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# A Secondary Intervention in Reading: Word Skills for Junior High

Sheila M. Klich

University of Notre Dame, fsheila1966@aol.com

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## A Secondary Intervention in Reading: Word Skills for Junior High

About 30 million United States citizens over the age of 16 experience difficulty with basic reading and writing. Seven million of these people are considered non-literate because their basic reading and writing skills are so low. These individuals face problems maintaining employment and meeting basic needs such as navigating healthcare systems and understanding financial paperwork (Knox-Merrill, 2009). Basic literacy skills include digit and letter reading, word reading, decoding, and passage reading. Students in today's schools—the adults of tomorrow—, struggle with literacy needs. On the 2009 National Assessment of Educational Progress, 35% of public school fourth graders and 23% of eighth graders in Illinois performed below the basic level of performance.

About 30 million United States citizens over the age of 16 experience difficulty with basic reading and writing.

The school population in this study faces many of the same literacy issues as the population at large, with many students underachieving both on standardized tests and in the classroom. Frequently, standardized test score reports that present group averages do not include English language learners, English as a second language learners, or students with individual education programs. However, because these students will be expected to be literate in today's society and because understanding the needs of diverse student with an eye towards improvement is of critical importance in all schools, this study focuses on them.

To better serve students who underachieve, teachers in the school—where the researcher teaches and serves as assistant principal—participated in monthly professional development meetings and created year-long plans in reading and language, with an emphasis on Marzano's high-yield strategies (Marzano, Pickering, & Pollock, 2001). A universal team (UT) focusing on Response to Intervention (RTI) was created at the end of the 2009-2010 school year to help identify students achieving below grade level. During the 2010-2011 school year, the UT continued to support the students and faculty in targeting instruction and interventions. The UT's goal was to support teachers to identify and assist underachieving students with reading to prevent them from joining the ranks of non-literate adults.

### Purpose Statement

The purpose of this study was to determine whether, and to what extent, small group and individual word skills and decoding instruction helped fifth- through eighth-grade students identified as underachieving in reading by their reading teachers and UT members.

### **Research Questions**

- Do small group and individual word skills and decoding instruction impact student performance on measures of fluency?
- Do small group and individual word skills and decoding instruction impact student performance on measures of comprehension skills?

### **Review of Literature**

#### **Response to Intervention**

In the U.S. the crisis in reading instruction has not gone unnoticed. The federal government reauthorized the Individual with Disabilities Education Act and the final regulations went into effect October 13, 2006. After reauthorization House and Senate committees clarified the regulations by stating the following:

A growing body of scientific research supports methods, such as Response to Intervention (RTI), that more accurately distinguish between children who truly have a Specified Learning Disability (SLD) from those whose learning difficulties could be resolved with more specific, scientifically based, general education interventions. (U.S. Department of Education, 2007, Answer A-2)

Prior to the development of RTI, students exhibiting learning disability needs were identified by large discrepancies between intelligence and achievement test scores (Strangeman, Hitchcock, Hall, Meo & Coyne et al., 2006) or intelligence scores and present achievement in class (Fuchs, Fuchs, & Compton, 2004; Fuchs & Fuchs, 2007; Richek, Caldwell, Jennings, & Lerner, 2002). These approaches involved waiting until the discrepancy was obvious and often took years which made remediation more difficult (Fuchs et al., 2004; Strangeman et al., 2006).

The implementation of RTI is a three-tiered approach (Denski, 2009). In the first tier students are assessed on their success with the regular curriculum and instruction in a school. Primary interventions usually work for approximately 80% of students (Denski, 2009). Students who continue to underachieve receive interventions corresponding to their individual needs. The second tier of intervention usually addresses the needs of 10 to 15% of the school population (Allington, 2009) and seeks to have students achieve at the same levels as their peers (Vaughn & Roberts, 2007). Typically, tier two intervention sessions are designed to be 20 to 30 minutes over a period of 10 to 20 weeks, with 50 to 100 sessions being provided. One-to-one intervention is ideal, but group sizes of three to six students have been shown to be effective (Vaughn & Roberts, 2007). Feedback derived through assessment is crucial and monitoring progress often consists of short, easy to administer assessments. Frequently, students make progress in second tier interventions, but still fall below benchmark criterion. Those students should continue to receive second tier intervention. If students continue to underachieve, they are placed in a third

tier where evaluation and diagnosis of a learning disability occurs (Strangeman et al., 2006). Approximately one to five percent of students require tertiary intervention (Demske, 2009).

### **Effectiveness of RTI**

Reading intervention can involve different group sizes and formats. A meta-analysis of reading intervention performed by Elbaum, Vaughn, Hughes, and Moody (2000) examined the effectiveness of individual instruction. One-to-one intervention is costly and difficult to schedule for many schools. However, based on the 29 studies reviewed, the researchers found that those who received one-to-one instruction performed two-fifths of a standard deviation higher than the comparison group. This means that, in practice, the students could conceivably keep up with instruction and avoid academic failure. Furthermore, the academic benefits were the same when highly-trained teachers provided instruction either on an individual basis or with groups of two to six students.

Other studies have documented the benefits of individual and small group second tier interventions in the upper grades. Vaughn et al. (2008) provided an intervention for 249 sixth grade students who received 25 lessons taught over the course of seven to eight weeks on word study and fluency, lessons on vocabulary over the course of 17 weeks, and comprehension lessons over the course of eight to ten weeks. Students were pre- and post-tested and showed small gains, with an increase after the intervention. While the researchers had hoped to close the gap between the students who underachieved in reading and those reading on grade level, this did not occur (Vaughn et al., 2008).

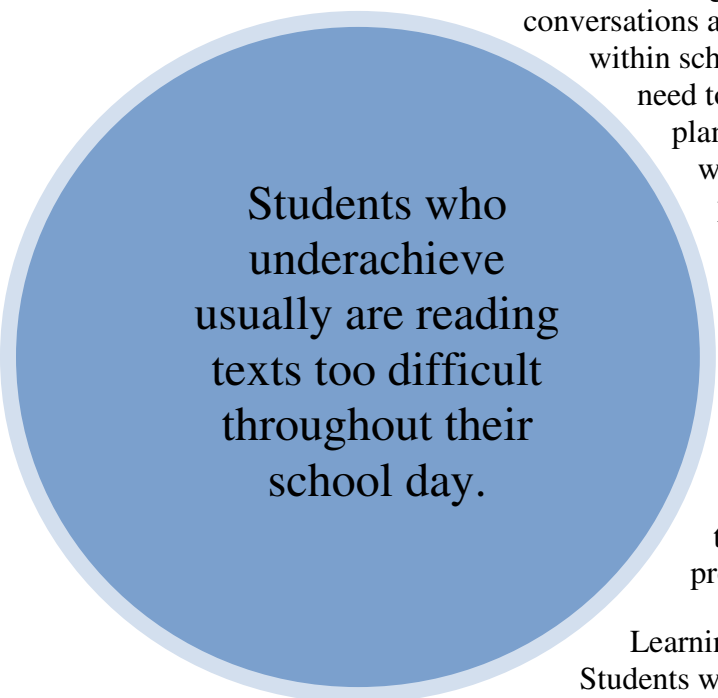
In another example, reading interventions were provided for 2,916 ninth grade students, in 34 high schools and 10 school districts in the United States, over the course of a year. These students were reading two years below grade level and participated in the intervention rather than taking an elective class. A 0.9 standard score increase in reading comprehension and 0.3 standard score increase on the Group Reading Assessment and Diagnostic Examination were observed in pre- and post-testing (Kemple et al., 2008).

Scammacca et al. (2007) noted a number of implications for practice in their meta-analysis of intervention studies designed to help adolescents underachieving in reading. First, older students benefited from interventions at both the word and text level. Second, because adolescents who experience difficulty in reading usually spent less time reading, vocabulary instruction was particularly helpful. Third, the length of the intervention affected impact, as well as having content area teachers guide students with reading skills. Well-designed interventions focused upon the needs of individual readers provided the most benefit.

## **Issues related to implementing RTI**

Implementing an effective RTI program in a school involves a great deal of pre-planning, coordination of resources, and effective materials selection. RTI is part of a larger educational context involving the educational environment and teacher variables (Gerber, 2005). According to Allington (2009), many schools provided RTI during the regular reading block, creating the situation in which students who underachieve technically receive no additional reading interventions. For older students, this means they are always behind because the gap between their present reading and grade level is never closed.

Smaller schools and private schools, which may have limited access to resources, face unique challenges in implementing RTI. Samuels (2008), in a description of RTI implementation in schools in a small Iowa school district, suggested that RTI implementation start with informal conversations and a construction of consensus among those involved within schools. Consensus is crucial to success. Schedules may need to be changed and duties shifted so that teachers can plan, participate in professional development, and work with students who are underachieving. Other professionals, such as special education teachers, the principal, and support staff, may also need to work with students differently or more frequently. Collins (2002) encouraged Catholic schools to create professional teams to act as student support teams, which include administrators and teachers who are able to provide expertise in program modification to help students who are underachieving. Collins (2002) stated that, “testing is easier to recommend if the school has made strong and thorough efforts to provide remediation” (p. 17).



Students who underachieve usually are reading texts too difficult throughout their school day.

Learning materials are also an issue in RTI implementation. Students who underachieve usually are reading texts too difficult throughout their school day. In order to achieve, these students must have materials that they can read in all of their classes (Allington, 2009). Consistency between the students, materials at their levels, and curriculum must exist in all subject areas.

## **Reading skills**

The process of reading involves many components and develops along a continuum from emergent stages through fluent reading. Jeanne Chall (1983), in her work with readers of all

ages, differentiated between *learning to read* and *reading to learn*. Reading to learn is an instructional shift that occurs after the primary grades. Problems with reading become more serious as the curriculum shifts to reading for meaning and obtaining new information through reading for older students (Fuchs et al., 2004). Word recognition is not taught in the intermediate and junior high grades and this proves to be a key time when intervention is needed for students who continue to underachieve in reading throughout the later grades.

Phonics instruction must be taught systematically and explicitly to have the greatest impact. As students develop as readers, they become able to use patterns from words they know to decode words they do not. Cunningham and Cunningham (2002) referred to this as decoding by *pattern* and *analogy*. Learning orthographic patterns and analogy-decoding both help to develop phonics skills necessary for fluent reading.

Deeney (2010) expanded the definition of fluency to include not only *accuracy* and *comprehension* but also *rate*, *prosody*, and *endurance*. Comprehension is the purpose for reading and involves the use of different strategies, such as inferencing, questioning, summarizing, and predicting (Beers, 2003). Comprehension and decoding are related. Decoding contributes to comprehension because the more skilled one is in decoding, the less effort is required and the more one can focus on comprehension (Pressley, 2000; Rasinski et al., 2005; Rasinski, Rilki, & Johnston, 2009).

Rate refers to the number of words read correctly and involves both automaticity and speed. Prosody is the ability to read smoothly with expression and phrasing and is inter-related with comprehension. Many students begin reading well, but struggle after a longer period of time. Endurance involves the “ability to continue reading with appropriate accuracy, rate, prosody, and comprehension over an extended period of time” (Deeney, 2010, p.442).

## **Method**

### **Participants**

Participants ( $N = 16$ ) were fifth through eighth grade students selected for the intervention based on TerraNova test scores from the 2009-2010 school year, teacher recommendation, and report card grades from the 2009-2010 school year. Students were selected to receive an additional 40 minutes of instruction during a class conducted four days a week and titled *Reading Lab*.

Participants in the tier two RTI phonics instruction consisted of 4 fifth graders (all male), 5 sixth graders (4 male, 1 female), 3 seventh graders (2 male, 1 female), and 5 eighth graders (1 male, 4 female) participated in the tier two RTI phonics instruction. Of the 16 participants, four were African American, eight were Hispanic, two were Asian American, and two were Caucasian. Seven students lived in homes where English was not the primary language.

## **Instrument and Materials**

**Pretest assessments.** To determine pretest levels and obtain a baseline score for general reading achievement, reading comprehension, and oral reading fluency, students took the AIMSweb Reading Curriculum-Based Measurement (R-CBM) in early October.

Fluency was measured by having students orally read three passages consisting of 250 to 300 words for a minute as part of the AIMSweb Reading Curriculum Based Measurement (R-CBM). Reading miscues—instances when words were mispronounced, omitted, or not read after a three second waiting period (Shinn & Shinn, 2002)—were noted. Scores were noted as a ratio of the number of words read correctly (WRC) to errors for each of the three fluency tests. The median score from the three passages was taken as a baseline measurement for each student.

The AIMSweb Curriculum Based Measurement Reading Maze (CBM-RM) measured student comprehension of 150-400 word passages they read silently. The AIMSweb CBM-RM included passages in which every seventh word was replaced with three word options and students had to select the correct option. Students had three minutes to complete as many items as they could. Scores were uploaded into the AIMSweb system. The AIMSweb system, using standardized norms, generated reports designed to “set benchmarks and monitor student progress” (*AIMSweb*, 2008, p. 4).

In late October 2010, students were also assessed using the Qualitative Reading Inventory 5 (QRI-5), an informal reading inventory designed to assess reading levels at emergent through junior high levels (Leslie & Schudt-Caldwell, 2010). Individually, students read QRI-5 word lists to determine an independent reading level for comprehension passages. This component of the assessment was useful because Leslie and Schudt-Caldwell (2010) found in their pilot data that the number of words read within one second predicted reading rate in the context of passages better than the total number of words correct on the word identification portion of the test.

Students were then asked to read passages aloud at their instructional reading levels. Students were timed as they read the entire passage. The number of correct words per minute was calculated. The QRI-5 was selected because students could read text at their instructional level, rather than at their grade level. The students involved in the intervention frequently could not read grade-level text without teacher assistance. Furthermore, the QRI-5 enabled the researcher to gain information about prosody and endurance, components not measured by AIMSweb (Deeney, 2010). According to Pikulski and Chard (2005), the QRI-5 enables researchers to obtain a “full, deep, developmental construct of fluency” (p. 517).

Students read their passages aloud, and answered implicit and explicit comprehension questions. Fluency scores were based upon word identification and correct words read per minute in an oral reading of a selection. Comprehension scores were based upon answers to comprehension questions. The pre-test scores were compared to a post-test administration of the assessment after

the intervention. Since the QRI-5 (2010) is not a standardized test, Leslie and Schudt- Caldwell stated that scores are “interpreted only in regard to the individual and not to any norm group” (p. 1).

The same passage was used as a pre- and post-test for students involved in the intervention. Paris and Carpenter (2003) noted that identical passages have been given in studies with positive and significant retest reliability and that “most commercial [informal reading inventories] are based on acceptable levels of reliability and validity” (p. 579).

**Instruction and instructional leveling.** Using the *Words Their Way* (WTW) series (Bear, Invernizzi, Templeton, & Johnston, 2008), students were assessed with the Elementary Spelling Inventory to determine their orthographic development level. The assessment was given in the same manner as a traditional spelling test. A “power score” was created by using a WTW protocol with a section to analyze the nature and basis of errors for future work. Class groupings of students of similar orthographic levels were organized. Students making two or more errors in the same area of orthographic development are determined to need instruction in that area. Of the students in the sample, three groups consisted of two students; one group contained four students; and two groups contained three students.

Students were given the Elementary Spelling Inventory and the Upper-Level Spelling Inventory monthly to assess progress and determine if grouping changes were necessary. Bear et al. (2008) cautioned that students beyond those in the primary grades may need more than a year to master orthographic stages. Extra time and intervention were given to students that underachieved in learning different orthographic features.

**Post-test assessment.** After four months of intervention, students were assessed using the AIMSweb program and the Qualitative Reading Inventory 5. A different comprehension passage was given as part of the AIMSweb Curriculum Maze post-test of comprehension. Students were allowed three minutes to correctly select words to complete sentences in a passage at their grade-level. Correct answers on the post-test were compared to pre-test results.

The same passage was used for the pre- and post-tests for the QRI-5. Students were given enough time to read an entire passage, as they did for the pre-test. Correct words per minute were calculated based upon the amount of time needed to read the entire passage. For comprehension, students answered the same implicit and explicit comprehension questions as they did for the pre-test.

## **Procedure**

The classes took place during the last 30 instructional minutes of the day, from 2:00 p.m. until 2:30 p.m. on an average of four days per week, using the WTW series in the school art room after art classes were done for the day. As students showed progress, they moved to different

levels in the WTW series. Pre- and post-test assessments of the students using the AIMSweb and Qualitative Reading Inventory 5 were completed in October and January, respectively.

## Findings

### Fluency

Pre- and post-test data on fluency was gathered through the administration of the AIMSweb Reading Curriculum Based Measure (R-CBM) and the Qualitative Reading Inventory-5 (QRI-5). The AIMSweb (R-CBM) passages that were administered were at the students' grade-levels, while the QRI-5 passages were selected according to the students' instructional levels. As shown in Table 1, pre- and post-test results were recorded for each student.

**Table 1**

*Pre- and Post-Test Fluency Data by Student*

|            | AIMSweb (R-CBM) |         | QRI-5   |         |
|------------|-----------------|---------|---------|---------|
|            | October         | January | October | January |
| Student 1  | 148             | 143     | 144.2   | 145.2   |
| Student 2  | 126             | 147     | 151     | 153.9   |
| Student 3  | 127             | 141     | 136.9   | 142.8   |
| Student 4  | 188             | 182     | 159.9   | 165.7   |
| Student 5  | 109             | 106     | 103.6   | 109.9   |
| Student 6  | 96              | 112     | 89.1    | 90      |
| Student 7  | 123             | 131     | 125.4   | 145.2   |
| Student 8  | 147             | 161     | 149.8   | 141.1   |
| Student 9  | 109             | 139     | 90.4    | 135.1   |
| Student 10 | 110             | 102     | 97.3    | 94.9    |
| Student 11 | 126             | 151     | 117     | 148.3   |
| Student 12 | 146             | 149     | 130.5   | 143.5   |
| Student 13 | 125             | 150     | 118.8   | 116.7   |
| Student 14 | 103             | 116     | 105.5   | 126.5   |
| Student 15 | 34              | 64      | 74.8    | 77.1    |
| Student 16 | 101             | 92      | 80.4    | 99.2    |

As part of the AIMSweb (R-CBM) pre- and post-testing for fluency, students read three passages for one minute each. The passages were the same for both the October and January test administrations. The median score of WRC was used as a benchmark score. Students were assessed in early October and in the first week of January. Increases in WRC were shown for 11 out of 16 (69%) of the students, with six of those students obtaining 15 or more WRC in January.

However, five students (31%) read fewer words in January than they did in October. None of the five students experienced a decrease of more than 10 words. Overall, the January benchmark ( $M = 130.38$ ,  $SD = 29.67$ ) was higher than the September benchmark ( $M = 119.88$ ,  $SD = 32.59$ ).

An inferential analysis of AIMSweb (R-CBM) data based upon a paired sample  $t$ -test showed that there was a statistically significant difference between the October and January scores on fluency for students involved in the intervention,  $t(15) = -3.05$ ,  $p < .05$ . On the whole, students involved in the intervention read more words correctly, at their grade level when retested in January.

Students orally read entire passages from the QRI-5 in October and late January. In October, as a pre-test measure, five students read passages below grade level; seven students at grade level; and four students one level higher. The same passage was used to obtain post-test scores and correct words per minute (CWPM) for the oral reading were calculated after each assessment. There was an increase in CWPM from testing in October ( $M = 117.16$ ,  $SD = 26.8$ ) and January ( $M = 127.19$ ,  $SD = 26.06$ ). The range of scores varied from a student experiencing a drop of 2.4 CWPM to a student increasing by 31.3 CWPM. A paired sample  $t$ -test of the QRI-5 data also showed a statistically significant difference between the pre- and post-test results  $t(15) = -2.87$ ,  $p < .05$ . As shown in Table 2, students improved on CWPM on materials selected at their instructional levels.

**Table 2**

*Pre- and Post-Test Fluency Data with Means, Standard Deviations, and  $t$  Statistic*

|                 | October |       | January |       | Difference |         |
|-----------------|---------|-------|---------|-------|------------|---------|
|                 | M       | SD    | M       | SD    | df         | t-value |
| AIMSweb (R-CBM) | 119.88  | 32.59 | 130.38  | 29.67 | 15         | -3.05** |
| QRI-5           | 117.16  | 26.80 | 127.19  | 26.06 | 15         | -2.87*  |

Note. \* $p < .05$ ; \*\* $p < .01$

## Comprehension

Comprehension was pre- and post-tested using the AIMSweb Curriculum Based Measurement Reading Maze (CBM-RM) and the Qualitative Reading Inventory-5 (QRI-5). The AIMSweb CBM-RM and QRI-5 were selected for use and analysis because of the different administration formats and the difference in comprehension data that could be gathered. The AIMSweb CBM-RM involved written answers, whereas the QRI-5 involved the students verbally answering both implicit and explicit comprehension questions. As shown in Table 3, pre and post-test results were recorded for each student.

**Table 3***Pre- and Post-Test Comprehension Data by Student*

|            | AIMSweb (CBM Maze) |         | QRI-5   |         |
|------------|--------------------|---------|---------|---------|
|            | October            | January | October | January |
| Student 1  | 13                 | 11      | 8       | 7.5     |
| Student 2  | 26                 | 23      | 10      | 10      |
| Student 3  | 22                 | 14      | 7       | 8       |
| Student 4  | 21                 | 16      | 4.5     | 7.5     |
| Student 5  | 19                 | 22      | 6       | 7       |
| Student 6  | 21                 | 16      | 8       | 8       |
| Student 7  | 16                 | 21      | 7       | 8.5     |
| Student 8  | 6                  | 15      | 4       | 7       |
| Student 9  | 7                  | 9       | 8       | 10      |
| Student 10 | 13                 | 14      | 5       | 7       |
| Student 11 | 22                 | 27      | 6       | 6       |
| Student 12 | 19                 | 21      | 9       | 7       |
| Student 13 | 6                  | 12      | 5       | 7       |
| Student 14 | 10                 | 18      | 7       | 7       |
| Student 15 | 18                 | 27      | 8       | 8       |
| Student 16 | 21                 | 29      | 7       | 7       |

The scores on the AIMSweb CBM-RM showed an increase between the October ( $M = 16.25$ ,  $SD = 6.34$ ) and January ( $M = 18.44$ ,  $SD = 6.08$ ) administrations. The passage used in the September administration was different than the one used in January. Students were given three minutes to select the correct word choices in this written assessment. The range of scores varied from five students (31%) answering fewer correctly to 11 students (69%) answering more correctly.

The QRI-5 assessment, administered in October and in late January, involved students answering comprehension questions related to the passages they read orally. An increase in scores was noted between the October ( $M = 6.84$ ,  $SD = 1.67$ ) and late January ( $M = 7.66$ ,  $SD = 1.09$ ) results. The QRI-5 test involved students answering the same number of questions, rather than being timed and trying complete as many as possible as was done with AIMSweb CBM-RM. For the QRI-5, two students (12.5%) answered fewer correctly; six (37.5%) answered the same number correctly; and eight (50%) answered more correctly in late January.

The comparison of pre- and post-test data for both AIMSweb CBM-RM and the QRI-5 did reveal overall gains for the students who received the WTW intervention. An inferential analysis of the AIMSweb CBM-RM pre- and post-test data indicate that there was not a statistically significant difference in performance between the two administrations of the test,  $t(15) = -1.60$ ,  $p > .05$ . However, as shown in Table 4, the students receiving the intervention did exhibit a gain of one third of a standard deviation. As shown in Table 5, An inferential analysis of the QRI-5

comprehension data did indicate a statistically significant difference on the paired sample  $t$ -test,  $t(15) = -2.38, p < .05$ , which compared the pre- and post-test scores from October and late January.

**Table 4**

*AIMSweb Pre- and Post-Test Comprehension Data with Means, Standard Deviations, and  $t$  Statistic*

|                    | October |      | January |      | Difference |         |
|--------------------|---------|------|---------|------|------------|---------|
|                    | M       | SD   | M       | SD   | df         | t-value |
| AIMSweb (CBM) Maze | 16.25   | 6.34 | 18.44   | 6.08 | 15         | -1.60   |

Note. \*  $p < .05$

**Table 5**

*Pre- and Post-Test QRI-5 Comprehension Data with Means, Standard Deviations, and  $t$  Statistic*

|       | October |      | January |      | Difference |         |
|-------|---------|------|---------|------|------------|---------|
|       | M       | SD   | M       | SD   | df         | t-value |
| QRI-5 | 6.84    | 1.67 | 7.66    | 1.09 | 15         | -2.38*  |

Note. \*  $p < .05$

The data from this quasi-experimental action research project reveals that the WTW intervention had the greatest impact on fluency and decoding as measured by the AIMSweb R-CBM and QRI-5 assessments. The impact on comprehension was not clearly defined. The QRI-5 comprehension results showed statistically significant improvement. The comparison of AIMSweb CBM-RM pre- and post-tests did not indicate statistically significant gains. The implications of these findings will be discussed in the following section.

## Discussion

### Pre- and post-test summary

Increases in decoding and fluency were evident in the scores on both the AIMSweb R-CBM and the QRI-5. The AIMSweb R-CBM pre- and post-test data indicated a statistically significant increase in WRC between the October and January testing. The QRI-5 pre- and post-test data showed a statistically significant increase in correct words per minute (CWPM) between the October and January testing dates. Students were able to read a significantly greater number of words correctly, and with greater fluency, in January after the five months of intervention than

they were in October. Almost 70% of the students showed an increase in words read correctly on the AIMSweb R-CBM and 81% of the students showed an increase in CWPM on the QRI-5.

Students also showed increases in comprehension on both the AIMSweb CBM-RM and the QRI-5. The AIMSweb CBM-RM indicated increases in items answered correctly on a written comprehension test between October and January. There was a gain of one third of a standard deviation for the group on the January testing. Increases examined via a paired sample for means *t*-test were not statistically significant, but the mean score increased by 2.19 points.

The QRI-5comprehension scores indicated a statistically significant increase in correct answers on comprehension questions answered orally between the October and January test administrations. The mean score increased by 0.81 points. Students showed progress when answering both implicit and explicit comprehension questions orally.

Sixty-nine percent of students remained the same or showed an increase on the AIMSweb CBM-RM and 88% of the students did so for the QRI-5. Students were able to read and complete comprehension tasks in a written and oral format more successfully in January than in October.

The WTW intervention had a more obvious impact on decoding and fluency than on comprehension as evidenced by the improvement on both the AIMSweb R-CBM and QRI-5 assessments. Overall, these findings were reflective of other studies involving various interventions at the junior high level, with decoding, fluency, and comprehension skills being affected to different degrees. For example, Elbaum, Vaughn, Hughes, and Moody (2000) noted increases in reading skills in a meta-analysis of 29 intervention studies in which skills were taught as an adjunct to regular classroom instruction. Pedrotty et al. (2008), in their study of 60 sixth grade students, showed significant gains in fluency and slight gains in comprehension, much like the results from this intervention project. Wexler, Vaughn, Edmonds, and Klein-Reutebuch (2007) analyzed 19 studies of interventions for students in grades 6 through 12 and found fluency interventions impacted reading rate, but had no direct impact on comprehension.

### **Student performance**

Students involved in the intervention continue to perform at a lower level than their peers, which is not uncommon for older readers who underachieve. Allington (2009) noted

studies of techniques used with older struggling readers grade 4 and upward have typically shown less success in bringing struggling readers' achievement up to grade level, but that may be a result of the size of the gap in reading achievement these older readers experience. (p. 8)

Such findings are consistent with the Vaughn et al. (2008) study on tier two interventions and student underachievement where 231 sixth-grade students improved in fluency and

comprehension. However, the students remained below peers in the same grade and the authors described the goal of closing the gap between students at grade levels and those who underachieve during the course of one school year as “overly ambitious.” It appears that the longer students underachieve, the more time is needed for interventions to resolve the situation.

## Materials

Students performed better with materials at their instructional level than with materials at their grade level. Sixty-nine percent of students showed an increase in WRC on the AIMSweb (R-CBM) assessment, which was administered at grade level. Eighty-one percent of the students showed an increase in WRC on the QRI-5, which was at the instructional level of the student.

When assessing comprehension, 69% of the students increased or stayed the same on the AIMSweb CBM-RM post-test. Seventy-five percent of students in the intervention increased or stayed the same on the QRI-5 comprehension questions. The differences in percentages may be attributed to the fact that AIMSweb was at their grade level and the QRI-5 was at their instructional level.

Allington (2009) noted that students who underachieve in reading are often reading materials at grade level. Since these students are unable to manage the tasks required of them as readers, they are often left behind. Students in the intervention may have had greater success with the QRI materials because they were better able to manage the reading tasks expected of them. Allington (2002) also maintained that the “one-size-fits-all” approach towards materials does not help students understand new information.

## Scheduling

Students in the intervention received an average of 30 minutes of reading instruction three days per week. Allington (2009) suggested that after fourth grade, 60 minutes of reading interventions be added to 90 minutes of regular reading instruction for students who underachieve. Such intervention time needs to be an adjunct to time spent in the regular classroom for these students.

Students performed  
better with  
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instructional level  
than with materials  
at their grade level.

Bear et al., (2008) described students in the older grades as growing through different orthographic stages more slowly than students in the primary grades. This slower growth is often compounded by the fact that reading instruction has moved from learning to read to reading to learn (Cox, 1983). Furthermore, significant amounts of the school day are spent in classrooms

where instruction is targeted to students achieving at grade level, rather than those not achieving at grade level (Allington, 2009).

A balance needs to be found between regular class time and time spent on interventions. Interventions could potentially be held during Social Studies and Science in many cases, if no other time is available. However, when interventions cannot be inserted to the regular school day, other options, such as longer school days, after-school programs, and staggered dismissals should be explored. Allington (2009) noted that such scheduling options should be explored for students who underachieve, along with scheduling additional personnel, such as special education teachers, ESL teachers, teachers of specials within the school, and/or paraprofessionals to assist with interventions.

In conjunction with arranging schedules and assigning personnel, the concept of faculty “buy-in” is crucial to intervention success. Traditionally, word study as taught through the WTW series is not part of a middle school curriculum. Frequently, content area teachers, such as those at the school in the study, express concern over students not being present in their classes due to time needed for the intervention. Bloodgood and Pacifci (2004) did an inquiry on pre-service and regular education teachers who implemented word study as a new component into the reading classroom. They found that teachers need time and support to implement curricular changes and noted that “word study is a complex and multileveled process requiring time and practice to grasp its various aspects” (p. 262).

Wepner, Strickland, and Feeley (2002) also stated that an effective reading program must have “a vision of what reading is” and that “all professionals in the school work towards a shared vision” (p. 4). When the entire faculty is involved in fostering a shared vision, teaching improves, collegiality develops, and consensus for decision-making emerges. Communication among the faculty, as schedules and interventions are developed, is crucial. No single individual is as effective as an entire team in developing, implementing, and assessing school-wide interventions. Therefore, teacher and administration participation in an ongoing reflection of the school’s decision making process relative to the curriculum and the students’ needs should be a regular part of RTI implementation within the school. The gathering of qualitative data regarding the decision making process may provide useful data for future interventions and decisions.

### **Implications for Practice**

#### **Student performance and assessment**

Students who underachieve in reading must be identified and helped early in their school careers. Consequently, early assessment with an intervention designed specifically for the primary grades must occur. Allington (2009) recommended that assessment and intervention start as early as Kindergarten for students who underachieve.

The WTW series emphasizes decoding and word skills, not comprehension. While improving and increasing decoding skills can improve comprehension (Diliberto et al., 2009), interventions directly addressing comprehension must be found and implemented at all grade levels. As part of creating the most effective and differentiated intervention possible, students who are underachieving must have follow-up assessments to determine if their underachievement stems from needs related to decoding or needs related to comprehension.

Based on the pre- and post-test data, students appeared more adept at oral comprehension than written comprehension. Attention must be given to the mode of output, with the goal of improving both oral and written comprehension skills at all grade levels. Schisler, Joseph, Konrad, and Alber-Morgan (2010) noted in a study with third graders that oral retellings of stories tended to be more complete than written retellings. They suggested that teachers alternate oral and written retellings as a means to improve both reading and writing. Further exploration of modes of outputs would be helpful for teachers as they work with students.

Furthermore, professional development for the faculty must be provided in decoding, fluency, and comprehension strategies. All teachers, not only those who teach reading, must be included. Wepner et al. (2002) detailed the foundations of successful reading programs as having a basis in effective strategies and instruction, consideration of variables that contribute to success in reading, time for reading practice, a relationship with writing, and opportunities for students to self-monitor progress.

...professional development for the faculty must be provided in decoding, fluency, and comprehension strategies. All teachers, not only those who teach reading, must be included.

Allington (2009) stated that expert teachers are central to learning in the regular classrooms and in interventions within the school. Administrators must keep this in mind as they develop excellence in teachers. Administrators must also model how intervention should look in the school community. The climate in the school must encourage students as learners. Professional development opportunities should be ongoing and be selected with these foundational elements in mind.

### **Scheduling**

The administration must create a flexible schedule that allows for interventions for students who underachieve. Scheduling options should include longer school days and/or staggered dismissals. A review of current research on the length of the school day and an exploration of what other schools in the area do regarding scheduling should be part of the planning process.

## **Implications of changes**

Data-driven decisions need to be made regarding instruction, assessment, curriculum, materials, and scheduling to differentiate for the students who underachieve in reading. Such data needs to be collected, analyzed, and shared on an ongoing basis, so that decisions reflect what is in the best interest of the students. Teachers need to be informed and included as part of the differentiation process, so that student needs are consistently met and interventions are implemented effectively. Doing this involves change and flexibility, which may be a challenge, since adults are asked to move out their comfort zones. In fact, Wepner et al. (2002) described such a process of adult learning as involving “unfreezing or readiness, moving forward and gaining experience, refreezing, and finally incorporating changes into the environment” (p. 116).

## **Dissemination**

In regard to sharing the results and implications of this action research, key stakeholders in the school community should have access to some or all of the results, according to their role within the school community. The administration and universal team will have access basic data about the intervention, pre- and post-test results for planning purposes. Parents will be informed of the study and its general findings in the weekly school email. Professional development organizations and local funding organizations will receive information relevant to their roles within the school community. Students involved in the intervention will be given the proof of their success in the intervention. Through feeling success, intrinsic motivation develops (Deci & Ryan, 1992) and self-efficacy is a strong predictor of achievement (Gottfried, Fleming, & Gottfried, 2001; Wigfield & Guthrie, 1997). By communicating success to all school community members, a foundation is laid for further RTI success.

## **Limitations**

Even though the present study contributes to the research on reading instruction and tier two interventions, it has some limitations. First, a small sample of students was selected based upon underachievement in reading, without attention to whether or not the underachievement stemmed from decoding issues or comprehension issues. Future reading intervention work with students should be preceded by students taking an informal reading inventory, such as the QRI-5 to determine specific reading needs. Intervention decisions must then be made on a case-by-case basis, according to the student’s needs.

Some improvement shown over the course of four months may have come from regular reading instruction in decoding, fluency, and comprehension, rather than the intervention itself. There was no way to account for that in this project, but careful reading of lesson plans for regular class instruction may provide clues to improvements shown by the students in the intervention, because of instructional changes incorporated as part of ongoing professional development and tier one RTI changes affecting instruction in the regular classroom. A review of teacher-created

assessments may also provide information about student growth over the course of four months. Furthermore, a review of year-long plans for fifth through eighth grade students not only provides information about student growth, but may help with planning for future interventions.

Another limitation involved the frequency with which the intervention had to be cancelled or rescheduled due to conflicts within the school calendar and demands of other teachers. Since the intervention was planned, developed, and implemented by one faculty member, the level of “buy-in” throughout the faculty was not as high as it could have been.

The final limitation was that students were pre- and post-tested using the same passages from the QRI-5. There may have been a test/retest effect on comprehension scores related to the QRI-5. According to Leslie and Schudt-Caldwell (2010), growth in implicit or explicit comprehension skills cannot be determined through the use of one passage. Leslie and Schudt-Caldwell (2010) recommended that pre- and post-tests be of similar structure, with either both texts being narrative in structure or both texts being expository in structure to determine growth in reading skills. In the future, two different QRI-5 texts will be used.

### **Future Directions**

The study has led to a number of new questions related to reading interventions. First, further research and future intervention studies can address questions related to student instruction and performance. These questions involve finding the most effective comprehension interventions to use for students who underachieve in reading; implementing instructional strategies and interventions for students learning English as a second language; identifying and applying instructional strategies for improving oral and written comprehension; and implementing a more formalized phonics program in the lower grades, with the hopes of limiting the need for interventions later. The formulation and implementation of interventions designed to meet the needs of students who are learning English as a second language must also occur. Interventions for students who underachieve must continue, with the incorporation of progress monitoring to track effectiveness. Scheduling interventions for students is also an area for future research, especially as it relates to longer school days, staggered dismissals, and allocating well-trained personnel effectively. Third, acquiring an adequate supply of materials at student reading levels is also an area requiring attention for the future. The Universal Team, in collaboration with the entire faculty will explore funding options and grants, as well as research-proven materials, to aide in the instruction of children at all levels.

### **Conclusion**

The overall importance of the study was in the ability to use a tier two intervention to improve the reading skills of students who have consistently underachieved in reading. Through this project, students made steps towards becoming more literate and meeting the demands of the world around them. This action research project has also given the school the opportunity to

formulate and implement a tier two intervention “from scratch” based on the needs of its students. The school was able to gather and use data to assess the effectiveness of the intervention. The data derived from this project lays the foundation for the faculty and administration to make systematic, data-driven decisions regarding curriculum, instruction, assessment, scheduling, and materials, with an emphasis on care and respect for every member of the school’s learning community.

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*Sheila M. Klich is a graduate of the Mary Ann Remick Leadership Program at the University of Notre Dame, a certified Reading Specialist, and is the Assistant Principal at St. Matthias School in Chicago. Her research interests include Response to Intervention (RTI) implementation in private schools, with a focus on effective reading instruction and interventions.*

*Sheila M. Klich: Assistant Principal, St. Matthias School, Chicago*  
[sheila.klich@stmatthiasschool.org](mailto:sheila.klich@stmatthiasschool.org)