 5<sup>th</sup> grade Measures of Academic Progress scores, show growth with literacy intervention using the Soar to Success program when compared to the growth of their peers who were already at or above grade level in October and did not receive the intervention?

### Significance of the Project

Reading had been determined to be an important foundational skill for all learning.

Students lacking grade five reading skills were at risk of failure in other areas of learning.

Interventions supplied to students below grade level had the potential for significant positive impact because the Measures of Academic Progress assessment system provided timely feedback which was used for corrective intervention. Students who did not receive timely corrective interventions had the potential to perform below grade level which had a negative impact on future learning. Intervention at the upper elementary grade levels was essential. Little reading instruction was provided after grade five. At grade 10, all students were required to pass the Washington Assessment of Student Learning in order to receive a diploma.

#### Procedure

Of the 28 students tested, 5 students were determined to be below grade level and participated in the research. In October 2008, fifth grade students were administered the Measures of Academic Progress computer-based assessment. Below grade five reading level for fall 2008 was determined to be <204 as measured by the Rasch Unit score. Students used the computer mouse to select from multiple choice answers displayed on the monitor on individual computers in the school computer lab. All students received the same instruction prior to being tested.

No assistance was allowed from the proctor once the testing began. The assessment was not timed. Results were available on the same day as the administration of the assessment. Students who performed below fifth grade level were entered into a schedule of intervention using district purchased published materials. Students received intervention from October 2008 to February 2009. The administrator of the intervention was trained to use the materials as published. In February 2009, students were retested on the Measures of Academic Progress computer-based assessment. Scores of the pre and post assessment were analyzed using raw score data which were then compared to the mean scores of students in the same classroom who

did not receive intervention.

### Definition of Terms

comprehension. Comprehension measured how accurately a student understood what was read.

criterion-referenced assessment. Criterion-referenced assessment measured how accurately a student responded to test questions; had a benchmark to be reached in order to pass.

fluency. Fluency measured the speed, accuracy and intonation of oral reading.

intervention. Interventions were small group or individual student instruction which focused on a specific skill needed to be a successful reader.

norm-referenced assessment. A norm-referenced assessment compared each student score with a group of same grade students.

Rasch Unit. The measurement scale was divided into equal parts which measured student achievement levels with item difficulty, named for statistician George Rasch.

### Acronyms

MAP. Measures of Academic Progress.

NRP. National Reading Panel.

NWEA. Northwest Evaluation Association.

OSPI. Office of Superintendent of Public Instruction.

RIT. Rasch Unit.

WASL. Washington Assessment of Student Learning.

## CHAPTER 2

### Review of Selected Literature

#### Introduction

Literature selections for the study were pertinent to the problems found in reading achievement and reform of special education students' identification and effective reading intervention models was found to be significant. The National Reading Panel which reviewed available research related to reading was discussed. Change in the focus of expected student achievement in reading and discussion of reading curriculum used in the school to improve student achievement were important.

#### National Reading Panel

The National Reading Panel conducted a series of analyses on existing research to find out if there was an overwhelming conclusion regarding whether or not specific elements of reading teaching was more successful, and if there was overwhelming evidence, how the strategies should be circulated.

The National Reading Panel, formed in 1997, was the result of Congressional request, and consisted of 14 people, which included education specialists, research scientists and parents. Originally, Congress wanted the work completed in 1998, but the task was too large and the National Reading Panel received permission to extend the deadline. The report did not specify a final date for publication.

Before selected topics were researched a series of regional and community meetings were held to determine which reading elements should be studied. Information from parents, students, and teachers was gathered. Specific topics of reading were determined to be focal points, though not all aspects of reading were analyzed because the scope was too large. Several sub-committees were formed. The fields of study were narrowed to phonemic awareness, phonics,

fluency, vocabulary, comprehension, teacher preparation and professional development, and there was a short statement on technology.

After the selection of topics was chosen, the methodology of the analyses followed stringent guidelines similar to guidelines used for medicine and psychiatry research. Research that did not follow the scientific method was excused from the analysis, except in cases where exclusion resulted in too few items. When available research in a specified category failed to have adequate numbers, the reading research reports were analyzed individually. The National Reading Panel did not allow reading research reports that focused on English Language Learners or reports specific to learning disability as that was not the main focus of the study.

The National Reading Panel started with a source discovery period in which published research reports were selected according to the topic guidelines. After selection, reading research was analyzed according to specific questions on which the National Reading Panel had decided to focus. A sub group of panelists was formed for each theme. The findings of the sub committees were gathered into a report which was delivered for publication (National Institute of Child Health and Human Development, 2002).

In the area of phonemic awareness, understanding the smallest meaningful sound in the English language, the National Reading Panel found abundant research. After review and analysis, committee found phonemic awareness training had significant positive impact on student achievement in reading and spelling. The National Reading Panel concluded, “Importantly, the effects of phonemic awareness instruction on reading lasted well beyond the end of training” (National Institute of Child Health and Human Development, 2002, p. 7).

In addition to phonemic awareness, teaching of phonics, letter-sound agreement had much research available which was analyzed. The National Reading Panel concluded “...systematic phonics instruction produces significant benefits for students in kindergarten



through 6<sup>th</sup> grade and for children having difficulty learning to read” (National Institute of Child Health and Human Development, 2002, p. 9).

Available reading research on fluency was narrowed by the stringent methodological guidelines formed by the National Reading Panel. The National Reading Panel determined, “Fluent readers are able to read orally with speed, accuracy, and proper expression” (National Institute of Child Health and Human Development, 2002, p.11). Fluency instruction analysis was divided into two strategies commonly used in classrooms, guided oral reading with feedback and silent independent reading without feedback. One sub committee of the National Reading Panel focused on the following question in regard to fluency: “Does guided oral reading instruction improve fluency and reading comprehension? If so, how is this instruction best provided?” (National Institute of Child Health and Human Development, 2002, p. 3).

Fluency research studies which followed the allowed methodology were included in the analysis. The National Reading Panel confirmed, “Guided repeated oral reading procedures that included guidance from teachers, peers, or parents had a significant and positive impact on word recognition, fluency, and comprehension across a range of grade levels” (National Institute of Child Health and Human Development, 2002, p. 12). However, the National Reading Panel also reported holes in long-term studies that showed positive associations between guided oral reading and fluency. The National Reading Panel also released the finding that independent silent reading was not shown to be effective in increasing fluency when used as the only means students used to improve fluency, especially if the students lacked other reading skills. The National Reading Panel was careful to point out that independent silent reading was not found to be unbeneficial, but the correlation studies between increased time spent reading and increased fluency was not evidence of the cause of the increase.

Of the 50 studies used for analysis in vocabulary instruction, 21 different methods were cited in the research. Consequently, the National Reading Panel did not find significance in one method. The National Reading Panel did, however, find “vocabulary instruction does lead to gains in comprehension, but that methods must be appropriate to the age and ability of the reader” (National Institute of Child Health and Human Development, 2002, p. 14).

Comprehension was defined as “intentional thinking during which meaning is constructed through interactions between text and reader” (National Institute of Child Health and Human Development, 2002, p. 14). The area of comprehension yielded only four methodologically acceptable research studies to include in the analysis of effective reading practices. Therefore, the data was not used for meta-analysis by the National Reading Panel, and each was reviewed in depth. The National Reading Panel recognized 16 comprehension strategies which had value, of which only seven strategies were used individually which increased student comprehension. The National Reading Panel concluded, “Data from all four studies indicated clearly that in order for teachers to use strategies effectively, extensive formal instruction in reading comprehension is necessary” (National Institute of Child Health and Human Development, 2002, p. 15). Analysis in the area of teacher education provided information that, in general, students benefited from teachers who had professional development in reading instruction as compared to pre-service teachers.

The National Reading Panel also made a few remarks regarding the use of technology for reading achievement, but concluded more quality research should be conducted given the improved availability of technology and program availability before conclusive evidence was presented and recommendations were made. The report concluded with comments for further consideration for future research and analysis to be conducted. Included were the methodology used in preparing the report and resources used.

## Introduction to Response to Intervention: What, why, and how valid is it?

In D. Fuchs and L. Fuchs' (2006) article, *Introduction to Response to Intervention*, several suggestions were reported regarding the areas of concern between two intervention models versus the IQ-achievement discrepancy model for identifying learning disabled students. Selected at risk students were identified by two different methods. The first method looked at all students' performance on the previous year's tests and chose a cut score to assign risk. Students who performed below a specific percentile rank were selected to receive reading intervention. Another means used to identify students who did not perform well was to test all students in the current school year and identify students who performed below expectations from the grade level norm.

After students were identified progress monitoring continued to discover students who responded to regular classroom instruction and those who did not. Fuchs and Fuchs (2006) argued that a better method for measure was to compare student assessment scores to both national norms and criterion-based assessment expectations to identify weekly growth.

Students who did not meet expected growth in the regular classroom were provided with Tier 2 instruction which was more intense than regular classroom instruction and was delivered either inside or outside of the classroom setting. Monitoring progress was a major part of intervention. Teachers administered frequent assessments to monitor and identify needed changes in materials, or instructional procedures (Fuchs & Fuchs, 2006). Response to Intervention increased in intensity. Fuchs and Fuchs (2006) proposed the multi-tiered model which included four aspects: "... (a) using more teacher-centered, systematic, and explicit (e.g., scripted) instruction; (b) conducting it more frequently; (c) adding to its duration; (d) creating smaller and more homogenous student groupings; or (e) relying on instructors with greater expertise" (p. 94).

Two approaches existed for intervention delivery. One was a problem solving approach. This model was used by many districts. When the problem solving approach was used, teachers “determine the magnitude of the problem, analyze its causes, design a goal directed intervention, conduct it as planned, monitor student progress, modify the intervention as needed,...and evaluate its effectiveness and plot future actions” (Fuchs & Fuchs, 2006, p.2). In order for this model to be most successful, teachers were highly trained and knowledgeable about reading methods.

The other approach followed a standard treatment protocol model. Second grade students received 30 minutes of one to one intervention five days a week with no alteration in delivery based on student need. The intervention sessions focused on phonemic awareness, decoding, sight-word practice, comprehension strategies and reading connected text. Most students who received intervention made progress enough to be comparable to peers in the same group. Vellutino, Scanlon, Sipay, Small, Chen, Pratt et al., (1996), as cited in Fuchs and Fuchs (2006) article, concluded these students were not learning disabled, but instead instructionally disabled. This held great implication for the instructional strength of the instructor and method used to remediate students below grade level.

Response to Intervention assessment had two purposes. One provided students with effective instruction and the other provided an assessment of student need. Fuchs and Fuchs (2006) proposed, “A principle means of demonstrating the validity of intervention-as-test is by using evidence-based interventions and by ensuring that, in each instance, they are implemented with fidelity” (p. 95). Of the two models proposed, Fuchs and Fuchs viewed the standard treatment protocol to be more sound because of the opportunity provided to instructors for continuity, though the authors admitted more research was needed in the area of problem solving and the measured validity comparison of each model.

A major motivator for moving to a Response to Intervention model, whether delivered with a problem solving approach or research protocol method, was money. Special Education budgets soared as more and more students were identified as learning disabled as a result of the 1975 Education of All Handicapped Children Act. Prior to the Act, only two percent of students were identified as learning disabled. After learning disability was included in the Act, with the accompanying testing implementation, six percent of the population was identified by the year 2000. Districts paid more money to educate students identified as learning disabled than for students without disability (Fuchs & Fuchs, 2006).

Fuchs and Fuchs (2006) asserted that because the IQ-achievement model was not based on research, two key problems arose. Students who lacked grade level achievement fell two years behind their peers before students received additional help from teachers or other providers. Fuchs and Fuchs also reported “so-called children with LD is presumed to reflect disability when, more times than not, it reflects poor teaching” (p. 96).

Several outcomes were possible with differing intervention assessment and delivery. One outcome of standard protocol, with highly structured delivery, was a true positive result in which students were identified as truly learning disabled after exposure to systematic intervention. Another result was false negative. Students, who received systematic intervention by teachers with high quality training, were tested out of the program. However, upon the return to regular classroom teaching, the students failed to make gains. Problem solving, which was less rigid in delivery and pacing, posed an opposite effect; problem solving was less likely to identify false negatives and more likely to identify false positives; students appeared non-responsive to classroom instruction but with additional help were found not unresponsive. Upon reflection Fuchs and Fuchs (2006) posed the following: “Is it more desirable to err by identifying more false negatives (standard treatment protocol) or by identifying more false positives (problem

solving)” (p. 96)? Assessments were used for different purposes; one to identify students who needed additional help, and the other to identify students who benefited from prevention. Fuchs and Fuchs believed both had merit when student achievement was considered.

### A Study of the Effectiveness of an Intervention Program Designed to Accelerate Reading for Struggling Readers in the Upper Grades

J. David Cooper from Ball State University in Muncie, Indiana, provided an introduction to the research behind the Houghton-Mifflin Soar-to Success Reading Intervention Program. The report outlined the study of the effectiveness of intervention strategies for upper elementary readers. Project Success was designed by researchers who summarized what was known about characteristics of struggling readers above grade three, and researched information that brought about success in primary grades, including effective instructional strategies, and effective materials for upper grade students. Researchers at Project Success found the focus of students that needed intervention should focus “on the application of decoding skills... and on developing comprehension” (Cooper, McWilliams, Pistochini, & Boschen, 2001, p. T4). Intervention that was fast paced and structured was found to be beneficial. Scaffolding, reciprocal teaching and graphic organizers were also found to be of benefit. Authentic literature, sequenced from easy to complex, was also found appropriate (Cooper et al., 2001, p. T4).

The intervention model was initially field tested by two teachers at fourth grade. The gains were impressive. Cooper decided that the program should be tested in a more controlled manner. Participants in the 1996 International Reading Association conference were invited to submit requests to participate in the program. Thirteen sites, which included 24 schools, submitted plans acceptable to the researchers (Cooper et al., 2001, p. T4).

The report identified two instruments used to pre and post test students in September and March, respectively. Teachers were given two days of intense instruction on the intervention

model. The model included revisiting previous readings for five minutes, reviewing and discussing strategies used for five minutes, rehearsing new material (set purpose for reading) for five to ten minutes, reading and reciprocal teaching for fifteen minutes, and responding or reflecting for five minutes. The model was followed for each of the 40 minute sessions. Students received intervention 40 minutes per day for four or five days. The results were generalized to fourth grade students because the geographic diversity of the participants was varied (Cooper et al., 2001, p. T5).

Two research questions were targeted. The first asked if there were differences in reading achievement between the test group and control group. The second asked if there were differences in scores of students that received intervention within the class or as a pull out model. To answer the first, reciprocal teaching was found to be critical to the achievement of students. “This instructional strategy results in relatively large gains in reading comprehension for students in a short amount of time” (Rosenshine & Meister, 1994, as cited in Cooper, 2001, p. T6). Another area of gain was in oral reading achieved through clarifying and revisiting components of the model.

The second question was found to have no significant effect whether students received intervention within or outside of the regular classroom setting. Also, no significant differences were found in relation to the time delegated to instruction by location. Extended day teachers were found to devote more time to instruction. Cooper found that classroom teachers were more likely to skip small group instruction due to daily demands and advised that more research was needed.

Once students were placed in the program, teachers found it difficult to exit students as planned. Students appeared to need support time even though students had reached the criteria for exiting the program. Participants of the study scored higher than the control group and

motivation remained high for the study group. Teacher education was found to be paramount to successful implementation of the model. Continued coaching throughout the program contributed to teacher effectiveness. Teachers needed to respond favorably to the structure and fast pace of the instruction. Cooper and the researchers involved with the Project Success program model concluded intervention was possible to assist struggling students in upper grades to improve reading achievement (Cooper et al., 2001).

### Summary

In the process of accumulating and analyzing research regarding effective teaching and learning strategies in reading, the National Reading Panel identified several areas in which student learning was important. Areas identified as critical to reading, and therefore included in the research analysis, were in phonemic awareness, decoding, fluency and comprehension. Teacher instruction was found to be significant for student achievement or lack thereof, but there was no conclusive evidence of one strategy being more effective than another.

Research indicated intervention was needed to improve reading achievement for students in upper elementary grades. Fuchs and Fuchs (2006) found that changes in the identification process for learning disabled students impacted the reasonableness of intervention for struggling students rather than waiting for failure. Previous to the early intervention model, student instruction did not necessarily accommodate student need. Many times students fell two years behind in reading skills before receiving services for the deficit. This strategy had a negative impact on student achievement, especially at the intermediate elementary level.

The Project Success model was found to be effective when used for intervention with students in upper elementary grades. Using the structured model which included revisiting, reviewing, rehearsing, reading and reciprocal teaching, and responding or reflecting produced positive results in the research conducted by J. David Cooper and Janet McWilliams. Houghton



Mifflin used the model to design the intervention program Soar to Success which was published with regular classroom materials. The researcher's school district purchased Houghton-Mifflin materials to assist student achievement in reading. The materials were used as the intervention strategy for the identified students. (Cooper et al., 2001).

## CHAPTER 3

### Methodology and Treatment of Data

#### Introduction

A group of fifth grade students, identified as below grade level in reading, received reading intervention using a published, research-based program specific to upper elementary learners. A mixed methods research design was conducted. In the study, pre and post-test raw scores were used to distinguish if there was significant growth in selected students' reading scores as measured by Northwest Evaluation Association Measures of Academic Progress computer-based test. These scores were compared to the mean score of progress made by students in the classroom who did not receive the intervention program in reading.

#### Methodology

A modified QUAN-Qual model was used for the study. The model combined quantitative and qualitative methods and was also referred to as the “explanatory mixed methods design” as described in Gay, Mills and Airasian, (2006, p. 491). In the design, a quantitative study was conducted and analyzed and in the explanatory section the researcher interpreted the quantitative data with inferences, anecdotal information and reasoning. Gay, Mills and Airasian (2006) also stated, “This study or phase is comprised of qualitative data collection, analysis and interpretation. The researcher can then use the qualitative analysis and interpretation to help explain or elaborate on the quantitative results.” (p. 491). Research was conducted to determine if there was improved reading comprehension after students had received reading instruction using the Soar to Success reading intervention program.

#### Participants

The five participants in the study were fifth grade students from the researcher's classroom identified as below grade level in reading per the fourth grade WASL in the spring of

2008 and/or the MAP in the fall of 2008. The fourth grade WASL score for passing reading in spring of 2008 was 400. The MAP passing score for reading in fall of 2008 for fifth grade was >204. Four of the students were male, one was female, and all were Caucasian with English as the primary language.

Student A scored 400 on the WASL in the spring of 2008, but scored below grade level at 193 on the MAP test in the fall of 2008. Although 400 was a passing score on the WASL, it was the lowest score to pass and because the fall MAP score measured well below grade level, Student A was included in the study. Student B scored 397 on the WASL in spring 2008 and 207 on MAP in fall 2008. Although Student B scored at grade level on the MAP in the fall, WASL scores indicated below grade level and Student B participated in the study. Student C scored 417 on the spring 2008 WASL, but only scored 201 on the fall 2008 MAP and therefore was included in the study. Student D scored 381 on the spring WASL and 193 on the fall MAP and was included in the study. Both scores for Student D were well below grade level. Student E scored 391 on the spring WASL and 209 on the fall MAP. Even though the fall score was at grade level, Student E was included in the study because of the below grade level score in the spring. The intervention program Soar to Success was delivered between October 2008 and February 2009.

### Instruments

The instruments used for the study were the Washington Assessment of Student Learning, which was used for the purpose of identifying students below grade level to participate in the study, and the computer-based Measures of Academic Progress assessment which was used to identify students below grade level in fall 2008 and to conduct the pre and post tests needed to measure progress. The Washington Assessment of Student Learning was a paper and pencil criterion-based test which included both multiple choice and open-ended answers. The Measures

of Academic Progress was a self-leveling, multiple-choice test taken on a computer.

According to the Office of Superintendent of Public Instruction, which mandated the use of the Washington Assessment of Student Learning, “Valid scoring means that a scorer assigns the same score to a student response as would be assigned by an expert panel of Washington educators. Reliable scoring means that different scorers consistently assign the same score to a student response” (OPSI Assessment/Testing FAQ, 2009). Several measures were in place to make certain of the reliability and validity of the spring 2008 reading assessment. Item-by-item scoring was used to ensure that scorers were trained on each item of the test. Scorers were trained to consistently determine accurate scoring. Reading scorers rotated through only two or three different open-ended questions so that scorers were familiar with all of the possible responses and the appropriate score was assigned to the student response. One out of 20 of all student responses to open-ended questions in reading were double-scored. Scoring supervisors also read at least 5% of the papers scored daily to double check scorer reliability. Blind validity papers were added to double check scorer ability and results of accuracy were reported to the scoring supervisor. If any responses were unique and questionable, a scoring director made the decision as to the appropriate score and scorers were trained to include the new information into their scoring technique. And finally, Office of Superintendent of Public Instruction representatives were present during the scoring to monitor and or assist the company contracted to score the assessments (2009).

According to the 2004 Northwest Evaluation Association reliability and validity data, MAP tests in reading at fifth grade are both reliable and valid:

NWEA calculated the marginal reliability coefficient. The marginal reliability coefficient was the result of combining measurement error estimated at different points on the achievement scale into a single index. This method of calculating internal

consistency yielded results that were nearly identical to the coefficient alpha (p. 2).

Content validity of NWEA tests was assured by carefully mapping existing content standards from a district or a state into a test blueprint. Most of the documented validity evidence for NWEA tests came in the form of concurrent validity. This form of validity was expressed in the form of a Pearson correlation coefficient. A strong relationship was indicated when the correlations were in the mid 80s (p. 3).

### Design

In the design, a quantitative study was conducted and analyzed in the explanatory section. The researcher interpreted the quantitative data with inferences, anecdotal information and reasoning. Gay, Mills and Airasian (2006) also stated, “This study or phase is comprised of qualitative data collection, analysis and interpretation. The researcher can then use the qualitative analysis and interpretation to help explain or elaborate on the quantitative results.” (p. 491).

### Procedure

Students received intervention instruction from a qualified educational assistant for 30 minutes a day, four days a week, during the study. The intervention program, Soar to Success, a publication of Houghton Mifflin, followed strict guidelines for delivery which were followed by the educational assistant. The intervention program called for revisiting previous readings for five minutes, reviewing and discussing reading strategies used for five minutes, rehearsing new material for five to ten minutes, reading and reciprocal teaching for fifteen minutes, and responding or reflecting for five minutes. All students receiving intervention received the same instructions and lesson delivery at the same time. Students met as a group with the educational assistant in the hall at an instructional table. Each student had individual reading books and work books to use during the lessons. The hallway in the school was designed to be a learning

area. Intervention instruction was in addition to regular classroom reading instruction provided by the classroom teacher. Data was collected in the spring of 2008 using the WASL, and also in the fall 2008 using the MAP scores. Benchmark scores indicating below fifth grade level achievement were used to determine placement in the intervention study.

### Treatment of the Data

In the modified mixed method QUAN-Qual design, raw achievement scores for students A, B, C, D, and E from the diagnostic fall 2008 MAP and progress winter 2009 MAP were compared to the mean score of the remaining 23 students in the classroom who did not receive intervention for the same time period. The central tendency score was calculated using standard mathematical procedure of adding all scores and dividing the result by the number of scores. According to Gay, Mills and Airasian (2006), "In general, the mean is the preferred measure of central tendency" (p. 307). A standard calculator was used to input the 23 students' scores to determine the mean. The range of progress of individual students A, B, C, D and E was calculated using simple subtraction. Raw RIT scores from fall were subtracted from winter MAP RIT scores to indicate progress. The range of progress of students A, B, C, D, and E were then compared to the mean of the remaining students.

### Summary

Students were identified as at risk readers by the WASL and MAP. Five students who fell below benchmarks for fifth grade were grouped together and received Soar to Success reading intervention for upper elementary students. Students received intervention instruction from a qualified educational assistant for 30 minutes a day, four days a week, during the study. The intervention program, Soar to Success, followed strict guidelines for delivery which were followed by the educational assistant. The intervention program called for revisiting previous readings for five minutes, reviewing and discussing reading strategies used for five minutes,

rehearsing new material for five to ten minutes, reading and reciprocal teaching for fifteen minutes, and responding or reflecting for five minutes. All students receiving intervention received the same instructions and lesson delivery at the same time. Students met as a group with the educational assistant in the hall at an instructional table. Each student had individual reading books and workbooks to use during the lesson.

Data, collected from MAP scores in October and February, was used to determine student progress. Raw RIT scores were compared to the mean of the 23 students in the same classroom who did not receive intervention.

## Chapter 4

### Analysis of the Data

#### Introduction

Reading was determined to be important for student success in learning. Research was conducted to determine if the Soar to Success reading intervention program was successful in increasing student achievement at the upper elementary level for students who performed below grade level expectations on the WASL and/or MAP assessments. MAP assessments were conducted in October 2008 and again in February 2009. Achievement for 5 student participants was determined using the raw RIT scores from the MAP assessment. These scores were compared to the mean increase of non-participants in the same classroom. Data showed that 4 of the 5 participants improved reading comprehension.

#### Description of the Environment

Twenty-eight fifth grade students were tested late in October 2008. The Measures of Academic Progress computer program was used. The Measures of Academic Progress was a norm-referenced assessment. The test took place during the regular school day with the regular classroom teacher as proctor. The students were provided with the proper test environment in the school computer lab which held 30 computers. All computers were in working order. Students confirmed the correct test was shown on the monitor. There was not a time limit given. Students were given two hours in which to complete the test, however if more time was needed, students could return at another time and the test would be continued. Only 1 of the 28 students needed more time than was initially provided due to illness. This student was not part of the intervention process. There were 52 questions administered to each student. Students remained seated when finished and read silently until all students were completed. The students felt comfortable taking the assessment in the computer lab. All of the classroom students were tested



in the computer lab at the same time. After results were acquired, 5 of the 28 students were identified as needing intervention in reading.

### Research Question

Would 5<sup>th</sup> grade students, identified as below grade level on the Washington Assessment of Student Learning from student's spring of 4<sup>th</sup> grade scores and/ or fall of 5<sup>th</sup> grade Measures of Academic Progress scores, show growth with literacy intervention using the Soar to Success program when compared to the growth of their peers who were already at or above grade level in October and did not receive the intervention?

### Results of the Study

Student A had a RIT score of 193 on the fall MAP in October 2008 and a score of 203 in February 2009, an increase of 10 points using the RIT scale. Student B had a RIT score of 207 on the fall MAP in October and a score of 213 in February 2009, an increase of 6 points on the RIT scale. Student C had a RIT score of 201 on the fall Map in October 2008 and a score of 214 in February 2009, an increase of 13 points on the RIT scale. Student D had a RIT score of 193 on the fall MAP in October 2008 and a score of 203 in February 2009, an increase of 10 points using the RIT scale. Student E had a RIT score of 209 on the fall MAP in October 2008 and a score of 202 in February 2009, a decrease of 7 points using the RIT scale. The mean RIT growth for students who did not participate in the study was 0.87 points. The expected growth for the time period was 3 RIT points according to the graph provided by the school district.

Table 1.

<u>Participant</u>	<u>Fall 2008</u> <u>RIT score</u>	<u>Winter 2009</u> <u>RIT score</u>	<u>Difference in</u> <u>RIT score</u>	<u>Mean RIT Growth</u> <u>score of students not</u> <u>receiving intervention</u>	<u>Difference of mean</u> <u>score compared to raw</u> <u>RIT of students</u> <u>receiving intervention</u>
Student A	193	203	+ 10	0.87	9.13
Student B	207	213	+6	0.87	5.13
Student C	201	214	+13	0.87	12.13
Student D	193	203	+10	0.87	9.13
Student E	209	202	-7	0.87	-6.13

Findings

Four of the 5 fifth grade student participants in the Soar to Success literacy intervention program showed growth from October to February. Twenty-three students who did not participate in the study had a mean growth of 0.87 RIT points. Participants A, B, C, and D’s growth ranged from 5.13 to 12.13 RIT points. Student E showed a reversal of growth by 6.13 RIT points. Students B and C were now at grade level in reading achievement. Students A and D moved from being more than 6 months behind in reading achievement to being less than 6 months behind, and were within 5 points of being at grade level. Student E measured less than 6 months behind. The analysis of the students who were at or above in reading achievement showed that growth slowed for students at grade level, above grade level, or in the gifted range of the expected levels.

Discussion

The analysis of the data indicated the Soar to Success reading intervention program significantly increased student achievement when students were behind expected reading

achievement levels. According to Cooper (2001), the model included revisiting previous readings for five minutes, reviewing and discussing strategies used for five minutes, rehearsing new material (set purpose for reading) for five to ten minutes, reading and reciprocal teaching for fifteen minutes, and responding or reflecting for five minutes. The model was followed for each of the 40 minute sessions. Students received intervention 40 minutes per day for four or five days. This system worked for 4 of the 5 student participants of the study.

Limitations could have included that all classroom students had an opportunity to guess correctly or incorrectly if uncertainty was present as students completed the multiple choice options on the MAP test in either October or February. That may have explained the case of Student E who showed a significant drop in his MAP score over the course of the intervention. If Student E guessed correctly in October, but attempted to actually answer the questions based on knowledge in February, the February scores may indicate true ability level. However, if Student E did well in October because he was excited for the beginning of the year and put forth his best effort, that score may have been more accurate. If Student E was tired of testing, didn't care about the results or was having an off day, the February scores may not have been accurate. Because student E's WASL scores showed that he was below grade level, the researcher was inclined to conclude that more evaluation of this student's ability was in order before a true assessment was reached. This could have been true of any of the students; however since 4 of the 5 showed improvement, it was more likely that Students A, B, C and D's scores were an accurate assessment of ability level.

Attitude toward being in a special group could have also impacted student achievement. Student A was still below grade level by less than 6 months, but had a positive attitude toward reading and gained 10 points. Student A struggled with connecting to the text, which interfered with comprehension; he was more likely to get off task and talk about his own life instead of

learning from reading and connecting with the text. Often Student A behaved as though the reading intervention time was free discussion time. Student B had a truly positive attitude about working toward improving reading achievement but only improved by 6 points, the least of students who showed progress. Reading had been an ongoing struggle for Student B throughout the elementary years and he was eager to get to grade level, which was accomplished. Student C showed pride in reading and gained the most points of all of the participants in the intervention class. Student C also reached grade level. Even though Student D voiced serious negative concern about being in a special class and having to leave the classroom daily, he improved by 10 points. Although Student D did not reach the grade level benchmark, he did improve from being seriously behind, more than 6 months, to being within 6 months of reaching the grade level benchmark. Both Students A and D were within 5 points of being at grade level.

Another issue of concern was the low mean score achieved by the students who did not receive intervention. Low achievement from the non-participant group was unexpected. Sixteen of the non-participants scored above grade level in October, and 19 scored above grade level in February. As stated previously, it was harder for students at or above grade level to show remarkable progress.

### Summary

Analysis of the data showed that the Soar to Success program, when delivered by a trained professional on a daily basis, could improve student achievement in reading comprehension; thus the research question was answered positively. Findings were supported with data from the study conducted by the researcher. Data was shown in table form for the reader to comprehend the treatment of the data. Findings were discussed. The discussion addressed individual student idiosyncrasies that may have had an influence on the results, as well as test delivery limitations.

## Chapter 5

### Summary, Conclusions and Recommendations

#### Introduction

The purpose of the research project was to determine if interventions in literacy at grade five would positively impact student learning. The modified QUAN-qual model was used to determine the impact of literacy intervention for fifth grade students who participated in the Soar to Success intervention program. Research was conducted from October 2008 to February 2009.

#### Summary

Reading was determined to be important to the successful learning achievement of all students. The problem was that some students in the upper elementary grades were not reading at grade level. The purpose of the project was to determine if the Soar to Success intervention program would improve student achievement for fifth grade students who were not at grade level in reading. A review of current literature was conducted which included the National Reading Panel report of 2001, which was conducted because student achievement in reading was lacking, Fuchs and Fuch's 2006 article regarding the need for early intervention, and research reviewed by Cooper in 2001 indicating appropriate and effective teaching strategies for students in upper elementary grades. The methodology for delivery of the Soar to Success intervention program was explained and the 5 participants in the research were defined. The instruments, WASL and MAP, were examined for validity and reliability; each was found acceptable. The research question was answered using a modified QUAN-Qual design used to analyze and explain the results of the data. The findings indicated that the Soar to Success program was generally successful in improving participant achievement in reading.

## Conclusions

The National Reading Panel conducted a research project to determine if one strategy was most effective for teaching reading in the areas of phonemic awareness, phonics, fluency, vocabulary, and comprehension. The findings of the National Research Panel were that many effective strategies for teaching reading existed, especially at the primary level. After the 1975 Education of All Handicapped Children Act, which found a 4 % increase in learning disabilities with the implementation of the IQ discrepancy identification system, students who lacked grade level achievement fell two years behind their peers before students received additional help from teachers or other providers. In 2006, Fuchs and Fuchs determined a more effective approach was to intervene earlier and that students who fell behind in reading achievement should be identified based on norm and criterion tests rather than the two year IQ discrepancy model.

J. David Cooper studied the effectiveness of intervention strategies for upper elementary readers. Project Success was designed by researchers who summarized what was known about characteristics of struggling readers above grade three. Information that brought about success in primary grades including effective instructional strategies and systematic reading instruction was integrated with effective materials for upper grade students. These researchers also determined that there was no significant effect whether students received intervention within or outside of the regular classroom setting. The Soar to Success program, which was based on the Project Success model, was used as the intervention method. Four of the 5 participants in the study showed improvement in reading achievement ranging from 6 to 13 RIT points. One participant's score fell 7 RIT points; an explanation of the decrease was included in the discussion. The mean RIT score for non-participants was 0.87. The normal expectation of growth during the research time period was 3 RIT points.

## Recommendations

Based on the positive results of the data, the researcher recommends continued use of the Soar to Success program as an effective intervention program for students in upper elementary grades that are behind in reading. However, some issues must be addressed when implementing the program. Identification of participants can vary depending on the source of testing information that determines reading level. The instructor should be qualified and trained in the delivery model to ensure quality teaching and learning. The question whether or not the program should be delivered inside or outside the classroom should also be considered. The researcher recommends that a larger sample be used; perhaps including all students identified as below grade level in reading from the other fifth grade classrooms at the same school. Also comparing RIT data over time would help teachers learn if the program was as successful for other students whose learning conditions may be different. Another recommendation would be to use the same delivery model using higher level materials with students who are at or above grade level. The purpose would be to learn if the scores would increase as dramatically since that group's mean RIT showed little increase during this project's research period.

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