

2016

# Fluency Interventions and the Impact on Comprehension

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## Recommended Citation

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Fluency Interventions and the Impact on Comprehension

Research Paper

Submitted to Special Education Faculty of Marshall University College of Education and

Professional Development in Partial Fulfillment of the Requirements for the Degree

Masters of Arts

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Marshall University

### Abstract

Reading fluency is understood to be the rate and accuracy of that which is being read and comprehension is the understanding of what has been read. Many studies support the concept that fluency skills support reading comprehension. Many students with specific learning disabilities lack the fluency skills needed for successful reading comprehension. This study provided fluency interventions to elementary students with specific learning disabilities and evaluated any comprehension gains. Students graphed their own fluency gains during the interventions and a pre-test and post-test were given to monitor comprehension. There was an increase in both the average fluency rate for each group and the average comprehension scores, however, the increases in comprehension were not a statistically significant amount.

*Keywords:* fluency, comprehension, specific learning disability

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## **Chapter One: Introduction**

Sufficient reading skills are the foundation for most other academic skills and without these skills, individuals are more likely to struggle throughout their academic careers (Cartledge, Gibson, Keyes, & Yawn, 2014). One of the components of reading is fluency, which is understood to be the rate which text is read with accuracy and expression (Basaran, 2013) and comprehension of text is often believed to be impacted by fluency skills (Paige & Magpuri-Lavell, 2014). This study focused on increasing fluency skills and identifying if the increase also resulted in an increase in comprehension in students with intellectual and specific learning disabilities.

### **Statement of the Problem**

Mastering reading skills is critical in the success of students in school and students with specific learning disabilities and intellectual disabilities are often the most challenged in this area (Swanson & Vaughn, 2010). Improving fluency skills for these students will allow them to use more cognition to focus on understanding the text they are reading rather than trying to decode the words one at a time (Carrier, Fritz, & Neddenriep, 2011).

### **Purpose of the Study**

The purpose of this study was to provide direct fluency intervention for students with specific learning disabilities in an elementary school resource room in a rural, mid-Atlantic state and evaluate any resulting comprehension gains. The students continued their instruction in the general and special education environment in addition to the fluency interventions. It has been found by many studies that there is a relationship between the two reading components, however,

few studies have evaluated this relationship among students with learning disabilities in a resource room setting.

### **Rationale for the Study**

One study has found that fluency instruction only accounted for about 9% of overall instruction in a resource room setting (Swanson & Vaughn, 2010). Upper elementary reading interventions often focus on vocabulary and comprehension, making these interventions even more difficult for students with intellectual and learning disabilities because so many other components, including fluency, need to be in place before comprehension can occur. (Montanaro, Ritchey, Schatschneider, Silverman, & Speece, 2012). One study found that although fluency instruction was not targeting comprehension, there were positive effects on comprehension (Hawkins, Marsicano, McCallum, Musti-Rao, & Schmitt, 2015), however, another study's results did not indicate that reading speed was a dependable gauge of reading comprehension (Hausmann, Kloos, Lyby, O'Brien, & Wallot, 2014).

### **Research Question**

Will increasing reading fluency also result in an increase in reading comprehension in students with learning disabilities? The purpose of this study was to examine whether an increase in fluency skills using a repeated reading strategy also resulted in an increase in comprehension in elementary students with learning disabilities. Comprehension is the understanding of what is being read and fluency is reading with appropriate speed, expression, and accuracy. The independent variable in this study was fluency intervention and the dependent variable was comprehension gains.

Throughout the fluency interventions, students graphed their fluency progress by the number of correct words per minute. This shows any increase or decrease in fluency skills. Students were assessed for comprehension gains using the STAR Reading Assessment (see Appendix) before and after fluency interventions. The assessment was an online, multiple-choice, adaptive test with 34 items to measure reading comprehension. Students' scaled scores from the pre-test and post-test were compared to look for comprehension gains.

## **Chapter Two: Literature Review**

Many studies show a positive relationship between fluency and comprehension. Fluency is seen as reading with proper speed, accuracy, and expression (Sample, 2005). Theories suggest that reading fluently allows for increased capacity to comprehend what is being read rather than decoding words. Some strategies often used for fluency intervention include repeated reading, listening-while-reading, and computer models. It has also been found that setting expected goals for students can increase fluency skills.

### **Fluency and Comprehension**

Fluency and comprehension are only two components of reading; however, they are believed to be two of the most critical components. Fluency is often measured by the number of words read correctly in a set time frame (Cartledge, Gibson, Keyes, & Yawn, 2014). However, a variety of definitions have been presented, such as: fluency is understanding text while articulating, fluency is reading with appropriate swiftness and accuracy with one's natural voice, fluency is stating the connotation of the text with proper prose, fluency is the gauge of all of the reading components (Basaran, 2013).

In one study, authors discuss three indicators of fluency that are also often used to define it: word identification accuracy, pacing, and prosody (Paige & Magpuri-Lavell, 2014). Word identification accuracy is reading words without hesitance. Automaticity, or pacing, is reading words automatically by recalling it from long-term memory. The authors refer to the combination of accuracy and automaticity as "accumaticity". The third indicator is reading with expression, also known as prosody, and this forms the structure for comprehension. Simply reading at a fast pace is not fluency, just as reading at a slow pace is not. Inexpressive reading is also not considered fluent reading.

Studies indicate that once students become fluent readers, they have more cognitive ability to process what is being read (Carrier, Fritz, & Neddenriep, 2011). Most students develop solid fluency skills by third grade (Corcoran & Davis, 2005). Third grade is also when students often begin to focus on more expository text as opposed to narrative text, which demonstrates the need for fluency transference to unfamiliar text, presenting another difficulty for struggling readers (Montanaro, Ritchey, Schatschneider, Silverman, & Speece, 2012). Fluency seems to be the most difficult skill for students with learning and intellectual disabilities to master, which will make reading a greater challenge as they enter upper grade levels where reading becomes more about the content of the text and less about developing their reading skills (O'Connor, Swanson, & White, 2007). These challenges continue to present more issues for these students because they often lack the motivation needed to continue reading and to continue learning new reading skills (Montanaro et al., 2011). Another study also indicates that students need to attain sufficient reading skills when they are in the primary grades in order to be successful and not encounter continued difficulties throughout their school careers (Cartledge, Gibson, Keyes, & Yawn, 2014).

Comprehension is ultimately the goal of reading and it is often agreed upon that understanding 90% to 95% of word meanings in a text is needed for adequate comprehension to occur (Montanaro et al., 2011). Although comprehension instruction has been observed accounting for approximately 26% of total reading instruction (Swanson & Vaughn, 2010), few interventions programs have demonstrated explicit instruction on fluency and comprehension (Montanaro et al., 2011). Even with strong, fundamental instruction, a substantial number of students still have difficulty with fluency (Kuhn, Rasinski, & Zimmerman, 2014). Kuhn,

Rasinski, and Zimmerman (2014) also indicate that fluency instruction should not only concentrate on speed and expression, but also on reading with comprehension.

In order for students to become competent readers, they must make speedy growth and the one goal they will all have is to read appropriate level text with comprehension and fluency (Kuhn, Rasinski, & Zimmerman, (2014). With excellent fluency instruction or interventions, students may demonstrate fluency growth of up to two words per week (Swanson & Vaughn, 2010).

### **Does Fluency Impact Comprehension?**

Many studies support the idea that fluency impacts comprehension and the significance of having skilled reading ability is to reach the information in the text (Paige & Magpuri-Lavell, 2014). Theories suggest that difficulty in decoding and fluency uses up cognition that could be utilized for comprehension (Chard, Tyler, & Vaughn, 2002). This supports the idea of a strong, positive relationship between fluency and comprehension (Cartledge, Gibson, Keyes, & Yawn, 2014). Paige and Magpuri-Lavell (2014) suggest that when students must work painstakingly to read individual words, cannot read at a conversational pace, and do not use any expression in their reading, the results are a lack of comprehension of what has been read. They also indicate that fluency skills are critical to enable readers to comprehend text without putting too much consideration on decoding. Hudson, Isakson, Richman, Lane, and Arriaza-Allen (2011) agree by specifying that having substantial reading disabilities regarding decoding and word-level reading also greatly weakens the area of comprehension. Inability to read fluently results in a poor vocabulary and a breach in comprehension (Corcoran & Davis, 2005).

In one study, authors state that students that have difficulty reading fluently use their focus on each word rather than overall text, resulting in poor comprehension (Kuhn, Rasinski, &

Zimmerman, 2014). Reading fluency and active text comprehension are problematic areas for students with disabilities and difficulties in these areas almost guarantee problems with comprehension (Gormley, Kubina, & Therrien, 2006). The results of a study by Basaran (2013) could indicate that speaking speed and reading speed should be similar in order to comprehend. The results also indicated that there is a noteworthy relationship between prose and comprehension, as well as on writing skills.

Another study indicated that two fluency intervention strategies that were not targeting comprehension did have positive effects on comprehension (Hawkins, Marsicano, McCallum, Musti-Rao, & Schmitt, 2015). Carrier, Fritz, and Neddenriep (2011), found increases in both fluency and comprehension for four out of the five participants in their study and Anthony, Denton, Fletcher, and Francis (2006) found significant effects on word lists and connected text after intensive fluency interventions. Cartledge, Gibson, Keyes, and Yawn (2014) looked at comprehension after implementing their fluency interventions and by using a procedure called word retell fluency, they found an improvement in the number of words the students could recall in relation to the passages read. This finding also supports the relationship among comprehension and fluency.

Another study indicates that up to 40% of fourth-grade students' reading success is limited due to inadequate fluency skills (Paige & Magpuri-Lavell, 2014). The authors of one study looked at interventions in upper elementary grades and found that these interventions may be less effective because they focus on comprehension and comprehension depends on several other reading components to be in place, including fluency (Montanaro et al., 2011). According to Chard, Vaughn, and Tyler (2002), guided oral reading programs demonstrate gains in both fluency and comprehension. Sample (2005), suggests that fluency interventions can be

assimilated into most instructional situations and have been shown to increase skills in both fluency and comprehension

All of the aforementioned studies indicate a relationship between improved fluency and increased comprehension; however, one study indicated that reading speed was not a dependable gauge of comprehension (Hausmann, Kloos, Lyby, O'Brien, & Wallot, 2014). Anthony, Denton, Fletcher, and Francis (2006) believed from their results that some students were at such a low level of decoding and fluency, any improvement in those skills would impact comprehension as well. If the lower level components of reading are accomplished routinely, more difficult components such as comprehension can be performed more efficiently as well (Hudson, Isakson, Richman, Lane, & Arriaza-Allen, 2011).

### **Intervention Strategies: Repeated Reading, Listening-While-Reading, Computer Models**

Reading problems in students vary greatly and may depend on different types of learning disabilities, which is why a variety of interventions may be needed in order to meet the needs of each student. Student ability, cognition, motivation, language skills, and background can greatly impact their reading, which is why the areas of struggle should be focused on when implementing any type of intervention. (Fälth, Heimann, Gustafson, Svensson, & Tjus, 2013). Swanson and Vaughn (2010) indicate that almost 45% of all students with disabilities are identified as having a specific learning disability and elementary students account for nearly half of that 45%. Resource room or special education settings provide services to 40% of students with a specific learning disability between the ages of 6 and 21 (Swanson & Vaughn, 2010).

Interventions for students with reading difficulties or disabilities must be fitting to student needs and use effective strategies to be successful (Montanaro et al., 2011). Numerous programs are in place for reading interventions and specifically fluency interventions, however, Corcoran

and Davis (2005) point out that classroom programs that model fluent reading are not often found included in the curriculum, however, they recommend that fluency programs be implemented in the primary grades. Programs that do use direct fluency instruction usually use at least one of three models: repeated reading, listening-while-reading, or computer models. Some programs may include aspects from more than one of these strategies.

Repeated reading is the idea of students reading the same passage repetitively to an adult until a set goal is met (Sample, 2005). Corcoran and Davis (2005) specify that repeated readings have presented to be effective in improving both fluency and comprehension. Repeated readings may be performed a number of different ways but may not be the best strategy for improvement of expression (Sample, 2005). Studies have shown that repeated reading strategies can improve student fluency and comprehension, even if the student has a disability (Hawkins et al., 2015).

Repeated reading strategies are frequently suggested for students with reading difficulties and studies show an increase in word recognition and rate (O'Connor, Swanson, & White, 2007). Swanson and Vaughn (2010) also support the evidence that repeated reading strategies increase the oral reading fluency in students with specific learning disabilities. However, repeated readings have been shown to improve comprehension of one passage but that comprehension has not transferred to a new passage (O'Connor, Swanson, & White, 2007) but according to Rasinski (1990) repeated readings may lead to transference of increased fluency skills to text that the reader had not yet been exposed to. Montanaro (2011) suggest that forthcoming studies look into fluency of words that would be found in various instructional texts to help with transference among expository text.

Another limitation of repeated readings is that they may not result in an increase in student interest or motivation (Corcoran & Davis, 2005). Readers' theater is a form of repeated

reading that may be more apt to appeal to student interest and motivation. Readers' theater also allows for practice in expression and intonation. Students who may not routinely get the opportunity to read orally can practice and perform, which may result in an increase in confidence and motivation. The study by Corcoran and Davis (2005) used a readers' theater program and showed a positive result on student attitudes and confidence. Special education students also showed an increase in fluency.

One study discusses an intervention strategy to be used along with repeated reading (Gormley, Kubina, & Therrien, 2006). Question generation has been found to work well along with repeated reading and the two can be joined into a single intervention program for students with an instructional reading level between first and third grade. In this program, students reread passages until a set criterion is achieved while getting feedback on errors. Once the goal is met, students will answer questions regarding the passage. Using an intervention program with these two components allows for work on two skills at once, thus enhancing fluency and active text comprehension. This strategy requires little instructional time and is simple to implement.

Listening-while-reading is a strategy where the student uses prerecorded passages to listen to and read along with (Hawkins et al., 2015). The study by Hawkins (2015), found that the listening-while-reading strategy was more efficient and did not need as much supervision as repeated reading. Hawkins (2015) also indicated that when taking into account the time spent and results of this strategy, it seems to have resulted in a faster rate of learning. Listening-while-reading allows for the reader to read along with a version of the same text being read orally. This strategy may be more beneficial to the teacher because it allows for implementation in groups, one-on-one, or individually without assistance.

When comparing repeated reading with listening-while-reading, gains seem to be overall very close, however, listening-while-reading may improve students phrasing while reading, resulting in easier transition into independent repeated reading (Rasinski, 1990). Rasinski (1990) also found that both strategies increased third-grade students' reading fluency and one strategy did not prove to be greater than the other. Repeated reading may hinder student motivation and interest, especially over long periods of time. This strategy may also be more difficult for teachers to implement, particularly during primary readings of the passages.

Computer models vary but often allow for more independent practice (Cartledge, Gibson, Keyes, & Yawn, 2014). Once students are trained on a computer model program, supervisor involvement is minimal compared to other strategies (Cartledge, Gibson, Keyes, & Yawn, 2014). One computer program, *Read Naturally*, combines reading with a model on CD or computer, repeated readings, and goal-setting (Carrier, Fritz, & Neddenriep, 2011). Chard, Tyler, & Vaughn (2002) reported that computer models may not be as effective as teacher modeling but more effective than no model at all.

According to Fälth, Heimann, Gustafson, Svensson, and Tjus (2013), computer intervention programs can appeal to students in a new way by using an interactive approach with animation and sound, as well as providing instant feedback to the user without needing the assistance of a teacher. The use of a computer program may also motivate a student more than other intervention strategies. Computer intervention models have also proved effective for students with reading problems. Studies have shown results where students made substantial improvements that were still apparent after two years following the study. Their study used two groups of students, one with general education students and the other with students receiving special education services, combined with three computer model intervention programs. Their

study indicated that the use of a combination of the three computer programs was most beneficial and the improvements were still evident after one year. The results also showed a decrease in the number of students needing special education services after the interventions. (Fälth et. al, 2013)

Whichever strategy is used, some overall suggestions include graphing progress as a visual and a motivator for students (Sample, 2005), using strategies that both improve academic skills and quickly improve student performance (Hawkins et al., 2015), and provide corrective feedback throughout to improve student errors (O'Connor, Swanson, & White, 2007). There is also evidence that regular feedback and practice, including guided reading, will improve fluency and comprehension (Sample, 2005). One must also take into account the cost and resources of implementing strategies for fluency and reading interventions (Hawkins et al., 2015). Cartledge, Gibson, Keyes, and Yawn (2014) also stress the importance in looking at the resources and time available before implementing interventions. Some schools may have the funds to purchase computer programs which may save time for the teacher or other resources while another school may have available time to implement the strategies that are more cost-efficient.

### **Relevance of Setting Criteria**

According to Arriaza-Allen, Hudson, Isakson, Lane, and Richman (2011), setting criterion and providing feedback are important strategies in interventions and can lead to an increase in fluency. It has also been found that providing remedial feedback during and after reading increases reading fluency (Arriaza-Allen et. al., 2011). Performance criteria should be set individually for each passage and the student will reread the passage until the goal is met. Goals may be set by the norms of 53 correct words per minute (cwpm) for first grade, 89 cwpm for second grade, 107 cwpm for third grade, and 123 cwpm for fourth grade (Gormley, Kubina, & Therrien, 2006).

Cartledge, Gibson, Keyes, and Yawn (2014) also emphasize the importance of setting performance criteria and that if students practice reading the repeated reading passages at the rate that should also be used on unfamiliar passages, they may transfer those skills to the unfamiliar passages. During their study, two phases were implemented. Phase I only required students to meet a criteria of 40 cwpm (first grade benchmark) and Phase II increased criteria based on individual student performance in Phase I. Phase I showed only minimal increases and even some decreases on transfer to unfamiliar passages while Phase II revealed much greater increases. They recommend setting criteria according to student performance as a strategy included in reading interventions.

One study used a fixed criterion versus an individual improvement criterion. It found the fixed criterion was more effective but the individual appeared to transfer to unknown text more efficiently. Another study required a set criterion for both fluency and comprehension and students practice until they met the goal, and the results showed that all the students improved (Chard, Tyler, & Vaughn 2002).

The review of the above-mentioned literature and findings emphasize the importance of fluency and support the idea of a positive relationship between fluency and comprehension. The studies also found that repeated reading, listening-while-reading, computer models, and setting criteria according to student performance are effective strategies for improving fluency. The review also found evidence that students in upper elementary grades need more instruction in fluency and comprehension skills in order to transfer those skills to informational and expository text. The purpose of this study is to use fluency interventions to increase the fluency skills of students with learning and intellectual disabilities to see if an increase in comprehension naturally occurs.

### **Chapter 3: Procedures and Methods**

#### **Hypothesis.**

Elementary students with specific learning disabilities that received direct fluency interventions would demonstrate growth in comprehension on the STAR Reading Assessment.

#### **Settings and Participants.**

The population identified for this study were elementary aged students identified with specific learning disabilities. The target population was localized to a rural West Virginia community. The participants were male and female of indiscriminate race.

The sampling method used was purposive sampling in that a sample that was believed to be representative of the given population was selected. The advantage of this type of sampling is that there is a clear selection criterion; elementary aged with specific learning disabilities. The disadvantage is that this sample size was small and is probably not able to be generalized. Teacher participant was qualified for teaching elementary students and has been in a special education classroom for five years.

#### **Variables**

The basis of this study was fluency interventions and comprehension gains, however, exposure to curriculum in other settings may have impacted the overall results and presented limitations to this study. The independent variable in this study was the fluency interventions being administered. The dependent variable was the scaled score on the STAR Reading Assessment measuring student comprehension.

### **Threats to Validity**

Threats to the validity of the study include the number of interventions implemented and other reading instruction outside of the resource room interventions. Another threat to the internal validity was the small selection of possible participants and although all have been identified with a specific learning disability, the levels of ability vary among the students. Although specific learning disabilities account for a large number of special education students, the ability to replicate this study and apply it to another group may be difficult, thus threatening the external validity.

### **Procedures**

The teacher that implemented the interventions and assessments has been trained in the practices for each. The participants took an initial STAR Reading Assessment and the scaled score was documented for each. Participants then took part in fluency interventions for approximately 6 weeks, 3 to 5 times per week. Sample passages that were used for the fluency interventions can be found in the Appendices. Fluency gains or losses were graphed by participants during each intervention session. Participants took a final STAR Reading Assessment and the scaled scores were documented. Scaled scores were compared, along with fluency gains or losses, to identify comprehension gains or losses.

### **Measures**

Renaissance Place STAR Reading Assessment was used to assess comprehension gains. Scaled scores are raw scores which are determined by the question difficulty during the assessment. Scaled scores are used to track student progress, skill areas needed to improve, and proficiency. STAR Reading Assessment has approximately 34 questions that adjust in difficulty

as the student continues through the test. Sample questions from the STAR Reading Assessment can be found in the Appendices.

### Chapter 4: Data Analysis

The purpose of this study was to increase fluency skills through the use of fluency interventions and evaluate any comprehension gains. The participants in the study were given a pre-test using the STAR Reading Assessment to assess comprehension. After the pre-test was given, students were provided fluency interventions.

The strategy used for the fluency interventions was repeated reading, where students were given a passage to perform a “cold” read for one minute. Students would mark errors as they read and once the minute was completed, they would count and graph the number of words read correctly per minutes (WCPM). A variety of repeated readings would be done with the same passage, including partner reading, independent reading, and teacher readings to ensure students were correcting the words they had previously gotten wrong and to reinforce the fluency of the passage. Figure 4.1 shows student results from the “cold” reads. As students progressed, the Lexile levels of each passage would become more difficult, so even if a student’s number of words correct stays the same, they are still improving their fluency because of the degree of difficulty of the passages. Students in Group 1 are in second and third grade classes, while students in Group 2 are in fourth grade. Each group is in the resource room during a different class period.

As shown in Figure 4.1, the students from Group 1 either increased or maintained their number of correct words per minute on their “cold” reads, however, the Lexile level of each passaged increased in difficulty, which indicates that fluency is improving. Group 2 students all increased both their number of words read correctly per minute as well as the Lexile difficulty, this also indicates an increase in fluency. Figure 4.1 also gives the average for each group. Group

1’s fluency rate increased an average of 6 WCPM. Group 2’s fluency rate increased an average of 16 WCPM.

<b>Figure 4.1 Fluency Intervention Results (Words Correct Per Minute)</b>			
<b>Group 1</b>	<b>Level 1 (Lexile -190)</b>	<b>Level 7 (Lexile 50)</b>	<b>Level 8 (Lexile 70)</b>
Student #1	24 WCPM	20 WCPM	37 WCPM
Student #2	46 WCPM	24 WCPM	45 WCPM
Student # 3	39 WCPM	35 WCPM	43 WCPM
Average	36 WCPM	26 WCPM	42 WCPM
<b>Group 2</b>	<b>Level 1 (Lexile -190)</b>	<b>Level 8 (Lexile 70)</b>	<b>Level 16 (Lexile 220)</b>
Student #4	74 WCPM	97 WCPM	94 WCPM
Student #5	73 WCPM	82 WCPM	85 WCPM
Average	74 WCPM	90 WCPM	90 WCPM

After approximately six weeks of fluency interventions, students were given the STAR Reading Assessment as a post-test. Figure 4.2 shows the scaled score results of the pre-test and post-test for each student, as well as an average. The students in Group 1 all increased their scaled scores and an overall average of their scores shows a 10-point increase from pre-test to post-test. One student in Group 2 did increase their score by 50 points, however, the other student demonstrated a decrease of 6 points. This gives an average increase of 22 points for Group 2.

Overall, the results indicate a slight improvement in both fluency and comprehension, however, the results are not so statistically significant to indicate that the fluency interventions were effective on comprehension for elementary students with learning disabilities.

<b>Figure 4.2 STAR Reading Comprehension Results</b>		
<b>Group 1</b>	<b>Pre-Test (Scaled Score)</b>	<b>Post-Test (Scaled Score)</b>
Student #1	99	101
Student #2	89	97
Student #3	69	89
Average	86	96
<b>Group 2</b>		
Student #4	107	101
Student #5	244	294
Average	176	198

## **Chapter Five: Discussion**

The purpose of this study was to increase fluency skills through interventions in elementary students with learning disabilities and evaluate any comprehension gains. The review of the literature indicated that comprehension is impacted by fluency skills. During the study period, students were given fluency interventions using repeated readings and increasing in difficulty as students improved.

### **Interpretation of Results**

The hypothesis of this study was that an increase in fluency skills for elementary students with specific learning disabilities would also result in an increase in comprehension. The effectiveness of the fluency interventions was determined by the number of words read correctly per minute. Each student would perform a “cold” read, or first read, of the passage and graph the results. The “cold” read was the best indicator of transference of skills from the previous passages. All students demonstrated either an increase in the number of words read correctly or maintaining the number of words read correctly with increasing difficulty of the passages.

Although students did show improvement in their fluency skills, the results from the pre-test and post-test that assessed comprehension were mixed. Overall, the average of the students’ comprehension scores did increase, however, there were only two students that demonstrated a significant increase in their scores and one student that decreased from the pre-test to the post-test.

### **Informal Observations**

It is noted that the study did lose ten instructional days due to weather and the scheduled spring break. Regardless of these missed days, students continued to improve their fluency skills through the repeated reading fluency interventions. Student attitudes toward the fluency

interventions were also noted. Students were positive about the fluency activities and showed enthusiasm for the competition of trying to improve their scores and the graphing of their scores. Students also indicated their enjoyment of timing and competing against one another.

### **Limitations to the Study**

Although there was an overall increase in both fluency skills and comprehension scores, there are limitations to this study. A particular limitation to this study is its size. The study was performed in a small, rural elementary school with only five available participants. Another limitation would be the loss of instructional days causing disruptions in the fluency interventions. The last limitation is the selection of the pre-test and post-test that was used. Some of the questions on the pre-test and post-test were at a more difficult Lexile level than the fluency passages that had been used in the interventions.

### **Conclusion**

Although results from this study do demonstrate an increase in both fluency skills and comprehension gains, there was not a significant increase in scores. However, these increases did provide students with more self-confidence and self-awareness in their ability to improve. The student and the teacher participants have indicated a desire to continue the use of the fluency interventions for the remainder of the school year.

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## Appendix A: Pre/Post Test Information

Renaissance Place STAR Reading Assessment was used to assess comprehension gains. Scaled scores are raw scores which are determined by the question difficulty during the assessment. Scaled scores are used to track student progress, skill needed to improve, and proficiency. STAR Reading Assessment has approximately 34 questions that adjust in difficulty as the student continues through the test.

### STAR Reading Assessment Samples

**Holly Hayden**

Only one knight \_\_\_\_\_ to face the dragon.

1. treated
2. priced
3. dared
4. rooted

**Trisha Ritter**

Which sentence is an example of personification?

1. Life is a river in which you paddle.
2. She sells seashells by the seashore.
3. The leaves danced in the autumn wind.

**Holly Hayden**

Join the kickball team today! Kickball is fun and great exercise too. Players get to experience being part of a team. They learn to become good sports and to follow directions. The team shirts we wear are bright orange. Join today!

The paragraph gives reasons people should join the team. What is the weakest reason given?

1. Players get to be part of a team.
2. Kickball is fun and great exercise.
3. The team shirts are bright orange.

### Word Meaning

**Angela Miller**

The cloud bank expanded and the wind increased as the weather continued to deteriorate.

Which word is a synonym for deteriorate?

1. worsen
2. brighten
3. freeze

### Comprehension Strategies

**Holly Hayden**

Simon and his family went to Hidden Lake last summer. Simon and his brother Andrew had different plans for the vacation than their parents did. The boys wanted to hike and mountain bike. Their parents wanted to do water sports. On the first day, Simon and Andrew hiked on a trail around the lake. Meanwhile, their parents went fishing and then boated and swam. Around the campfire that night, all four agreed that it had been a perfect day.

How was the problem solved?

1. They all did the things they liked and had a great day.
2. The boys swam even though they didn't want to.
3. Everyone went fishing and boating on the lake.

### Analyzing Literary Text

**Trisha Ritter**

During her visit to South Korea, Catherine attended classes at her friend Sun-Hee's school. One afternoon on the subway, a seated passenger reached for Catherine's book bag as the train started. Unsure of what was happening, Catherine swung around to investigate. Sun-Hee explained that the passenger's purpose was only to relieve Catherine's burden. Seated passengers frequently extended this courtesy to those who had to stand.

How does the setting affect Catherine's reaction to the passenger?

1. It is afternoon, so the girls are too tired to carry their bags. They are glad the passenger will help.
2. The passenger is curious about what is in the bag. It is polite for Catherine to hand over the bag.

### Picture 1

The questions in the first part of the test have a sentence with a word missing. There will be a list of three or four words that could fit in the blank. Your job is to choose the word that best completes the sentence.

**Kenneth Dukes** Stop Test

The sky is \_\_\_\_\_.

1. blue
2. dog
3. down

**Anthony Jacobson**

I left the door open, so it's my \_\_\_\_\_ the dog ran in.

1. gift
2. fault
3. act
4. idea

### Picture 2

For grades 3–12, the last five questions in the first part of the test will each have more than one sentence. One of the sentences will have a word missing. From the list of answers, choose the word that best completes the sentence. You will be given extra time to answer these questions, so don't rush.

**Kenneth Dukes** Stop Test

In youth, the tulip-tree, or *Liriodendron Tulipifera*, the most magnificent of American foresters, has a trunk peculiarly smooth, and often rises to a great height without lateral branches; but, in its riper age, the bark becomes gnarled and uneven, while many short limbs make their appearance on the stem. Thus the difficulty of \_\_\_\_\_, in the present case, lay more in semblance than in reality.

1. invasion
2. ascension
3. accession
4. secession

**Kan Singleton** 11/24

In youth, the tulip-tree, or *Liriodendron Tulipifera*, the most magnificent of American foresters, has a trunk peculiarly smooth, and often rises to a great height without lateral branches; but, in its riper age, the bark becomes gnarled and uneven, while many short limbs make their appearance on the stem. Thus the difficulty of \_\_\_\_\_, in the present case, lay more in semblance than in reality.

1. invasion
2. ascension
3. accession
4. secession

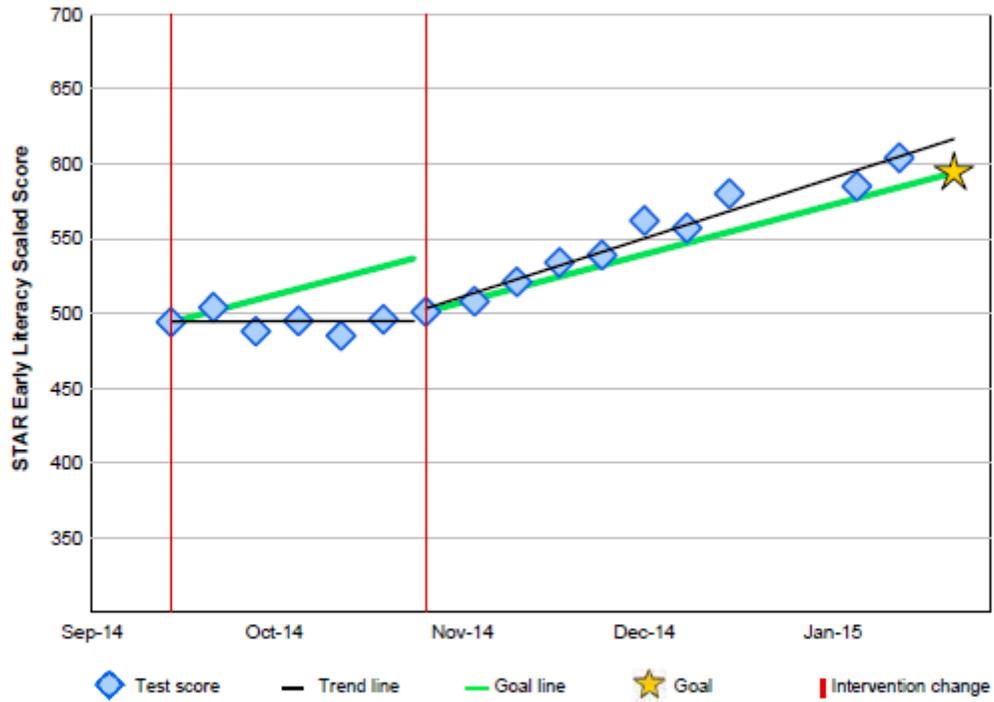
Web browser



**Eggers, Rachel**

Grade: 1  
ID: P234U8

Class: G1 - Rashka  
Teacher: Rashka, C.



**Rachel's Current Goal**

Goal: 594 SS (Ambitious)	Goal End Date: 1/23/2015	Expected Growth Rate: 7.5 SS/Week
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**Appendix B: Fluency Intervention Passage Samples**

**Yes, I Will**

① ○ ○

Will you get up? Yes, I will.	7
Will you put your shoes on? Yes, I will.	16
Will you eat? Yes, I will.	22
Will you get in the car? Yes, I will.	31
Will you go to school? Yes, I will.	39
Will you read at school? Yes, I will.	47
Will you be too loud in class? I will try not to.	59
Are you sure? No, I am not sure.	67
Will you have fun? Yes, I will.	74

**I Hope You Feel Better Soon**

○ ⑰ ○

I am sad today.	4
Why are you sad?	8
I lost my toy pig, Fred. I left him at the park.	20
Did you go back and look for him?	28
Yes, but he was gone. I think some other kid took him.	38
I am so sorry. It feels very bad to lose a toy you love. I hope you feel better soon. Do you have another toy animal that you love?	40
Yes, I have my toy dog, Max. Max helps me feel better about Fred. I am still sad about Fred, but I will be OK.	51
That is good. Here is a hug for you.	61
	69
	78
	87
	94
	103