Investigating Reading Fluency and Comprehension in Two English Courses

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Abstract

Fluent reading is thought to be essential for developing efficient reading and comprehension abilities. Studies on reading fluency indicate that it can be developed through various means such as extensive reading, repeated readings and timed readings. This article reports on an investigation of the reading rate gains of Shimane University freshman in two classes during a one-semester general English course. One class did timed reading practice (Class A, N = 17) and the other class did timed writing practice (Class B, N = 15). Class A achieved higher reading rate gains (14.4 standard wpm) than Class B (7.64 standard wpm), without a decrease in comprehension. These results inform pedagogy as well as give us a reference point to evaluate the effects of timed reading and writing practice on reading fluency development in this particular setting.

Keywords: timed reading, timed writing, reading rate, reading fluency, second language reading, vocabulary size test

Reading fluency is often an overlooked aspect of reading development in English as a Foreign Language (EFL) programs. However, fluency is instrumental in improving comprehension and reading skills. According to Klauda and Guthrie (2008, p.312), "There is evidence that fluency is both a contributor to and product of comprehension, a view currently espoused by practitioners as well as reading researchers." Students who fail to develop adequate levels of reading fluency will have difficulty with comprehension. Put another way, reading fluency is thought to be a necessary precondition for good comprehension (e.g., Laberge & Samuels, 1974; Stanovich, 1980). This study investigates using timed readings to develop reading fluency.

Reading fluency is usually described in terms of automatizing the subskills needed for reading. When skills such as decoding, word recognition, and semantic chunking are developed, more attention can be directed towards comprehension, interpretation and other higher level processes. Nathan and Stanovich (1991) summarized the process of fluency development this way: "When processes of word recognition take little capacity (are fluent), most of the reader's cognitive capacity can be focused on comprehending the text, criticizing it, elaborating on it, and reflecting on it—in short, doing all the things we know good readers do" (p. 176). The speed at which one can read and comprehend a text is considered to be a reliable way of judging the degree of automaticity for these processes or subskills of reading. In this study, reading fluency development is defined as increases

in reading rate while maintaining high levels of reading comprehension.

So, how should we help students develop their reading fluency? As mentioned earlier, intensive practice and repetition to automatize subskills is thought to be an effective method of building fluency.According to Nation (2009) three conditions are needed for a reading fluency development activity. The first is that the learners should be focused on the message of the text, the second is that it should be easy to read and the third is that there should be some pressure to read at a speed which is faster than normal (p. 66). Timed reading activities, meeting the above conditions, were used to assess the development of reading fluency for the participants in this study.

Purpose and Research Questions

The current study is intended to shed light on the process of reading fluency development over the course of one semester. Specifically, it aims to investigate the effects of timed reading practice with those of timed writing practice. This exploratory studyattemptedto answer the following questions:

1. How will reading rate increase over a semester as a result of timed reading practice as opposed to timed writing practice?
2. How will reading comprehension change as a result of the treatments?
3. How will the results on a test of vocabulary size change over the semester?

By investigating these questions educators may learn how to help students build their reading fluency, comprehension and vocabulary levels more efficiently and effectively. Although reading practice is obviously beneficial for reading fluency development, studies such as this can give us a reference point to explore the details of how to best implement this practice. Factors such as, the difficulty of the text, the amount of practice time needed and the duration of practice required to produce particular results should be investigatedin order to improve EFL education.

Method

Participants

The participants were 32 first-year students (19-20 years old) at a public, 4-year university in western Japan. They formally studied English for approximately 5 to 6 hours per week in EFL classes during their six years of secondary education. Before taking the second semester course English II, taught by the author, they had taken English I during the first semester of their freshman year at university. Both of these English courses are required, however all of the students were non-English majors. A standardized measure of the participants' overall English ability, such as a TOEIC score, was not available. However, the English II course was considered an advanced course that

students had to test into.

Study Design

This study was conducted in two 90 minute classes held once a week in the mornings for one 15-week semester. Students who tested into the author's English II courses were randomly assigned to either the first or second class by administrators before the semester began. This was the only English course students took during the semester. The research project was briefly explained in English to all of the participants and the author clearly told the student that results in this study would be anonymous and would not factor into their course grade.

ClassA (Timed Reading Practice Group)

The first class, referred to in this study as Class A, met from 8:30 to 10:00 AM on Friday mornings. The 17 students in the class used the same textbook with the same assignments and activities as the second class, but with one exception. In 10 class periods, Class A did two timed reading activities per class which took about five minutes each. The timed reading activities were taken from Reading Power 2 (Mikulecky & Jefferies, 2005). Each timed reading activity consisted of a passage of roughly 200 words (180 standard word units) on the front of the paper and eight multiple choice comprehension questions on the back.

During the timed reading activities, students checked the time it took them to read the passage with a stopwatch displayed clearly on a large projector screen. After the timer was started, studentsquickly read the passage, recorded their reading time on the front page, turned the paper over and completed the reading comprehension questions on the back without referring to the passage again. The two timed reading activities took about 10 minutes to complete. Students turned in their papers without checking the answers and the papers were not returned to the students later.

Class B (Timed Writing Practice Group)

The second class, labelled Class B, was held from 10:15 to 11:45 AM on Friday mornings. Data was collected for 15 students in this class. The class was conducted the same way as Class A, except for a 10-minute timed writing activity that was administered in each of 10 class periods. Students were given a blank sheet of lined paper and were asked to write as much as they could about a topic of their choice for 10 minutes. After the time was up, students were asked to count the number of words they had written and record it on the paper before turning it in to the instructor. The papers were not returned to the students and no feedback was provided on their writing.

Instruments

Vocabulary Levels Test. A 30-item version of the Vocabulary Size Test (Nation and Beglar, 2007) was administered to all of the participants. The test assesses receptive knowledge of the first 1000

to third 1000 most frequently occurring English words according to the British National Corpus. A pretest was administered at the beginning of the course in October and the same test was used again as a posttest at the end of the semester in February. The tests were taken online and scored automatically. Each word frequency level (1k to 3k) had 10 multiple choice questions designed to access student knowledge of words at that level.

Reading Rate Test. All students took the same reading rate test as a pretest in October and a posttest in February. This test measured student reading rates and comprehension. It consisted of four passages each having about 200 words (187 standard word units). The passages were taken from Reading Power 2 (Mikulecky & Jefferies, 2005) and formed a continuing narrative about a married couple's life in the US.

The difficulty of the passages was judged to be well within the students' reading levels. The Flesch-Kincaid grade levels for the texts were 6.0 for passage one, 3.7 for passage two, 3.1 for passage three, 1.8 for passage 4 and 3.9 for passage 5 (calculated with Microsoft Word). The readability scores for the texts varied but the high scores for the comprehension tests indicate that they were not too difficult for the students.

In order to increase the accuracy of the measurement as well as produce results which may be compared with other reading rate studies, each passage was converted to standard word units (Carver, 1982). One "standard word" is a unit of six characters, including spaces and punctuation. This method of calculating word number is intended to standardize measurements of text length, regardless of its proportion of long or short words. The total length of the 4 passages was determined to be 748 standard word units.

Participants completed a practice reading rate test to familiarize them with the test format before they took the pretest and again before taking the posttest to ensure reliable results. The four passages making up the reading rate test each had eight multiple choice comprehension questions on the back-side of the test paper (four passages x eight questions per passage = 32 questions). After reading the passage, students were instructed to record their reading time (the time elapsed was displayed on a projector screen), turn the paper over and complete the comprehension questions without referring again to the text.

Results

Research question one asked how reading speed would increase over a semester as a result of timed reading practice as opposed to timed writing practice. In order to evaluate the results the descriptive statistics were analyzed and an independent samples *t* test was conducted with group (Class A and Class B) as the independent variable and reading rate gain scores as the dependent variable. Table 1 shows the pre- and post-course reading rates for Class A and Class B, as well as the reading rate gains. Class A had a mean reading rate increase of 14.4 standard words per minute (SD

= 22.02), while Class B had a mean increase of 7.64 standard wpm (SD = 19.75). Class A's average reading rate increased by about 7 standard word units more than Class B's. The *t* test was significant $t(118) = 2.031$, $p = 0.02$. The obtained value of 2.031 exceeded the critical value of 1.66 for a one-tailed test, so we can conclude that the difference in reading rates occurred due to the treatment and not by chance.

Table 1. *Pretest and posttest reading rates, Group A and Group B (standard words per minute)*

	A pre	A post	A gain	B pre	B post	B gain
M	97.91	112.3	14.4	96.78	104.4	7.64
SD	15.94	24.64	22.02	21.99	16.3	19.75

These results would suggest that timed reading practice is more effective for developing reading rate than timed writing practice. With just 10 minutes practice on reading fluency training, student reading rates increased by approximately 14 standard words per minute over a semester.

Research question two asked how reading comprehension would change as a result of the two treatments. As Table 2 shows, both Class A and Class B maintained relatively high levels of comprehension from the beginning to end of the semester. Increases in reading rate did not come at the cost of reading comprehension levels. The average score for both groups on the pre- and posttests was about seven points out of eight possible.

Table 2 Comprehension Questions

	A pre	A post	A gain	B pre	B post	B gain
M	7.05	7.2	0.15	7.02	6.7	-0.3
SD	1.11	0.99	1.05	1.02	1.58	1.32

Research question three asked how vocabulary size would change over the course of the semester. The results of the Vocabulary Size Test shown in Table 3 indicate that both groups had roughly identical scores at the first to third 1000 word levels on the pretest. The difference between the groups is less than 0.1 point for the first and second frequency bands. However, Class A's score for the third 1000 word level is 0.47 points higher than that of Class B. On the posttest, we can see that Class A's average scores for the first and second 1000 word frequency levels increased more than Class B's. These gains are admittedly small (less than one point difference) and although gains for Class A appear to be a little higher, no measures of significance were calculated.

Table 3. *Pretest and posttest scores for the Vocabulary Size Test*

	Pre 1k	Pre 2k	Pre 3k	Post 1k	Post 2k	Post 3k	1k gain	2k gain	3k gain
Class A (Ave.)	8.75	5.5	6.94	9.47	6.41	7.12	0.72	0.91	0.18
Class B (Ave.)	8.76	5.53	6.47	9.06	5.82	6.71	0.29	0.29	0.24
Diff.	-0.01	-0.03	0.47	0.41	0.59	0.41	0.43	0.62	-0.06

Discussion

The purpose of this study was to explore the development of reading rate using timed reading practice compared with timed writing practice. Although timed writing practice may be beneficial for developing other important language skills, timed reading practice resulted in higher reading rate gains. The practice effect for timed reading was an average of 14 standard words per minute gain over one semester.

In a similar study conducted by Huffman (2014) students who practiced timed reading in class and who engaged in Extensive Reading (ER), with an average of 80,000 words read, made gains of 23.73 standard words per minute in one semester. Although these gains are impressive, the reader is left wondering how much of that gain was due to ER and how much can be attributed to the effect of timed reading practice. Although Huffman's study and this one were conducted under different circumstances, this study suggests that considerable improvement in reading rate can be achieved through weekly timed reading practice alone. ER undoubtedly contributes to reading fluency however, and has been widely demonstrated in the research to support various aspects of language development.

Gains in reading rate did not come at the expense of comprehension. Scores for the eight comprehension questions following each reading passage remained consistently high throughout the semester. In addition, vocabulary size seemed to have improved slightly over the semester for both groups. However, differences in the results were too small to draw any reliable conclusions from.

Conclusion

This study provides support for the efficacy of using timed reading practice for reading fluency development. Significant gains were made in reading rate as compared with the timed writing practice group. Levels of reading comprehension and vocabulary size remained relatively constant throughout the treatment. The author hopes that this study has provided some reference data for first year university students' reading rate, reading comprehension and vocabulary size to add to and elaborate upon in future studies.

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