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The Relationship between EFL Oral Reading Fluency and Silent Reading Fluency: What Can a Speed Reading Course Tell Us?

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Abstract

A great deal of past research in reading fluency has focused on oral reading fluency in L1, but literature in EFL oral reading and silent reading is still in its infancy. This study attempts to examine the development of silent reading fluency in a speed reading course and aims to determine whether an improvement in silent reading speed facilitates oral reading fluency development. The participants were from four intact classes at a university in Vietnam. While the four groups were following the usual English program at the university, the two treatment groups were also following a speed reading course, which lasted two months. In each session of the course, they were asked to read a 550-word text and answered 10 comprehension questions that accompanied the text. The results indicated that the treatment groups significantly improved their reading fluency in and outside the speed reading course, but made minimal increases in oral reading speed.

Keywords*: oral reading, silent reading, reading fluency, speed reading, reading aloud*

Reading fluency has been an object of research in language acquisition and language teaching for a long time. Numerous attempts have been made to explore the nature of reading fluency as well as techniques to improve reading speed and reading comprehension. Among those there are a number of longitudinal studies that examined the two modes of reading: silent reading and oral reading.

Oral reading used to be the fundamental mode of reading instruction in reading classes. Since the twentieth century, its popularity began to wane when silent reading started to replace oral reading as the preferred mode of reading instruction in most schools (Fuchs, et al., 2001). Some language instructors argued that silent reading was the more authentic form because in the real world it was more common than oral reading and that with silent reading but not with oral

reading the rate of reading and thinking would develop (Huey, 1968). However, other linguists and researchers claimed that the importance of oral reading should not be ignored and that it is essential to include oral reading in schools' reading programs (Rasinski, 2004). Rasinski (2003, p. 25) emphasized that through oral reading the words become more "*memorable, more deeply etched into memory*" than through silent reading. Along similar lines, Ash and Kuhn (2006) asserted that oral reading techniques, for instance, round robin reading and radio reading, remain common practice among reading instructors and language teachers for the purposes of improving student learning, supporting struggling readers, or maintaining classroom management.

Although research has been carried out on the roles of oral reading and silent reading in L1 reading comprehension (Hale et al., 2007; Kailani, 1998; Timothy et al., 2014; Yildirim, 2012), it is not clear whether increasing silent reading rate will lead to oral reading rate improvement and vice-versa. Research on reading fluency development among EFL learners has been mostly restricted to silent reading and far too little attention has been paid to oral reading speed in EFL contexts.

The major objective of this study was to examine EFL reading fluency development in a speed reading course and determine whether an increase in silent reading rate warrants an increase in oral reading rate. Data for this study were collected through an experiment of speed reading for EFL learners. The project provided an important opportunity to advance the understanding of the relationship between silent reading and oral reading in EFL contexts and reinforced the benefits of a speed reading course for EFL learners.

Literature Review

In EFL contexts, reading fluency has been consistently regarded as the ability to read and comprehend a text in the foreign language at an adequate speed (Gorsuch & Taguchi, 2008; Nation, 2005; Segalowitz et al, 1998; Yamashita & Ichikawa, 2010). Although researchers approach reading fluency from different perspectives, a consensus on the indicators of reading fluency has been established. There is popular agreement that automaticity, accuracy, and speed are the three fundamental indicators (Grabe, 2004; Kuhn & Stahl, 2003; Rasinski et al, 2006; Richards, 2000; Tompkins, 2003; Worthy & Broaddus, 2001-2002).

Reading speed, which is generally understood as the rate of word recognition, is commonly measured by counting the total number of words per minute (wpm) a person can recognize. A considerable amount of literature has been published on this aspect. Researchers have pointed out that a normal skilled L1 reader reads at around 250-300 wpm and makes approximately 90 fixations per 100 words (Just, et al., 1987; Nation, 1997) while a normal speed in L1 oral reading should range from 100 to 200 wpm (Nation, 2005). Researchers have suggested that a reasonable goal for second language learners who are reading materials with no new words should be around 250 wpm (Nation, 2005) but mentioned that reading speed in L2/FL is slower than in L1 (Droop & Verhoeven, 2003; Fraser, 2007; Taguchi et al, 2006).

Reading instructors around the world have used different techniques to help learners improve their speed. Among those methods are repeated reading and extensive reading. A few studies have shown the effect of repeated reading (Gorsuch & Taguchi, 2008; Taguchi et al., 2004)

and extensive reading (Bell, 2001; Iwahori, 2008; Leung, 2002; Nation, 2001) in reading ability development. There has also been a growing body of literature on speed reading as one of the methods to increase reading rate in both L1 and EFL contexts. Studies of speed reading showed that this method was helpful for EFL learners in improving their reading rate (Chung & Nation, 2006; Macalister, 2008; 2010). However, Carver (1992) argued that a speed training course in L1 may negatively affect learners' reading comprehension. Although Carver's warning may not be extrapolated to L2 reading, it indicates a need to examine more closely EFL reading speed improvement in a speed training course.

Numerous researchers have proposed methods to assess reading speed both for L1 silent reading (Liu et al., 2008) and EFL silent reading (Chung & Nation, 2006; Gorsuch & Taguchi, 2008). In these studies, reading speed is measured by the wpm calculation using the one-minute reading probe and the entire text method (Iwahori, 2008; Taguchi, Takayasu-Maass & Gorsuch, 2004). Particularly in L2/FL research, the three-minute probe and the ten-second interval method have been used (Bell, 2001; Macalister, 2008; Millett, 2005a, 2005b; Millett et al., 2007; Sheu, 2003).

Among the various approaches to L1 oral reading fluency assessment there is agreement that rate, accuracy, and prosody are the major indicators of oral fluency. Accuracy is the percentage of words read correctly, calculated as words correct divided by the total number of words read. Rate is simply the number of words read correctly in one minute. Prosody is assessed using a qualitative rubric, which measures such aspects as phrasing, smoothness, and pace. Based on these indicators, researchers have formulated different tests and methods such as the Peabody individual achievement test (Maye, 2013) or the Stanford achievement test (August et al, 2006) and the Gray oral reading fluency test (Wiederholt & Bryant, 2003). Some others utilized the word meaning test (Newton & Bristoll, 2010), classroom teachers' holistic ratings (Parker er al, 1992) or a combination of speed, accuracy, oral expression, and comprehension as indicators to assess oral reading fluency (Valencia et al., 2010). Several benchmarks to assess oral reading fluency have also been developed, some of which are the Dynamic Indicators of Basic Early Literacy Skills (Dewey et al. 2015; Good & Kaminski, 2002), Curriculum-based Measurement (Thornblad & Christ 2014), or the multidimensional fluency rubric (Rasinski, 2004).

Research has attempted to investigate the relationship between L1 oral reading, silent reading and reading comprehension. In Hale et al. (2007)'s study, for instance, the participants performed significantly better in comprehension as they read aloud. The researchers, therefore, suggested that silent reading and aloud reading should be conceptualized as two distinctive skills. Along similar lines, other researchers found a stronger relation between reading comprehension and oral reading fluency, but not silent reading fluency (Roberts et al., 2005; Roehrig et al., 2008). On the contrary, a few authors reported that their participants comprehended more information when reading silently than when reading aloud (Jones & Lockhart, 1919; Mead, 1917). Yet other researchers contend that reading proficiency may affect the reading mode that best facilitates comprehension. Specifically, poor readers comprehend better when reading aloud while average readers comprehend better when reading silently (Miller & Smith, 1990). Finally, other linguists argue that the mode of reading does not have any significant effect on comprehension (Akers, 1995; McCallum et al., 2004).

So far little attention has been paid to oral reading in L2/FL, probably due to the lack of use of this type of reading in L2/FL learning and teaching. It is, therefore, hoped that this study will contribute to a deeper understanding of L2/FL oral reading speed improvement. In the experiment, a speed reading course was carried out among EFL university students in Vietnam and oral reading tests were utilized to measure the participants' speed change in oral reading before and after the speed reading course to see whether their oral reading speeds would increase when their silent reading speeds increased. Only oral reading rate was measured because prosodic indicators such as phrasing and pace can hardly be reliably assessed due to the difference between the participants' mother tongue and the English language. Accuracy (the number of words correctly read over the total number of words read in a minute) was not measured for two reasons. First, as Vietnamese learners of English have quite bad English pronunciation (Duong, 2009), it would be impossible to decide whether an incorrectly pronounced word was caused by bad pronunciation or by incorrect decoding. Second, the texts were written within the participants' vocabulary level and thus, it was expected that there were no new words in the texts. In this research, we measured the participants' rate by simply counting the total time a participant spent reading the text then converted it into the number of syllables per minute (spm). The reason we used spm but not wpm lies in the difference between the Vietnamese language and the English language. Vietnamese is not a stressed language and hence every single syllable carries an equal stress. Consequently, Vietnamese learners of English tend to bring that into English when they speak (Hwa-Froelich et al, 2002). Since the participants' English level was rather low, interference from Vietnamese might have been very strong (Honey, 1987). Moreover, the fact that the texts used for pre-test and post-test contained an equal number of both words and syllables would not result in any inconsistencies whether we took words or syllables as the measurement unit.

Methodology

This study aimed to address the following research questions:

1. Will the speed training help the participants increase their silent reading rate in and outside the speed reading course?

2. Will the participants' oral reading rate improve when their silent reading rate increases?

Participants

The participants in this study were all first year English majors, who had been studying English for at least three years at high school for approximately four hours a week and had reached the 2nd 1000 word level at the beginning of the experiment. They were put into four groups: two experimental groups, hereafter called group A and group B, and two control groups, hereafter called group C and group D. Group A and group B followed both the speeding reading course and the usual English program at the university. Group C and group D did not follow the speed reading course. There were 116 participants in total with 31 for group A, 30 for group B, 26 for group C and 29 for group D.

Materials

During the speed reading course, the participants in group A and group B read 20 texts, which were taken from Asian and Pacific speed readings for ESL learners (Millett, et al., 2007). Pilot testing was done to make sure that the texts were relatively easy for learners who have reached the 2nd 1000 word level of vocabulary, and that no texts were either more difficult or easier than the others. Each text contained 550 words and was accompanied by 10 comprehension questions.

To determine whether speed increases in the course were accompanied by silent and oral reading rate improvement, four texts were utilized for the pre-test and post-test, two for the oral reading tests and two for the silent reading tests. The texts for the oral reading tests were written within the 1,000 word level. Each text consisted of 194 words and 294 syllables. They were put in a syllable counter program, a word counter program, a Vocabulary Profiler and modified so that they were equal in terms of length, vocabulary level, number of words and syllables and syntactical complexity. The texts for the silent reading tests were consisted of 700 words and had also been put in a Vocabulary Profiler to make sure they contained the same number of first 1000 word level, second 1000 word level, off-list words, and academic words. All the tests were computer-based. The participants were supposed to do them on computer under the researchers' administration.

Procedures

Before the experiment commenced, an ethics approval was obtained and a written consent form was sent to all the participants to sign. The consent was for the collection of data, release of data to others, use for a conference report or a publication, and other purposes.

All participants in the three groups had to sit the pre-tests and post-tests on silent reading and oral reading. After the pre-test, the treatment groups (group A and group B) had the speed reading course while following the usual English program at the university. After that, the participants all took the post-tests. All the tests were done on the computer. With respect to the oral reading test, the participants read the text and the computer program recorded their voice. With regard to the silent reading test, first, the participants were told that they would have to read a text and would see more instructions when finishing reading. Once they had already filled in their identification information, they could click the '*begin*' button and start reading. They could only see the comprehension questions after they had finished reading and clicked the '*next*' button. The administrator did not have to control the starting time of all the participants because the program automatically recorded the time when the participants clicked the '*next*' button to see the comprehension questions. The researcher did not have to count the number of words that each participant read in one minute as the computer program did it automatically.

During the treatment of speed reading, which lasted two months, groups A and B had three speed reading sessions every week. In each of the sessions, the participants were given a text from the set of 20 texts and the progress chart in which they could record their speed and comprehension score. They were then asked to read the text, record their reading time in the progress chart, and answer the comprehension questions. After that the participants were given

the answer key to check the answer and recorded their comprehension score before handing the researcher their text and progress chart.

Results

An important goal of the study is to determine the effect of silent reading speed development on oral reading rate. This section provides answers to such issues as the amount of silent reading and oral reading speed improvement, the difference between the treatment groups' results and control groups' results, and the relationship between silent reading speed improvement and oral reading improvement.

Silent reading speed improvement

Regarding the silent reading speed improvement, it was found that both treatment groups made substantial increases in reading rates during the speed reading course. Comparing the speed on the first text and the speed on the last text, it was found that group A made an increase of 61 wpm and group B made an increase of 51 wpm. Comparing the average speed on the first three texts and the average speed on the last three texts, it was found that group A and group B respectively made increases of 57 wpm and 51 wpm (See Table 1). Of all the 61 participants, only one participant did not make any improvement during the entire course. The results also show that most participants could keep their comprehension accuracy at the same level as they increased their speeds. This both reinforces the idea that they made real progress in reading speed and that speed reading courses can help readers to improve their speed without comprehending less.

Table 1. Means and Standard Deviations of Initial Speeds and Final Speeds in the Course for the Treatment Groups.

			Group A	Group B
Initial speeds	Speed on the first text	Mean	128.64	132.76
		SD	29.53	27.24
	The average speed on the first 3 texts	Mean	131.96	132.36
		SD	27.28	23.80
Final speeds	Speed on the last text	Mean	189.67	183.80
		SD	44.11	39.86
	The average speed on the last 3 texts	Mean	188.90	183.36
		SD	40.73	38.18

In order to see if the participants made any improvement in silent reading speed outside the speed reading course, two texts were used for the pre-test and post-test and each participant read one text in pre-test and the other in the post-test. Therefore, the increase they made was measured by taking the speed on the pre-test away from the speed on the post-test. The results

show that the control groups made an average increase of 15 wpm and while the treatment groups made an average increase of 48 wpm (See Table 2). The data showed that thirteen out of 116 participants had their speeds decrease by 1 wpm to 31 wpm. The other 103 participants (89%) had positive results from 1 wpm to 101 wpm. More than half of the participants gained increases of at least 30 wpm and 35 participants (30%) made increases of at least 50 wpm.

Table 2. Means and Standard Deviations of Speed Increases on Other Types of Texts for All Groups.

		Treatment groups		Control groups	
		Group A	Group B	Group C	Group D
Individual groups	Mean	46.16	50.43	10.46	19.65
	SD	27.34	24.28	29.60	27.37
Average of two treatment groups and two control groups	Mean	48.26		15.30	
	SD	25.76		28.56	

Table 3. Means and Standard Deviations of Pre-Test Speed and Post-Test Speed on Other Types of Texts For All Groups.

		Group				Analysis of variance		
		Group A	Group B	Group C	Group D	Group F (3,112)	Time F (1,112)	Interaction F (3,112)
Pre-test	Mean	118.87	119.73	118.96	113.83	4.36**	157.47**	14.88**
	SD	34.95	39.62	26.12	30.72			
Post-test	Mean	165.03	170.17	129.42	133.48			
	SD	36.75	34.62	20.51	27.19			

** $p < .01$.

A comparison between the participants in the control groups and the participants in the treatment groups showed that only two participants in the treatment groups (3%) but 14 participants in the control groups (25%) had negative results. Only three participants in the control groups (5%) had increases of over 50 wpm whereas more than a half of participants in the treatment groups (52%) had increases of over 50 wpm. Most of the 29 participants with the biggest increases were in the treatment groups and most of the 29 participants who made the least improvement were in the control groups.

A repeated measures ANOVA was carried out on the pre-test (initial score) and post-test (final score) data. The repeated-measures factor was time (pre-test vs. post-test) and the between-subjects factor was group. The results are shown in Table 3. The results showed that there was

a general gain for all groups from pre to post-test, $\eta^2 = .584$. There was a significant overall group effect but this is not meaningful in this context. The result of interest was the interaction (group x time) showing that the gains from pre-test to post-test for the two treatment groups were significantly greater than for the control groups, $\eta^2 = .285$. As can be seen from figure 4.2, the treatment groups made a significant improvement in reading speed, and their mean improvement was greater than the more modest gains of the control groups.

To determine the nature of the interaction effect, a one way ANOVA compared the gain scores (pre-test to post-test) of the four groups. The results showed the mean scores of the four groups were significantly different, F (3, 112) = 14.88, p = .000, $\eta^2 = .285$.

The mean gain score for group A speed training was 46.16 (N=31, SD = 27.34). The mean gain score for Group B speed training was 50.43 (N=30, SD = 24.28). The mean gain score for Group C control was 10.46 (N=26, SD = 29.60). The mean gain score for Group D control was 19.65 (N=29, SD = 27.37).

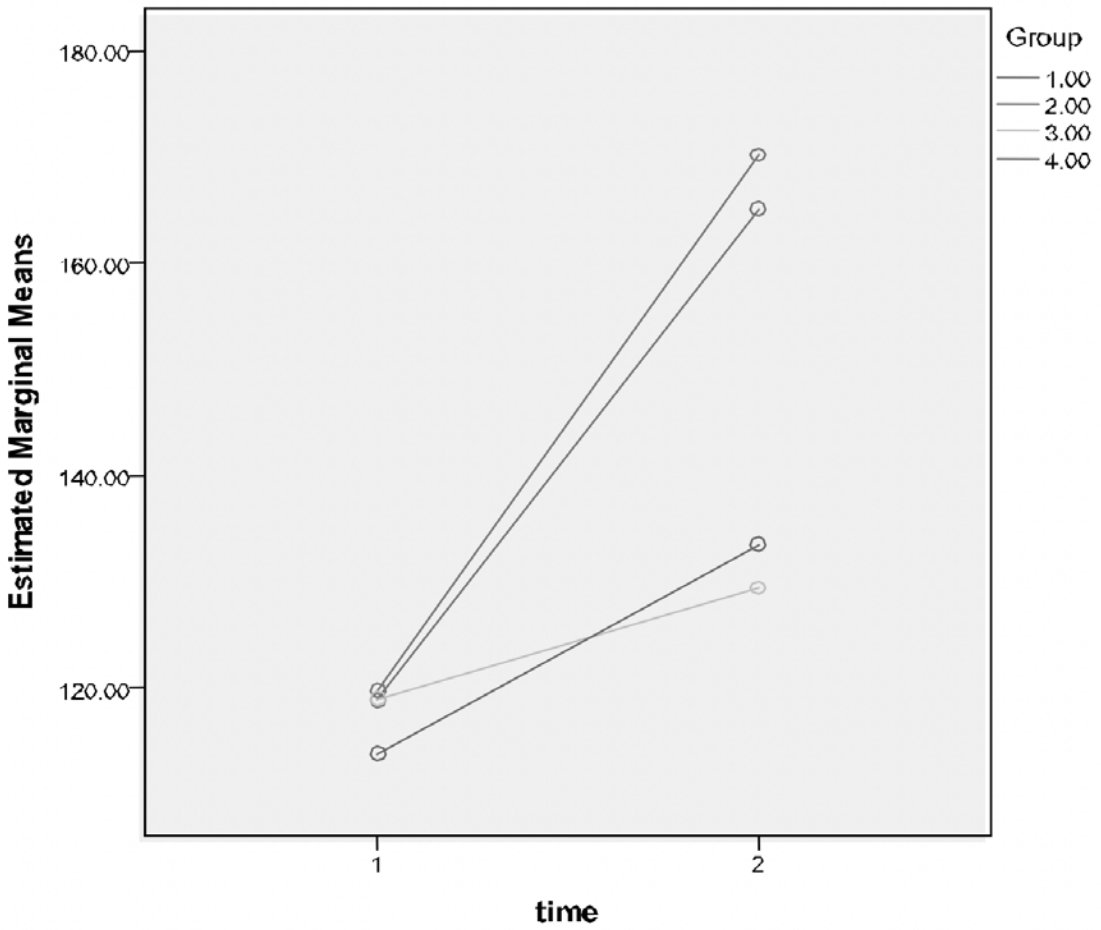

Figure 1. Estimated Marginal Means of Speed Increases on Other Texts for All Groups.

Pairwise comparisons using the Bonferroni adjustment for multiple comparisons showed a significant difference between group A and group C ($p = .000$) and between group A and group D. ($p = .002$). There was also a significant difference between group B and group C ($p = .000$) and between group B and group D ($p = .000$). There was no significant difference between groups C and D ($p = 1.000$).

The participants' comprehension accuracy was also examined. The participants' results were classified into three types. The first group were the ones who increased their comprehension level (Increase group). The second group consisted of participants who kept their comprehension at the same level (Consistent group). The third group had their comprehension scores decrease (Decrease group). A comparison (see Table 4) between the control groups and treatment groups showed that the treatment groups outperformed the control groups. While most of the participants in the treatment groups increased their comprehension accuracy, most of the participants in the control groups did not increase their comprehension accuracy. This result suggests two interpretations. First, the speed reading course helped the participants to maintain their comprehension while speeding up, thus most of the participants who followed the course did not have to trade comprehension for speed. Second, there may be a link between comprehension and reading speed improvement in that the participants who greatly increased their speed tended to improve their comprehension accuracy while it was less likely that participants who marginally increased their speeds would improve their comprehension accuracy.

Table 4. Comparison of Comprehension Improvement for the Control Groups and the Treatment Groups.

	Group A	Group B	Group C	Group D
Improve group	27 (87%)	26 (87%)	10 (39%)	9 (31%)
Consistent group	2 (6%)	2 (7%)	11 (42%)	9 (31%)
Decrease group	2 (6%)	2 (7%)	5 (19%)	11 (38%)

A repeated measures ANOVA was carried out on the pre-test (initial score) and post-test (final score) data. The repeated-measures factor was time (pre-test vs. post-test) and the between-subjects factor was group. The results are shown in Table 5. The results showed that there was a general gain for all groups from pre to post-test, $\eta^2 = .266$. The group effect was not significant. The interaction (group x time) analysis indicated that the gains from pre-test to post-test for the two treatment groups were significantly greater than for the control groups, $\eta^2 = .126$. Figure 2 illustrates that the treatment groups made a significant improvement in comprehension while group C control made a smaller increase. Group D control's comprehension level almost remained the same from the pre-test to the post-test.

Table 5. Comparison of Comprehension Improvement for the Control Groups and the Treatment Groups.

		Group				Analysis of variance		
		Group A	Group B	Group C	Group D	Group F (3,112)	Time F (1,112)	Interaction F (3,112)
Pre-test	Mean	5.10	5.17	5.50	6.14	.10	40.55**	5.38**
	SD	1.66	1.51	2.39	1.83			
Post-test	Mean	6.94	7.20	6.62	6.17			
	SD	1.03	1.45	2.00	1.69			

** $p < .01$.

To determine the nature of the interaction effect, a one way ANOVA compared the gain scores (pre-test to post-test) of the four groups. The results showed the mean scores of the four groups were significantly different, $F(3, 112) = 5.38$, $p = .002$, $\eta^2 = .126$.

The mean gain score for group A comprehension increase was 1.84 (N = 31, SD = 1.95). The mean gain score for group B comprehension increase was 2.03 (N = 30, SD = 1.90). The mean gain score for group C control was 1.12 (N = 26, SD = 2.88). The mean gain score for group D control was 0.35 (N = 29, SD = 1.66).

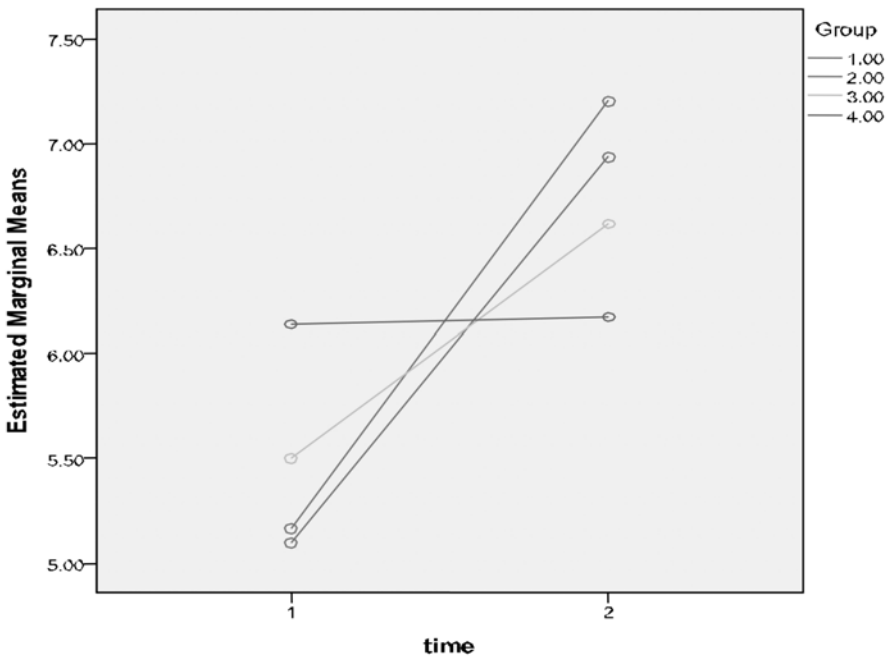

Figure 2. Estimated Marginal Means of Comprehension Increases for All Groups.

Pairwise comparisons using the Bonferroni adjustment for multiple comparisons showed a significant difference between group A and group D ($p = .008$) and between group B and group D ($p = .003$). However, there was not a significant difference between group A and group C ($p = 1.000$) and between group B and group C ($p = .652$). There was no significant difference between groups C and D ($p = .369$).

Oral reading speed improvement

An important goal of the study is to determine the effect of silent reading speed development on oral reading rate. In the experiment, oral reading rate was measured by counting the number of syllables read in one minute. Two texts were used for the pre-test and post-test. The tests on oral reading speed were done on the computer. The participants were randomly assigned to read either text A or text B. In order to avoid text bias, we assigned approximately half of them to read text A and the other half to read text B in the pre-test and the other way around in the post-test. The two texts were taken from graded readers and were not the same texts used to measure silent reading speed. Both texts contain 194 words and 294 syllables.

Table 6. Increases (Spm) in Oral Reading for All Groups.

	Group A	Group B	Group D	Group C
n	31	30	29	26
Mean	8.81	8.07	3.21	1.31
SD	11.99	11.79	10.10	11.48

Table 7. Comparisons of Performance on Oral Reading Tests Using the Spm Calculation for All Groups.

	Group A	Group B	Group D	Group C
Nº of participants with improvement	24 (77%)	23 (77%)	20 (69%)	15 (58%)
Nº of participants with increases over 20 spm	5 (16%)	5 (17%)	2 (7%)	2 (8%)
Nº of participants with no improvement	7 (23%)	7 (23%)	9 (31%)	11 (42%)

The data (see tables 6 and 7) show that none of the four groups made substantial increases in oral reading rate. The best group increased their average speed by only 9 spm. Eighty-two out of 116 participants (71%) had positive results, but among these progress makers, only 14 made increases over 20 spm. The rest of them made minimal increases. Thirty-four participants made no improvement. A comparison of the two treatment groups showed that there were no striking differences between the two groups. Their average increases were similar. About 84% of group A and 77% of group B made improvement. Five participants in group A and seven participants in group B had a decrease.

In order to confirm that the absence of substantial improvement in oral reading rate was not due to factors such as improper calculations, text effect, ceiling effect, unusually low scores, the data were reanalysed in various ways. First, the wpm calculating method was used to see if the spm calculating method yielded unreliable results. Second, the participants' initial and final speeds were examined to see if the participants had reached a speed ceiling before the treatment. Third, the increases and speeds by participants who read text A in the pre-test and text B in the post-test were compared with participants who did them the other way around to see if there was a text effect. Fourth, an investigation into participants who made no improvement was made in order to see if the negative results by those participants affected the whole groups' results.

In the first place, to eliminate the possibility that the results were distorted by an inappropriate measuring method, we also tried measuring the participants' speed increases using the wpm calculation. The data (see Table 8) showed similar patterns to the spm calculation method and the groups' figures were lower as there were fewer words than syllables in the texts. This result demonstrates that the calculation method is not a factor affecting the groups' results.

Table 8. Comparisons of Performance on Oral Reading Tests Using the Wpm Calculation for All Groups.

		Group A	Group B	Group D	Group C
Increase	Mean	5.81	5.32	2.18	0.94
	SD	(7.93)	(7.68)	(6.60)	(7.53)
Nº of participants with improvement		24 (77%)	23 (77%)	20 (69%)	15 (58%)
Nº of participants with increases over 20 wpm		2 (6%)	2 (7%)	1 (4%)	0 (0%)
Nº of participants with no improvement		7 (23%)	7 (23%)	9 (31%)	11 (42%)

In order to see if the participants did not greatly improve their reading rate because they had reached the ceiling of normal oral reading before they started to receive the treatment, we looked at their initial speeds and final speeds. The data in Table 9 show that none of the groups were near the ceiling level of normal oral reading of around 200 wpm (Meyer & Felton, 1999).

Thus it is not possible to say that the participants did not increase their oral reading rate because they were already near the ceiling level of normal reading. However, as can be seen from Table 9, the participants' initial speeds were in the normal range of oral reading rates, which is from 100 wpm to 200 wpm (Meyer & Felton, 1999), thus it was less likely that they would make big increases. In silent reading, their initial speeds were below the normal range, giving them more chances to make great increases.

Table 9. Means and Standard Deviations of Initial Speeds and Final Speeds (in Spm and Wpm) In Oral Reading for All Groups.

			Group A	Group B	Group D	Group C
Initial speed	spm	Mean	170.81	176.87	174.03	176.73
		SD	25.03	28.47	28.09	26.12
	wpm	Mean	112.71	116.71	114.84	116.62
		SD	16.51	18.78	18.54	17.23
Final speed	spm	Mean	179.61	184.93	177.34	178.15
		SD	27.22	29.68	25.63	21.51
	wpm	Mean	118.52	122.03	117.02	117.56
		SD	17.96	19.59	16.91	14.19

A comparison between the control groups and the treatment groups indicated that group B had the same initial speed as group D. Group A had a similar speed to group C with a 3 spm difference. This shows that it was not because of lower initial speeds that the treatment groups had bigger increases than the control groups.

To eliminate the possibility that some participants had small increases because they read the easier text in the pre-test and the more difficult text in the post-test, we compared the results by the participants who read text A in the pre-test and text B in the post-test with the results by the participants who did the opposite way. The data (see Table 10) showed that on both pre-test and post-test, within each of the groups, the difference between the two subgroups was no more than 3 wpm. The four groups did not have the same pattern in which the subgroup who read text A always had a higher average speed than the subgroup who read text B or vice versa. By contrast, both patterns were found. For example, in the pre-test, subgroup A who read text B had a higher average speed than subgroup A who read text A but subgroup B who read text B had a lower average speed than subgroup B who read text A. These results demonstrate that the texts did not produce any distorting data on the speed improvement that the participants made.

Table 10. Oral Reading Speeds (in Spm) on the Pre-Test and Post-Test for the Two Orders of Text Administration.

			Group A	Group B	Group C	Group D
Pre-test	Text B	Mean	172.23	175.67	177.76	175.05
		SD	29.87	28.15	33.03	26.28
	Text A	Mean	170.47	177.91	175.12	173.23
		SD	21.79	28.15	15.83	30.57
Post-test	Text A	Mean	179.67	183.59	176.73	177.71
		SD	29.30	33.06	24.89	20.75
	Text B	Mean	179.86	184.56	178.58	175.40
		SD	29.87	30.37	33.03	26.28

Lastly, to see if unusually low or high scores affected the whole groups' results, we examined the increases that individual participants made. It should be noted that as the biggest average increase the groups could make was 9 spm, any scores that were more than 9 spm lower or higher than all of the other scores in the same group would be considered as abnormally low or high scores. A preliminary analysis of the individual participants' results showed that none of the participants in the four groups had abnormally high or low results. Thus, it is not possible that the treatment group's increases were affected by individual abnormal scores.

Although the results indicated that none of the four groups made substantial increases, a comparison between the two control groups and the two treatment groups showed that the treatment groups did better than the control groups. With respect to the treatment groups, of all the 61 participants, 77% made increases from 1 spm to 37 spm. Ten participants made increases over 20 spm. However, 12 out of 61 participants (20%) had negative results from -1 spm to -14 spm. Two participants made no change. With respect to the control groups, of all the 55 participants, only 64% had positive results ranging from 1 spm to 22 spm. There were 17 participants (31%) having negative results and three participants making no improvement. Compared with the treatment groups, the control groups had fewer participants with increases over 20 spm and more participants with negative results. Using one-way ANOVA to compare the groups' mean scores, we found that the mean increases of the four groups were significantly different, $F(3, 112) = 2.95$, $p < 0.001$. Post hoc comparisons using Tukey tests showed that both group A (M = 8.81, SD = 11.99) and group B (M = 8.07, SD = 11.79) had a significantly ($p<.0001$) higher mean improvement than group C (1.31, SD = 11.48) and group D (M = 3.21, SD = 11.48).

Taken as a whole, the experiment found that the participants, including the treatment groups did not remarkably increase their oral reading rate. However, there was a significant difference between the treatment groups and the control groups in terms of the average increases, the number of participants who made no improvement, and the number of participants with big

increases. Data analysis showed that no distorting factors affected the group's results. It can thus be assumed that the treatment groups outperformed the control groups in oral reading. Given that it is a transfer to a different medium, it is quite a good result.

The study also set out to see if there is a link between silent reading speed and oral reading rate among EFL learners. The participants' silent reading speeds in the course and on other types of texts and their oral reading rates were compared. Oral reading rate was measured using the wpm calculation to make it equal to silent reading speed. Silent reading rate in the course was measured by taking the average speed on the first three and the last three texts. The results are presented in Tables 11 and 12.

Table 11. Comparison of Initial Reading Rate in the Course, Initial Silent Reading Rate on Other Texts and Initial Oral Reading Rate for All Groups.

Reading rate type		Group A	Group B	Group C	Group D
Reading rate in the course	Mean	131.96	132.36	N/A	N/A
	SD	27.28	23.80		
Reading rate on other texts	Mean	118.87	119.73	118.96	113.82
	SD	34.95	39.62	26.12	30.72
Oral reading rate	Mean	112.71	116.71	116.62	114.84
	SD	16.51	18.78	17.23	18.54

Regarding the pre-test, it can be seen from Table 11 that the groups' average initial speeds in the course were the fastest among the three measurements. Their oral reading rates and silent reading rates on other types of texts were similar with the silent reading rates on other types of texts being slightly faster.

Table 12. Comparison of Final Reading Rate in the Course, Final Silent Reading Rate on Other Texts and Final Oral Reading Rate for All Groups.

	Group A	Group B	Group C	Group D
Reading rate in the course	188.90	183.36		
	40.73	38.18		
Reading rate on other texts	165.03	170.16	129.42	133.48
	36.75	34.61	20.50	27.18
Oral reading rate	118.52	122.03	117.56	117.02
	17.96	19.59	14.19	16.91

On the other hand, in the post-test (see Table 12), although the groups' average final speeds in the course were still the fastest of the three categories, their average reading speeds on other types of texts were substantially faster than their oral reading rates, especially for the two treatment groups. This was because the participants made substantial increases on reading other types of texts but small increases in oral reading. These results showed a trend that the participants' oral reading rates were generally slower than their silent reading rates. Researchers have shown that normal silent reading speed is around 250-300 wpm (Just, et al., 1987) while the normal oral reading rate is around 100-200 wpm (Meyer & Felton, 1999). However, it is interesting to find that in the pre-test, the participants' oral reading rates were not much slower than their silent reading rates on other types of texts.

Discussion

A strong relationship between reading speed training and EFL reading fluency has been reported in the literature (Chung & Nation, 2006; Macalister, 2008; 2010). However, very little was found in the literature on the question of whether speed increases in the speed reading course transfer to other types of texts (Macalister, 2010) and no data was found on the association between EFL silent reading speed and oral reading speed. This study set out to examine EFL reading fluency development in and outside a speed reading course and to determine if there is a link between silent reading rate and oral reading rate.

With respect to the first research question, it was found that both treatment groups made increases over 50 wpm within the speed reading course. This is a substantial improvement in reading speed and it is encouraging to reading instructors who are considering delivering a speed reading course to their learners. Most participants were reading with 70% accuracy of comprehension and could maintain it with a slight increase as they increased their reading speed. This shows that they were reading and comprehending the text rather than just looking at the words without understanding the presented thoughts. This result indicates that the speed increases in the course were a real meaningful improvement. This finding is consistent with those by Chung and Nation (2006) and Macalister (2008).

The results of the experiment also confirm the transfer of speed improvement to other types of texts. This is in agreement with Macalister (2010)'s finding. The data demonstrated that both treatment groups made substantial increases on other types of texts. Comparisons between the treatment groups and control groups were significant at the $p<0.5$ level. There was a strong relationship between the initial speeds and final speeds, showing that the participants' increases were a real improvement rather than just some erratic or dishonest behaviour. It was also found that the majority of the participants increased their comprehension accuracy or kept it at the same level as they improved their reading rates, showing that their speed improvement was meaningful.

The present experiment also investigated the influence of silent reading speed development on oral reading rate. The results indicate 77% of the treatment groups and 64% of the control groups read faster in the post-test. Although both categories made modest improvement with 9 spm for the treatment groups and 2 spm for the control groups, comparisons between the treatment groups and the control groups were significant at the $p<.05$ level. The results suggested two implications. On the one hand, it seems that generally oral reading speed does

develop along with silent reading speed, but the improvement is small. The finding has important implications for language teachers as it encourages teachers to balance the proportion of teaching productive and receptive skills in the language curriculum. Focusing on receptive skills with the hope that it will facilitate productive skills needs to be done with much more consideration to make sure that students are given enough chances to practice productive skills as well. On the other hand, because the treatment groups outperformed the control groups, it can be said that the speed reading course played a role in the participants' oral reading rate improvement. Since the main purpose of the speed reading course was not to help the participants to increase their oral reading speeds, and that oral reading skills largely belong to the productive dimension rather than the receptive dimension, it can be assumed that the extra effect of the speed reading course is substantial.

A comparison of average speeds in silent reading on other types of texts and oral reading demonstrated that before the treatment, the participants read at similar speeds for both oral reading and silent reading (around 118 wpm for silent reading and 115 wpm for oral reading). However, the results on the post-test found a greater difference between the participants' speeds in silent reading and oral reading (around 151 wpm for silent reading and 119 wpm for oral reading). This was because the silent reading speed improvement was substantial while the oral reading speed improvement was small. This finding, in one way, highlighted the effects of the speed reading course on silent reading speed improvement and in another way, demonstrated that participants may have learned how to avoid regressing and yet not missing important information from a text. It is also likely that they might have obtained some confidence about their reading achievement and hence dared to read faster.

Another obvious finding to emerge from this experiment is that the participants tended to read much faster in the speed reading course than in oral reading and silent reading of other types of texts. This pattern was found in both the pre-test and post-test. The difference can be explained in part by such psychological factors as pressure and anxiety. It seems possible that in the speed reading course, the participants were aware that their improvement was not part of the grading criteria at university and thus felt more relaxed to read. They were also told that the main goal of the course was to help them increase their reading speed but not to answer correctly all the comprehension questions. On the other hand, when reading other types of the texts and oral reading texts, they were not told anything about the aims of the tests. This may have made them feel more nervous and as a result negatively affected their speeds.

Conclusion

This study explores the relationship between oral reading and silent reading by looking at EFL learners' reading fluency charts in a speed reading course and their oral reading rates and silent reading rates on pre-test and post-test. All the participating groups were following the usual English program at university during the experiment. The two treatment groups followed a speed reading course, which lasted two months.

The study has yielded some interesting results. First, it was found that the treatment groups gained substantial increases in the speed reading course. Their silent reading rates also improved significantly from the pre-test to the post-test. Second, while increasing their reading rates, the treatment groups could keep their comprehension level at around 70%, which

indicates that their speed improvement were meaningful. In regard to oral reading rate, the research found that all the four groups made minimal increases, although the difference between the treatment groups and control groups was statistically significant. The results also indicate that the participants' oral reading rates were generally slower than their silent reading rate.

Several implications for language teachers can be drawn from the findings. On the one hand, it seems important for syllabus designers, language teachers, and learners, to be aware that improvement of receptive skills does not always result in development of productive skills. This calls for a balance of both productive skills oriented activities and receptive skills oriented activities in language programs. Particularly, language programs at schools and universities in Vietnam have lacked this necessary equilibrium and thus many language learners can read well but fail to communicate when needed. Perhaps Vietnamese language syllabus designers and teachers should integrate training and practice in both aspects in the language programs to make sure the learners develop their language skills in a balanced way. On the other hand, since the aim of the speed reading course was to improve the participants' silent reading rates, the oral reading rate increases that the treatment groups made can be considered a good extra effect of the speed reading course. This may be encouraging for English language teachers who are looking for a method to help their EFL learners improve reading fluency and other language aspects.

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