Effects of the Fluent Reader Program on the Fluency Rates of a High School ESL Class

An Action Research Paper

By

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Abstract

With the English Language Learners’ population rapidly growing in our schools, administrators and teachers alike feel inadequate and uninformed on how to provide effective instruction for these students. One of the challenges faced by educators is how to teach these students to read fluently in the English Language. *Fluent Reader* is a computer program by Renaissance Learning which employs repeated and modeled reading instruction to increase the fluency of English Language Learners. To test the efficiency of this product, an experiment was conducted on a high school ESL class consisting of seven students. Students in the experimental group worked on *Fluent Reader* for eighteen weeks. Students were pre, mid and post tested using WCPM (words correct per minute) which is a curriculum-based measurement that is widely used for assessing fluency. The pre and post data were analyzed by comparing group means. Data analysis strongly suggested that regular use of *Fluent Reader* may have been instrumental in improving the fluency rates of all seven participants.
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Background

With the English Language Learners’ population rapidly growing in our schools, administrators and teachers alike feel inadequate and uninformed on how to provide effective instruction for these students. The growing reading achievement gap between multicultural students and mainstream students has been a cause of concern for many years (Au, 2005). One of the problems uniformly met is the inability to read fluently in a second language. Fluency can be defined as the ability to read quickly and accurately (Armbruster, Lehr & Osborn, 2000). The final report of the National Reading Panel (2000) defines a fluent reader as one who can read orally with speed, accuracy and uses proper expression. Fluency is a very important part of the five areas of reading instruction, which are comprised of phonemic awareness, phonics, fluency, vocabulary, and text comprehension (National Reading Panel, 2000). A reader who is completely fluent can read and decode effortlessly and accurately, thus allowing the reader more time to correctly comprehend the text (Wolfe, 2003). Computer based reading programs can facilitate students’ reading comprehension and increase their reading speed. Reading teachers should be encouraged to use computers in their reading programs since they bring positive results to their students’ achievement (Alkahtani, 1995). One of the computer based reading programs available today is Fluent Reader. It uses two research-based procedures, modeled and repeated readings, to attempt to increase the students’ fluency. Rasinski (2005) states that some of the best practices for teaching reading fluency include modeling reading fluency for the students by providing oral reading support to them while they read along, and to expose the students to repeated readings of text while focusing on proper and meaningful phrasing. The
report of the National Reading Panel (2000) identified repeated guided oral reading specifically for its effectiveness in helping all students across a range of grade levels with not only fluency, but also word recognition and comprehension. Samuels, in his classic article, “The Method of Repeated Readings,” introduced the Repeated Reading technique, which was based on his automaticity theory. This theory suggests that fluent readers are readers who can decode text automatically thus leaving more time and attention free for better comprehension. One of the best ways to achieve automaticity is through practice and repeated readings (Samuels, 1979).

As reading speed increased, word recognition errors decreased. As the student continued to use this technique, the initial speed of reading each new selection was faster than initial speed on the previous selection. Also, the number of re-readings required to reach the criterion reading speed decreased as the students continued the technique. The fact that starting rates were faster with each new selection and fewer re-readings were necessary to reach goals indicates transfer of training and a general improvement in reading fluency. (Samuels, 1979, p. 377)

In 1997, the Reading Teacher reissued this article. For that publication, Samuels reaffirmed his initial findings stating that they had been replicated in almost 200 studies. He continued to state that there is a transfer of fluency to other parts of the text, even to parts that were not part of the repeated readings, and that some studies have reported an increase of reading comprehension through repeated readings. He finishes by stating that repeated reading is now the most commonly used reading technique to help struggling readers achieve reading skill (Samuels, 1997).

Problem

The demographic explosion of the ELL student population in the United States schools has resulted in a challenge for teachers to teach these students to read fluently in the English language. Many of these students have not had adequate instruction in their native language and transplanting their reading skills to a new language becomes a very challenging task for them
and their teachers. Because of the fact that ELL students are new to the English Language they do not possess the same reading ability and fluency as their English-speaking counterparts. This can result in lower educational attainment and may lessen their chances to acquire the necessary skills to graduate from high school, attend college and obtain a good job.

Purpose

The purpose of this research paper will be to address the problem of low reading fluency levels of ELL students and investigate the implementation of Fluent Reader, a computer program by Renaissance Learning, which employs repeated and modeled reading to improve the fluency rates of ELL (English Language Learners) students. The Fluent Reader program is a product designed by Renaissance Learning for the specific purpose of enhancing students’ fluent reading skills. Although Fluent Reader can be used with all students, it is part of a program designed specifically for English Language Learners. The other part of the program is called English in a Flash which helps increase vocabulary. These programs were purchased by the school district as an added instructional aide for the district’s ESL students. The author does not endorse this program, but conducted research to give feedback on the instructional quality of Fluent Reader on the selected ESL students.

Hypothesis Statement or Question

This research paper will address the following question: will using Fluent Reader, a computer based reading program by Renaissance Learning, which employs repeated and modeled reading, improve the fluency rates of seven ELL (English Language Learners) high school students? For this paper, fluency will be defined as the ability to read quickly and accurately (Armbruster, Lehr & Osborn, 2000).
Methodology

Design

This study employed a quantitative design. The results were analyzed and presented using descriptive statistics. The purpose of this study was to test the effectiveness of the Fluent Reader program in improving fluency rates of ELL students using an experimental design at the high school level. Fluent Reader is software that helps students practice and develops fluency skills. This program allows students to select reading passages from a variety of topics at progressing reading levels. The students listen to a modeled oral reading of the passage three times at three different rates of speed while they follow along with the text. They have the opportunity to click on an unknown word to get the definition. After the students listen to the modeled readings, they then have the opportunity to record themselves reading the same passage. They can replay their individual recordings self-correct and re-record. They are also able to return to the modeled passage and click on a specific sentence which is causing them difficulties and listen to it again. When they are finished with their recordings, they are given comprehension questions from the passage they have just read.

The students used the Fluent Reader program regularly over an eighteen-week period consisting of two marking periods. They were instructed to use the program twenty times for each marking period and to record their progress on a chart. As an incentive, their progress became part of their ESL grade on their report cards. Time was allotted during their ESL class to work on the program. All students were pre, mid and post tested using the Curriculum Based Measurement (CBM), also known as a running record, which measures correct words per minute (WCPM). Permission forms were sent home for parental approval to allow use of their
children’s results in this study. The school principal gave oral permission to use the results and indicated that the only permission necessary was parental permission.

Subjects and Grouping

Participants for this study were not randomly chosen. One group was used for this study. The group was composed of high school students from an ESL (English as a Second Language) class in Smyrna, Delaware. The class consisted of seven students, and all seven students participated. The group of participants consisted of two ninth graders, four tenth graders and one eleventh grader. Their reading levels, as determined from their Accelerated Reading diagnostic reports, ranged from a non English reader to a sixth grade reading level. The Renaissance Learning computer software for the Accelerated Reader tests the student’s comprehension on books at various readability levels. The length of time of the students in the United States varied from 2002 to 2005.

Table 1
Participant Information.

<table>
<thead>
<tr>
<th>Students</th>
<th>Grade</th>
<th>Country of Origin/Language</th>
<th>Reading Level</th>
<th>Entry Date to the USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9</td>
<td>Mexico/Spanish</td>
<td>Non-Reader</td>
<td>9/6/2005</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>France/French</td>
<td>6.5</td>
<td>8/30/2005</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>Liberia/Non-USA English</td>
<td>6.6</td>
<td>9/20/2005</td>
</tr>
<tr>
<td>4</td>
<td>11</td>
<td>Liberia/Non-USA English</td>
<td>6.4</td>
<td>9/4/2001</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>Mexico/Spanish</td>
<td>2.7</td>
<td>9/9/2002</td>
</tr>
<tr>
<td>6</td>
<td>10</td>
<td>Mexico/Spanish</td>
<td>2.4</td>
<td>9/22/2003</td>
</tr>
<tr>
<td>7</td>
<td>10</td>
<td>Liberia/Non-USA English</td>
<td>4.4</td>
<td>2/27/2001</td>
</tr>
</tbody>
</table>

Table 1 relates the names, grades, country of origin, current reading level and entry dates into the United States schools.

Materials
Reading Test Passage for Curriculum Based Measurement.

WCPM (words correct per minute) is a curriculum-based measurement (CBM) that is widely used in assessing fluency. It focuses on rate and accuracy. The technique involves having the teacher listen to a student read aloud from an unpracticed passage for one minute. The teacher counts the number of words the student reads correctly during that minute (WCPM). WCPM has been shown to be a reliable and valid measurement of reading ability (Hasbrouck & Tindal, 2006). An eighth grade passage was selected from the Analytical Reading Inventory Comprehension Assessment for All Students Including Gifted (ARI) created by Mary Lynn Woods and Alden J. Moe (2003). Best practices instruct that when conducting a fluency test using CWPM a passage should be chosen based on the instructional grade level (Woods & Moe, 2003). The eighth grade passage was used as opposed to the ninth grade passage since, in the researcher’s opinion, the ninth grade passage would be too difficult for this group of students to read orally, due to their varied reading levels.

Student Documentation Sheet.

Each student was responsible for completing twenty passages for each of the two marking periods and recording their work on the Student Documentation Sheet. The number of passages was recorded in the teacher’s grade book and was used as part of the ESL grade for the marking period.

Accelerated Reader.

Accelerated Reader is computer software by Renaissance Learning that tests the student’s comprehension on books at various reading levels. The initial reading level is determined by the results of the STAR reading assessment. The student reads a book on his/her reading level, takes a comprehension test upon completion of the book, and then immediately receives feedback and
a score. The student’s reading level changes throughout the year based on the results of the scores of these comprehension tests.

*Fluent Reader (FR).*

Fluent Reader is software that helps students practice and develops fluency skills. This program allows students to select reading passages from a variety of topics at progressing reading levels. The students listen to a modeled oral reading of the passage three times at three different rates of speed while they follow along with the text. They have the opportunity to click on an unknown word to get the definition. After the students listen to the modeled readings, they then have the opportunity to record themselves reading the same passage. They can replay their individual recordings self-correct and re-record. They are able to return to the modeled passage and click on a specific sentence which is causing them difficulty and listen to it again. When they are finished with their recordings, they are given comprehension questions from the passage they have just read.

*Computers.*

The students had access to a small computer lab adjacent to the classroom. *Fluent Reader* was installed on each computer. Microphones and earphones were given to each student for when they worked with the program.

*Data Gathering Techniques/Instruments/Plans*

*Pre-Test, Mid-Test and Post Test.*

First, all students were pre-tested using an eighth grade passage from the *ARI*. The students read the whole passage orally while the examiner marked off, after one minute, the last word that the student read so that a correct word per minute (WCPM) rate could be determined. Word recognition errors were subtracted from the score which resulted in a Correct Word Per
Minute (WCPM) score. This test was re-administered after nine weeks and then was
administered again at the end of eighteen weeks.

Treatment

The treatment phase of the study lasted 18 weeks, beginning on January 21, 2006, and
ingoing on June 2, 2006. This time span was designed to spread over two marking periods.
During their ESL class, which lasted 70 minutes, the participants were given thirty minutes twice
a week to work on Fluent Reader. They were instructed that they must complete a minimum of
twenty passages per marking period, which averaged out to two passages per week. The students
recorded the passages they read on a documentation sheet, which was used as part of their ESL
grade. Honesty and work ethic were assured by teacher monitoring and by completion of the
Student Documentation Sheet.

Post Test Phase.

Gain scores based on growth from pretest to post test were analyzed to determine
difference in fluency rate using a Curriculum Based Measurement (WCPM).

Data and Data Tables – Results

This research examined the following question: Does the Fluent Reader improve ESL
students’ reading fluency as measured by using Curricular Based Measurement? In order to
address this question, three tests were given over an eighteen-week period and the differences
between the scores were compared. The unit of analysis was the gain score in correct words read
per minute (WCPM) from pretest, mid-test and post test. The mean difference between the pre-
test and post-test was compared and analyzed.
Table 2.


<table>
<thead>
<tr>
<th>Students</th>
<th>WCPM PRE TEST A</th>
<th>WCPM MID TEST B</th>
<th>WCPM POST TEST B</th>
<th>Sum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>56</td>
<td>60</td>
<td>70</td>
<td>186</td>
<td>62</td>
<td>7.21</td>
</tr>
<tr>
<td>2</td>
<td>84</td>
<td>120</td>
<td>135</td>
<td>339</td>
<td>113</td>
<td>26.21</td>
</tr>
<tr>
<td>3</td>
<td>96</td>
<td>98</td>
<td>106</td>
<td>300</td>
<td>100</td>
<td>5.29</td>
</tr>
<tr>
<td>4</td>
<td>103</td>
<td>107</td>
<td>115</td>
<td>325</td>
<td>108</td>
<td>6.11</td>
</tr>
<tr>
<td>5</td>
<td>92</td>
<td>102</td>
<td>112</td>
<td>306</td>
<td>102</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>56</td>
<td>77</td>
<td>81</td>
<td>214</td>
<td>71</td>
<td>13.42</td>
</tr>
<tr>
<td>7</td>
<td>112</td>
<td>118</td>
<td>121</td>
<td>351</td>
<td>117</td>
<td>4.58</td>
</tr>
</tbody>
</table>

Table 2 shows the individual correct words per minute scores of the pre, mid and post tests as well as the mean and the Standard Deviation of each student.

It can be seen that 100% of the participants show an increase in WCPM throughout the three tests.
Chart 1. Comparison of Individual WCPM Scores from All Three Tests

As seen in Chart 1, each student’s WCPM scores increased throughout the series of tests.
Chart 2. Individual Percentage Growth Chart of Pre and Post-Tests.

Chart 2 shows the percentage of growth improvement between the pre and post-tests for each student. All students showed growth improvements between the pre and post-tests. Student Two had the most growth with a 60% increase. Student Seven improved the least with an 8.0% growth.
Table 3.

**Total Group Means and Standard Deviations of Pre, Mid and Post Tests**

<table>
<thead>
<tr>
<th>WCPMTests</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Test A</td>
<td>85.57</td>
<td>21.99</td>
</tr>
<tr>
<td>Mid-Test B</td>
<td>97.42</td>
<td>21.84</td>
</tr>
<tr>
<td>Post-Test C</td>
<td>105.71</td>
<td>22.74</td>
</tr>
</tbody>
</table>

Table 3 shows the group means and the Standard Deviation of the Pre, Mid and Post tests.

One can see that there is an increase in means in the pre, mid and post tests, with a mean of 85.57 in the pre-test, 97.99 in the mid-test and 105.71 in the post-test. The Standard Deviation remained fairly consistent for all three tests.

Table 4.

**Difference Scores of the WCPM pre-test and the WCPM post-test**

<table>
<thead>
<tr>
<th>Name</th>
<th>Pre-Test</th>
<th>Post-Test</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WCPM</td>
<td>WCPM</td>
<td>WCPM</td>
</tr>
<tr>
<td>1</td>
<td>56</td>
<td>70</td>
<td>14</td>
</tr>
<tr>
<td>2</td>
<td>84</td>
<td>135</td>
<td>51</td>
</tr>
<tr>
<td>3</td>
<td>96</td>
<td>106</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>103</td>
<td>115</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>92</td>
<td>112</td>
<td>20</td>
</tr>
<tr>
<td>6</td>
<td>56</td>
<td>81</td>
<td>25</td>
</tr>
<tr>
<td>7</td>
<td>112</td>
<td>121</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 4 shows the mean difference scores of the pre and post tests.

Mean Difference Score = 20.14 (SD = 14.76)
Box Plot Graph of Pre and Post Test

Chart 3. Box Plot Pre and Post Test Comparison

<table>
<thead>
<tr>
<th>Box Plot Pretest</th>
<th>Box Plot Post test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum is 56</td>
<td>Minimum is 70</td>
</tr>
<tr>
<td>1st Quartile is 56</td>
<td>1st Quartile is 81</td>
</tr>
<tr>
<td>Median is 92</td>
<td>Median is 112</td>
</tr>
<tr>
<td>3rd Quartile is 103</td>
<td>3rd Quartile is 121</td>
</tr>
<tr>
<td>Maximum is 112</td>
<td>Maximum is 135</td>
</tr>
</tbody>
</table>

The median of the post test is the same as the maximum of the pretest. This means that 50% of the scores on the post-test are higher than the 3rd quartile of the pretest.

The t-test for repeated measures was used to calculate the difference between WCPM Pretest A and WCPM Post test C. Results strongly suggest that regular use of the Fluent Reader Program may significantly improve the reading fluency of this study’s participants. The increase was educationally significant since the $t = 3.611$, and the probability figure (p) shows that there is more than a 99% probability that the change is significant. There is only a 56/10,000 of 1% that this change would occur by chance.

t $(6) = 3.611$, $p < .00056$
t = 3.611
s = 14.76
df = 6
Confidence interval is 6.5 to 33.8 points
\( M_D = 20.14 \)

Discussion of Findings and Conclusions

The definition of fluency is the ability to read accurately and quickly. One of the most commonly used methods to determine fluency is to use Curriculum Based Measurement in the form of Correct Words Per Minutes (WCPM). WCPM assesses the speed with which a student can read a passage orally. In every one of the WCPM assessments for all three tests, the students showed an increase in their word per minute rates as they continued using Fluent Reader. Fluent Reader, by employing modeled and repeated readings, may have allowed the ELL participants more opportunities to familiarize themselves with the vocabulary and structure of the English language, thus aiding in their fluency rates. It is interesting to note the difference in the Mean Difference (\( M_D \)) scores of the participants. Although all participants showed gains, Student Two had the largest gain with a \( M_D \) of 51. This may have something to do with his education in his native country. Student Two came from France, and he had access to an excellent education there. Research says that one of the indications for success in a second language is the quality of education in the student’s first language (Lenters, 2004). The participant with the smallest gain was Student Seven with a \( M_D \) of nine. Student Seven had the highest score on her WCPM pretest with a 112. On her posttest her score was a 121. This student has a fourth grade reading level. According to the Oral Reading Fluency Norms (Hasbrouck & Tindal, 2006), 50% of fourth grade students scored 112 in the winter and 123 in the spring. Student Seven, with her fourth grade reading level, has scores that fall very close to those norms.

The results of this study strongly suggest that Fluent Reader may be an effective method of reading fluency instruction for ELL students at the high school level. This software program
appears to be effective in increasing the number of words that the students were able to read per minute as determined by a CBM assessment tool which determined WCPM.

Limitations

There were some limitations in this study of which the researcher had no control. There was only one study group with no other group with which to compare the results. It would have been interesting to have been able to compare the mean gain scores with another group of ESL students who had not used Fluent Reader. The one study group only had seven students. More students in the study group would have added more data to the study.

Implications

The results of this study strongly indicate that the Fluent Reader program is an effective method of reading fluency instruction for ELL students at the high school level. Since reading comprehension and, in particular, fluency is an ongoing problem for students who are learning a second language, the Fluent Reader software program may be an effective and beneficial tool in the instruction of ELL students.

This action research study supports and reinforces the research and data first initiated by Samuels in 1979. Practice and repeated readings can and do increase the fluency of students.

Recommendations for Continuing or Future Research

1. In the future, it would be beneficial to have a control group who did not use Fluent Reader with which to compare the results. Since all of the ELL students at this particular school district use Fluent Reader, the control group could be a similar group from another school district who did not have access to the program.

2. It would be beneficial to the study to have an experimental group consisting of at least thirty students.
3. The *Fluent Reader* program also allows the teacher to rate prosody. It would be interesting to include and evaluate prosody in a future study.

4. It would be beneficial to add multiple choice questions to the study to see if *Fluent Reader* helps the students to decode and comprehend simultaneously.

5. This same action research study can be performed on early readers to see if the *Fluent Reader* software would increase the fluency rates of second grade ELL students who are still learning to read.

6. It would be interesting to apply the same action research study to mainstream students to see if the results are the same.
References


