Effects of Times of Repetition, Text Features, and Vocabulary Knowledge on EFL Learners' Oral Reading Rates

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ABSTRACT

This study investigated the effects of assisted oral reading on EFL learners' oral reading rates and took into account repetition times, passage features (length and type), and language proficiency. Forty-nine students from a university of technology took part in a 27-week oral reading program. Teaching assistants were assigned to assist individual students' oral reading and offered immediate feedback for their performance. Students read a total of 27 texts, one per week. The texts involved 9 short- and 9 long-conversational texts, and 9 monologic texts. Each text was read six times and the time for each oral reading was recorded. The collected data were analyzed with HLM. The dependent variable was students' oral reading rates, and three fixed factors were repetition times, text features, and students' language proficiency. The results showed that students' oral reading rates significantly improved with times of repetition increased. Text length (shorter or longer) did not affect students' oral reading rates but text types (conversational vs. monologic) did. Higher-level students read significantly more fluently than those in the lower-level. Implication of the study results was discussed.

INTRODUCTION

Compared to L2 speaking fluency, oral reading fluency (ORF) is much less valued or has been ignored by language practitioners and learners. As an English teacher for more than 30 years, I often heard that students' main goal in learning English was to improve their speaking skills, but none spoke of improving their ORF. This may be due to the fact that ORF is not included in any English curriculum as a skill, and it is usually not assessed, as vocabulary or grammar is, in tests. In learning a language, ORF has been developed mostly to improve reading skills (e.g., Fuchs et al, 2001; Risinski, 2003), but not speaking. In learning a second language (L2), ORF may be considered to be one of the sub-skills of general speaking skills because ORF focuses not only on the reading speed but also on prosody. If a student can orally read a text correctly with proper speed and expressions, it would be more likely for them to speak appropriately because they would know when and where to pause, to raise their intonation, and to stop. As such oral reading could be seen as a stepping stone toward speaking. Unfortunately, research up to the present has not provided any connection between ORF and speaking. This study hence aimed at improving students' ORF in the hope that this practice would be beneficial for them to improve their speaking skills in the future. What is ORF then? ORF refers to the ability to orally translate a text with

speed and accuracy, and even better with prosody (see Kuhn & Stahl, 2003 for a review). When a text is orally practiced multiple times, it is called repeated oral reading (ROR).

Why is repetition necessary for developing fluency in oral reading?

Repetition, though often considered an old and boring technique, has been constantly used by people in various motor skills, such as playing a musical instrument, dancing, or driving. People seem to use it unconsciously and naturally; however, when it comes to learning an L2, repetition has been heavily criticized as mechanical, unmindful, and meaningless (see Gibson, 2008). Despite these criticisms, repetition has still been playing some role in successful learning an L2, such as speaking (Suzuki, 2021), learning vocabulary (see a review by Uchihara, Webb, & Yanagisawa, 2019), and listening comprehension (Chang & Read, 2006).

Repeating the same or a similar task many times is more likely to enable one to perform the task automatically, without much conscious attention to how it is done. In this study, ROR was adopted to promote EFL learners' oral reading rate. The theory is based on the model of automatic processing, which proposes that repeated reading can help language learners to practice low-level linguistic elements (Laberge & Samuel, 1974), i.e., word recognition, which involves more than just meaning encoding but also the interaction of the processing of knowledge of phonology, orthography, syntactics, etc. By being able to process the lower-level linguistic elements automatically, readers can allocate attention to higher-level processing, such as comprehension. Processing lower-level linguistic elements without difficulties is the most challenging task for L2 learners, many of whom have never achieved this level (Grabe, 2009).

LITERATURE REVIEW

The effect of repetition on developing L2 learners' oral reading fluency

As previously mentioned, repetition is a common practice for developing fluency across many fields. In developing oral reading fluency (ORF), repetition seems a must strategy. Although oral reading can be practiced with many variations, such as listening to teachers' reading texts or audio recordings, choral reading, echo reading, peer reading, etc., simply listening to modeling reading or reading in a group is not sufficient to developing fluency. Students must take action to practice it individually until a satisfactory level of fluency is reached. Individual oral reading in the L2 context, however, is less popular and is commonly practiced in the form of reading in unison. This is because individual oral reading is very time consuming and many teachers simply cannot afford the time to do it with each student individually (Chang, 2019). A disadvantage of reading in unison is that it is not possible to detect individual students' problems to provide them with immediate feedback. In the following, three studies that relevant to the present study, adopting individual oral reading practice, will be reviewed.

By employing teaching assistants, Chang (2019) was able to explore the effects of repeated oral reading practice on EFL learners' oral reading fluency development over a three-month period with 44 university students. The students were divided into four different subgroups according to language proficiency (LP 1-4, in which 1 was the lowest and 4 the highest). Each subgroup was assigned a teaching assistant to help with their oral reading activities. Each week the students orally practiced 1-to-3 reading passages five times, and then read the texts to their teaching assistants the

sixth time. If students did not read fluently or mispronounced more than three words, they had to continue the practice until the goal was achieved. The results showed that the middle two subgroups made more advancement than the highest and lowest subgroups, with 21 (28 →49), 30 (59→89), 38 (97→136), and 22 (132→154) words per minute for LP1, 2, 3, and 4 respectively. Despite the encouraging results, there was still considerable room in speed for students to improve, especially for the two lowest-level groups.

Another study adopted a peer-assisted reading via telecollaboration between 18 Taiwanese and 15 Australian pupils (Lin, 2016). The pupils assisted each other in orally reading a bilingual children's story three times, each time lasting 40 minutes. The study indicated that after three weeks, Taiwanese EFL pupils improved 5% in accuracy, 25 (100→125) words per minute and showed significant improvement in expression. Results for Australian pupils learning Mandarin, however, were not reported, and how many times students practiced at each meeting was unknown.

Relying on the advancement of technology, Chen, Tan, and Lo (2016) used digital pens to compare the advancement of oral reading rates of two groups of junior high students of EFL learners. One group used a digital pen and paper interaction platform (DPPIP) whereas the comparison group were taught through teacher's modeling, reading in unison, and peer reading. After a period of 6-week treatment, both groups made significant improvement on oral reading rates from the pre-test to the post-test; however, the group using digital pens (63 →90.37) outperformed the comparison group (62.59 →80.03) by 10 words per minutes in oral reading rate, and felt more motivated and satisfied with the intervention. It was apparent that using DPPIP was more effective than teachers' modeling or reading to peers. It was possible that students who used DPPIP could try as many times as they wish and DPPIP never became tired of students' attempts.

Taken together, the three aforementioned studies did repeated oral reading practice, but none of the studies mentioned the exact number of times their students practiced. It is therefore unknown how many times their students practiced. In addition, the overall findings showed that the L2 learners made some improvement in their oral reading rates after intervention but the average rates were still slow even after the intervention. One reason may be that these studies did not include other factors that may affect ORF, such as text features and readers' characteristics. Variability in ORF has been found to link to variations in passage features (i.e., length, types) and readers' characteristics (e.g., sight word efficiency, and phonological decoding skills) (Barth et al, 2009, 2014; Betts, Pickart, & Heistad, 2009). In the following, some brief findings for readers' characteristics, and text types and length in both L1 and L2 will be reviewed.

Text features on oral reading rates

Passage length

Passage length has been found to influence oral reading rates (Barth et al., 2014; Biancarosa, 2005; Daane et al., 2005). Danne et al. examined the influence of reading duration on Grade 4 students' oral reading rates. They found that for skilled readers, reading duration on reading fluency rates was comparable between the first 60 seconds and the full passage; however, for struggling readers, reading duration affects their ORF; the shorter period of time, the better their performance. Biancarosa et al. (2005) also compared sentence reading (short) and passage reading (long) on students' reading comprehension and oral reading rates. They found that passage reading rates explaining more variance in reading comprehension than sentence reading rates. Barth et al. (2014) explored the effects of student and text characteristics on oral reading fluency and reported

that all text features (lexile, narrativity, page length, and referential cohesion) collectively accounted for approximately 55% of the variance in ORF performance. When the text length was categorized into 0.5, 1, and 1.5 pages respectively, a significant difference was found in reading 1.5 page and 0.5 page, but no significant difference was found between 1 page and 1.5 page. Students' oral reading fluency was 2.5 WCPM higher for a half page of text than for more than one page of text. Overall, texts are read at a slow rate when passages are longer.

Text types

Different text types, such as narrativity or expository, may be written in different levels of language difficulty, e.g., vocabulary levels, syntactic simplicity, word concreteness, referential cohesion, etc. Many previous L1 studies have confirmed the link between oral reading rates and text types (e.g., Barth et al., 2014; Betts et al, 2009), and text features were found to account for up to 55% of the variance in ORF performance (Barth et al., 2014). When each text feature was considered independently, lexile and narrativity accounted for greatest amount of variance in ORF abilities. Some interesting findings were that students' oral reading rates decreased by 8.6 WCPM per standard deviation (SD) when increase in text types measured on the lexile scale, but increased by 6.4 WCPM per SD in narrativity. Students read approximately 7.6 WCPM higher for narrative text than expository text. From the above, it is evident that text types (text types) affect students' oral reading rates more than text length.

Characteristics of the readers

The influence of readers' characteristics on oral reading fluency is substantial, which may include grade levels, gender, foundation of English skills, age, socioeconomic status, verbal ability, etc. Above all, readers' good foundation of phonics awareness and word recognition skills seem to greatly affect ORF, so in this study, the focuses were on students' sight word reading and phonological decoding.

Sight word knowledge

Sight word knowledge refers to the words for which readers can immediately recognize the form-meaning connection without decoding difficulties. According to Nation (2006), the first 1,000 words plus proper nouns cover 78%–81% of written text, and around 85% of spoken text. Given the high percentage of coverage of the first 1,000-word level, learners must be familiar with the most frequent words, so they can read and speak more fluently and comprehend better. Sight word knowledge in the earlier L2 research has been used to measure L2 learners' four skills performance, but it is hardly ever used in ORF. Previous L1 research has shown that sight word reading efficiency accounted for 58% to 82% of the variance in ORF (Torgesen, Rashotte & Alexander, 2001), and Barth et al. (2009) also reported 0.91 for the standardized factor loading of sight word reading on ORF.

Phonological decoding

Phonological decoding knowledge refers to the ability to correctly pronounce the words immediately when they are presented; therefore, in addition to getting familiar with the form-

meaning connection of a word, learners must also know how a word is pronounced. In L2 research, many studies have shown that L2 listening proficiency is strongly associated with aural vocabulary knowledge (see Hamada & Yanagawa, 2023). Comprehending the aural form of a word is not sufficient in ORF; learners must have good phonological decoding skills to perform in OR. In L1 research on ORF, Torgesen et al. (2001) found that phonological decoding accounted for 2% -10% of variance in reading fluency after controlling for sight word efficiency. Similarly, Barth et al. (2009) reported 10% of variance after working memory and nonverbal cognition were controlled. The relationship between phonological decoding and reading fluency was even higher for struggling readers (r = 0.73) than for typical readers (r = 0.57) (Cirino et al., 2013), and an even higher correlation coefficient (0.93) between the two constructs was reported by Adlof, Catts, and Little (2006). It is apparent that phonological decoding knowledge is a good indicator of ORF.

The present study

The above studies show that ORF in L1 were quite thorough and extensive; however, it has been less so in L2, and L2 researchers mainly focused on oral reading rates without taking into account text features (e.g., text types, and text length), and the characteristics of the students (i.e., sight vocabulary, and phonological decoding). Although the above three L2 ORF studies adopted different forms repetition, the optimal number of repetition times is still unknown. This study therefore included two text features (length and types) and language proficiency (measured through sight vocabulary knowledge and phonological decoding), and times of repetition to examine the extent the three factors affected L2 students' OR. Three research questions were as follows:

RQ 1: How did students' oral reading speeds change by the times of repetition?
RQ 2: Were students' oral reading speeds affected by text features (lengths and types)?
RQ 3: To what extent did students' language proficiency measured by sight vocabulary and phonological decoding knowledge (higher vs. lower levels) differ in the oral reading speeds?

METHOD

Participants' profile

Forty-nine freshmen (male = 21; female = 28) from a university of technology took part in the oral reading fluency program. All of them were required to enroll in a one-year freshman English course, which was a two-hour course per week; none took other courses related to English. According to the results of the pre-intervention questionnaire, Chinese was their native language. All of them graduated from vocational senior high school and their majors were tourism, hospitality, pop music and performing arts, and marketing. Students' background profiles also showed that all the student participants had received a minimum of 12 years in formal English instruction, and 70% of students studied only one to two hours per week during their senior high school period. The test of their first 1,000 sight words knowledge and phonological decoding skill (also see p. 9 for details) showed the average score of the first 1,000 sight words was 27.45 out of 30 (*SD* = 2.78), and 23 out of 30 (*SD* = 4.81) for the phonological decoding score. Most of the students could recognize the meanings of most frequent 1,000-level words, but the pronunciation of some words was still unfamiliar to them, so those students whose sight word scores below 27

and phonological decoding scores below 23 (including 23) were classified in the lower level, otherwise in the higher level. Their ways of learning English were rote memorizing vocabulary (67.3%) and visualizing vocabulary (46.4%). Very few of them had opportunities to practice their spoken English. From students' background profile, it was apparent that they needed a great deal of assistance in the oral reading program. That was the reason that teaching assistants were brought to the classroom to facilitate their learning.

Oral reading texts

The oral reading passages were selected from students' uniform course book. Each text was scanned into a Word file and proofread by two English teachers for its accuracy. Vocabulary of the texts were analyzed by BNC/COCA (the British National Corpus and Corpus of Contemporary American English) and sentence lengths were analyzed by Compleat Lexical Tutor by Tom Cobb (https://www.lextutor.ca/). Each unit contained three parts. Part 1 and Part 2 are conversational texts but different in length; Part 3 contained monologic texts. Part 1 had nine short texts with an average of 109 words in each text, and the average of sentence length was 6.01 words. Nearly 95% of the words were from the first 3,000 words. Part 2 contained nine longer conversations with an average of 187 words per text; the average sentence length was 5.91 words. Approximately 90% of words were from the first 3,000 words. Part 3 included nine monologic texts, such as weather reports, or announcements. Each monologic text contained an average of 113 words, and 95% of the words were also comprised from the first 3,000 words; however, each sentence contained an average of 13.63 words, which was much longer than those in Part 1 and Part 2 (see Table 1). A consensus regarding text difficulties is that if a text read with less than 90% accuracy is hard and a greater than 95% accuracy reading is easy, and between 90% and 94% is instructional (Rodgers, et al.,2018). Based on the criteria, all the texts fell in the instructional category. The details of vocabulary profiles for each part can be seen in Appendix A.

Table 1. Summary of the Oral Reading Texts

	Part 1	Part 2	Part 3
Number of texts	9	9	9
Text types	dialogue	conversation	monologue
Average of words per text	109	187	113
Sentence length	6.01	5.91	13.63
Word length	4.03	4.04	4.40
Total words	986	1,658	1,020

Tests of learners' phonological decoding and sight vocabulary

To classify the student participants into different levels, a phonological decoding test and a sight vocabulary test were given before the intervention. Thirty 1,000-level words used in The Updated Vocabulary Levels Test (Webb, Sasao, & Balance (2017) were selected for the tests (see Appendix B for the selected 30 words). The same type of test was previously used in Chang and Chen (2020) for measuring college students' high frequency word knowledge, and was found very reliable.

The phonological decoding test was to assess students' ability to pronounce the target words accurately and automatically. Two English teachers rated students' oral vocabulary test based on the accuracy and fluency. Some consistent rating rules were first set up before the test. The students were not allowed to preview the target words, and a timer was used to control the time spent by each student. Each student was allowed 40 seconds to finish the 30 target words. When the time was up, the students stopped reading.

A sight word test was administered to assess students' vocabulary breadth of the first 1,000 words for form-meaning connection, and it was administered immediately after the phonological decoding test. Students had to demonstrate how well they could produce the meaning of a word without much effort. The students saw an underlined word in a sentence, for example, he has many friends, then they had to write the Chinese meaning that best describes the word. Students had to finish the 30-item test in six minutes.

Dependent measure: Repeated oral reading speed

Students had to read each text six times. The speeds for the first five times were recorded by students themselves through their cellular phones, and the sixth time was recorded by their teaching assistant. Their first reading speed was compared to the subsequent five reading speeds to examine their improved reading rates (if any). The fifth speed was compared with the sixth speed to examine whether students' oral reading speed decreased when they read to their teaching assistants.

Course instruction and research procedure

All participants were given a phonological decoding test and a sight vocabulary test the first week. In the second week, students filled out a pre-intervention questionnaire (12 items, results were not reported in this study) and were given the course introduction and instruction of how to do repeated oral reading. Every student was given a form in which students had to record the time they spent orally reading each text.

The same instructor taught the course throughout the 27-week intervention period. Every three weeks was a teaching cycle; the cycle began with a short conversational text, then a long conversational text, and finally a monologic text. Each week, the instructor taught a text, followed by students orally practicing the text. The instruction involved teaching vocabulary, grammar, pronunciation, cultural points, and orally reading the text at slower and normal speeds. During the practice period, students could listen to the audio version of the text if they needed, and students were also allowed to discuss with each other or to ask questions to their teaching assistants and the instructor. Approximately 12 students were assigned one teaching assistant. The students had to read five times on their own, followed reading the sixth time to their teaching assistants, who recorded the time students spent on the last reading of each text and mispronounced words. After that, the teaching assistants gave students feedback on their performance.

Data analysis

Data for oral reading speed were collected from 49 students who fully completed reading all the required 27 texts. The oral reading speed was calculated by (total correct words read/ total seconds) *60. The data for oral reading speed were analyzed with Hierarchical Linear Modeling

(HLM), which is, simply put, an interaction model that allows an investigation between individuals and their group context (Griffin, 1997). In the present study, the data were a two-level nested structure. The second level is the inter-individual level while the first level is the intra-individual level. To be more specific, the first level is the independent variables involving three factors: students' practice times (6 levels: times 1-6), texts (3 levels: parts 1-3), and language proficiency (2 levels: higher vs. lower) while the second level is the dependent variable: students' reading speeds (continuous). The participant was used as the random factor and is not the main interest of the study, so the analysis did not estimate the effect of each of the participant in the data.

## RESULTS AND DISCUSSION

Descriptive statistics

Table 2 presents the marginal means for the three fixed variables (times, texts, and LP). For the times of repetition, an incremental rate was shown (see Figure 1); each time students increased 2-5 words correct per minute (WCPM). For the text factor, students orally read the comparable speed for short (WCPM = 126) and long conversational texts (WCPM = 128), but much more slowly for monologic texts (WCPM = 110) (see Figure 2). Students of higher level of language proficiency read faster than those in the lower levels (see Figure 3).

Table 2. Estimated of Marginal Means, Standard Errors, and 95% CI for Different Parts of Text, Times of Repetition and Levels of Proficiency

Fixed factors	Mean (WCPM)	SE	95% CI low	95% CI high
Times				
1	112	2.62	107	118
2	117	2.67	112	123
3	121	2.65	116	127
4	123	2.62	118	129
5	126	2.71	121	132
6	128	2.54	122	133
Texts				
Part 1	126	2.87	121	132
Part 2	128	2.62	122	133
Part 3	110	2.43	105	115
LP				
high	132	3.88	124	140
low	110	3.29	104	117

Note: WCPM: words correct per minute. Part 1: short texts; Part 2: long texts; Part 3: short monologic texts
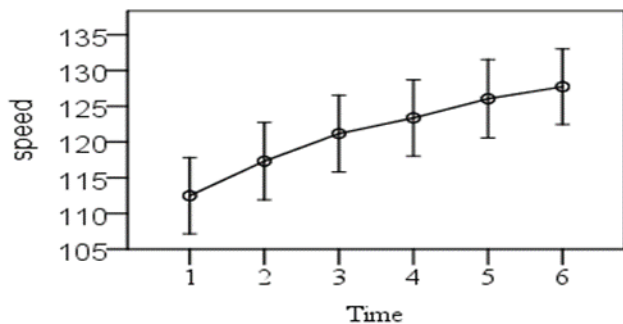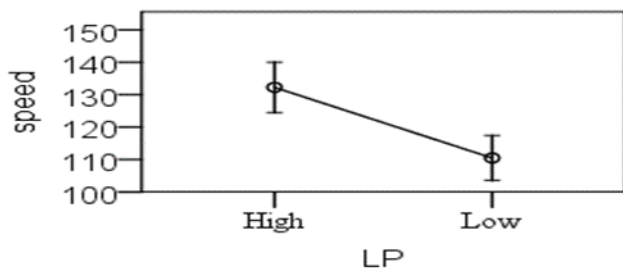
Figure 1. Times in Repetition on WCPM (The Error Bars Indicate the Range of the Low and High 95% CI)
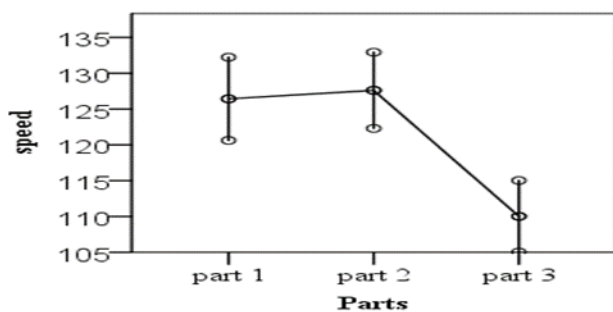
Figure 2. Text Features on WCPM (The Error Bars Indicate the Range of the Low and High 95% CI)

Figure 3. Language Proficiency on WCPM (The Error Bars Indicate the Range of the Low and High 95% CI)

RQ 1: How did students' oral reading speeds change by the times of repetition?

The analysis of HLM (Table 3) showed that students' oral reading speed improved as the number of repetitions increased. When Time 1 was used as the reference group, students' speed significantly increased each time. To reduce the length of Table 3, other paired sample t-tests are presented in Table 4, which indicated Time 3 vs. Time 2, $t = 9.69$, $p <.001$; Time 4 vs. Time 3, t = 6.76, p < .001; Time 5 vs. Time 4, $t = 5.98$, $p < .001$. The results revealed that students' oral reading speed increased significantly each time. Better still, students' oral rates did not decrease when they read to their TAs because there was not significant difference between Time 6 and Time 5, $t = 1.38$, $p = .18$.

In this study, students repeatedly read the same text six times. Each time students increased approximately 2 to 5 WCPM. Students improved the most from Time 1 to Time 2 (4.83 WCPM), followed by Time 2 to Time 3 (3.85 WCPM). Although the reading rates continued improving, the rates seemed to slow down after at Time 4, Time 5, and Time 6. From Time 1 to Time 3, students improved a total of 8.69 WCPM. Repeating another three times (Time 4 to Time 6) gained an average of 6.56 WCPM. Some observations from students' practice may explain that reasons that the improvements increased more in the first two repetitions but became slower after the 4th or 5th repetition. At Time 1, most students read at very short chunks or even word by word, which led to many pauses. They increased their speech rates after each practice because they became more familiar with the content and the structures of sentences, so they could read at larger chunks and made fewer pauses. For example, students made up to eight pauses at Time 1 when they read the sentence— "Oh, yes, they're amazing. /The mixture/ of a juicy burger/ and a crispy noodle/ 'bun'/ with the Japanese flavors/ makes it /a real treat/ for your taste buds." At Time 2 or Time 3, they could read the whole chunk— the mixture of a juicy burger, and a crispy noodle bun, without pauses. Familiar words and chunking could be improved more quickly after two or three repetitions. This kind of practice was similar to the speaking fluency technique 4-3-2 (dos Santos & Ramírez-Ávila, 2022; Newton & Nation, 2020) because each time learners became more familiar with the content and meanings of words and phrases. The areas that were more difficult to become automatic were the contraction forms (e.g., they're. we'll, he'll), unknown words, unfamiliar grammatical structures, and proper nouns. I noticed that students made many mistakes for contractions forms. For example, they would read "they're" as "they are," and he'll as "he will." As well, students always dropped their speed when encountering proper nouns, especially the names of places. Some words, such as mechanic, electrician, are difficult to pronounce, and some students simply could not say them correctly after many attempts. It may take some time for L2 readers to turn the newly learned items to their sight words. Apart from the linguistic aspects, physical responses also made them become slower after a few trials because some students reflected they became tired and thirsty after repeatedly reading three times. Finally, the reason for no significant difference between Time 5 and Time 6 was likely due to anxiety. Many students expressed that they were anxious when students read to their teaching assistant at Time 6; therefore, the improvement was limited, only 1.69 WCPM.

Table 3. Summary of Analysis of HLM

Fixed effects	B (95% CI)	SE	t	p
Intercept	128.45 (120.22 to 136.68)	4.11	31.23***	<.001
Times				
T1[a]	Ref.			
T2	4.83 (2.86 to 6.81)	0.99	4.88***	<.001
T3	8.69 (6.40 to 10.98)	1.16	7.51***	<.001
T4	10.88 (8.36 to 13.41)	1.28	8.52***	<.001
T5	13.56 (10.71 to 16.42)	1.44	9.42***	<.001
T6	15.25 (12.00 to 18.50)	1.65	9.27***	<.001
Texts				
Part 1[a]	Ref.			
Part 2	1.18 (-1.63 to 3.99)	1.40	0.84	.403
Part 3	-16.41 (-19.03 to -13.78)	1.24	-13.27***	<.001
LP				
High[a]	Ref.			
Low	-21.78 (-32.15 to -11.41)	5.09	-4.28***	<.001
Random effects	Variance	SE	Z	p
Between groups (Error, u_{0j})	322.817	68.848	4.689***	<.001
Within groups (Error, e_{ij})	340.409	6.661	51.102***	<.001

Note: [a] the reference group
*$p < .05$, **$p < .01$, ***$p < .001$

Table 4. Paired Sample t-Test for Students' Oral Reading Speed

Time	Contrast estimate	SE	t	df	Adj. Sig.	95% CI Low	High
6 - 5	1.69	1.22	1.38	35	.18	-0.80	4.17
5 - 4	2.68	0.45	5.98	386	.00***	1.80	3.56
4 - 3	2.20	0.33	6.76	1015	.00***	1.56	2.83
3 - 2	3.85	0.40	9.69	256	.00***	3.07	4.64
2 - 1	4.83	0.99	4.88	85	.00***	2.86	6.81

Students' oral reading rates and text length and types

RQ 2: Were students' oral reading speeds affected by text features (lengths and types)?

To the text factor, there was no significant difference when students read the Part-1 and the Part-2 texts, $t = -0.84$, $p = .40$, which meant that the text length did not affect students' overall oral reading speed to a significant degree. Text types however had a significant effect on students' reading speed. Students read much more slowly for Part-3 monologic texts when compared with long conversational texts, $t = -15.52$, $p < .001$, and with short conversational texts, $t = 15.27$, $p < .001$ (See Table 5). The reason might be that the short and long conversational texts were quite comparable in their vocabulary levels and in the average words in sentences (6.01 vs. 5.96). If we look at the vocabulary profile of the three parts at Appendix A, we may find that Part 3 contains

more the 2nd and the 3rd 1,000 level words than Parts 1 and 2. Apparently, the vocabulary words in Part 3 were more difficult than those in Part 2 and Part 1. According to Barth et al. when lexile was more difficult, students read more slowly. In addition, from students' weekly practice, it was observed that students paused more frequently when reading Part 3, which was due to the sentence lengths being much longer and sentence structures being more complicated than those in Parts 1 and 2. The average sentence length for part 3 was 13.63 words, whereas it was 6.01 words for part 1 and 5.91 words for part 2. It is apparent sentence length and sentence structure play an important role in oral reading fluency. The findings were consistent with those with Barth et al. (2014).

Table 5. Paired Sample t-test for Students' Oral Reading Speed on the Text Features

Texts	Contrast estimate	SE	t	df	Adj. Sig.	95% CI Low	High
Part 3-2	-17.59	1.13	-15.52	146	.00***	-19.83	-15.35
Part 1-3	16.41	1.24	13.27	16	.00***	13.78	19.03
Part 1 - 2	-1.18	1.40	-0.84	55	.40	-3.99	1.63

Note: Part 1: short dialogue; part 2: long conversation; part 3: monologue

RQ 3: To what extent did students' language proficiency measured by sight vocabulary and phonological decoding knowledge (higher- vs. lower- levels) differ in the oral reading speeds at each repetition?

To the effect of students' relative language proficiency on oral reading speed, Table 1 shows that higher-level students read at an average rate of 132 WCPM whereas the lower-level students at 110 WCPM. The average difference was statistically significant, $t = -4.28$. $p <. 001$(see Table 3). Table 6 presents higher- and lower-level students' oral reading speed for each time and for different parts. As shown, at Time 1 across the three parts, the differences between higher- and lower-level students were always smaller than for those in Time 6. For example, the differences were 19, 14, 19 WCPM for Parts 1, 2, and 3 respectively at Time 1; however, the differences were 25, 19, and 22 WCPM at Time 6. On the whole, the higher-level students improved 20, 16, and 15 WCPM for parts 1-3 whereas it was 14, 11, and 12 WCPM for the lower-level students. The above finding can be explained by the fact that higher-level students had better knowledge for the accuracy in phonological decoding and form-meaning connection, so they could place more effort on fluency. Lower-level students, however, needed to pay more attention to accuracy, which might have slowed down their reading rates.

From the comparisons, it was apparent that there was a Matthew Effect—the higher-level students made faster advancement than the lower-level students; however, it has to be noted, that in the present study, relative language proficiency levels, not real language proficiency levels obtained from a standardized test, were used to categorize the students into two different levels. It is, therefore, difficult to compare with other studies concerning whether more advanced students gain more rates. For example, in the study by Chang (2019), a subgroup with a pre-test rate of 96 WCPM made significant more advancement than the subgroup with 132 WCPM in the pre-test, which might be due to the room for improvement for the latter subgroup being more limited than the former one. No ceiling effect was found in the present study because the rates for the higher-level students were 145, 140, and 125 WCPM for each part, and much lower rates for the lower-level students. The results implied that students in the both lower and higher levels still had much

room to improve their oral reading rates. Overall, that higher-level students gain more from intervention than those in the lower-level seems to be a tendency, which can be also found in many previous studies on other areas, e.g., vocabulary learning (Peters & Webb, 2018; Webb & Chang, 2015).

Table 6. Oral Reading Rates by Students ff High- and Low-Levels Under Each Time and Different Text Features

Times	Part I (short conversations)		Part II (long conversations)		Part III (monologues)	
	High	Low	High	Low	High	Low
1	125*	106	124	110	110	91
2	132	108	132	115	115	93
3	136	112	136	117	120	95
4	139	114	138	119	123	97
5	141	116	141	124	124	100
6	145	120	140	121	125	103

*WCPM: words correct per minute

PEDAGOGICAL IMPLICATIONS AND CONCLUSIONS

The findings of the study may have some pedagogical implications for L2 teachers who want to include oral reading practice in their teaching. These implications are as follows:

1. Reading a text a minimum of three times seems to be a must in oral reading practice because compared to students' first oral rate, students' gain in the second, and third repetitions was much larger than that in the fourth and the fifth repetitions. To improve fluency, apart from the times of repetition, it might be even better if some difficult words or grammatical structures are taken out from the continuous texts and practiced separately until students become automatic in producing them.
2. To improve fluency in producing spoken texts, students should practice a series of similar or related texts, which may increase their automaticity in processing similar vocabulary and sentence structures. This is particularly helpful for the lower-level students, in particular in the beginning stage.
3. Many low-level students had a phonological decoding problem, and reading continuous texts was simply not possible for them. This observation has an important implication for language teaching. The low-level students should start from reading individual words or phrases. After they have developed automaticity in word recognition and phonological decoding, they then can proceed to read sentences and short texts.

Before concluding this paper, a few limitations should be pointed out. Firstly, the materials used were not particularly developed for oral reading, so each text contained some difficult vocabulary words, and the monologic texts contained long sentences, which had made oral reading more challenging for the lower-level students. According to Rogers et al., (2018, p.4), "…reading texts with less than 90% accuracy is deleterious to student reading progress." Future studies may

have to select different levels of text types to suit students' language proficiency. Secondly, this study required students to repeatedly read six times and students' reading speed increased incrementally; however, it is unknown how many times students' OR may reach the ceiling effect. Future studies may expand the reading times to see whether it is worthwhile to increase repetition times. Fourthly, this study brought in TAs to classroom to assist students' OR. With the advancement of technology, other methods such as shadowing or digital pens may be compared to see which techniques can produce the best results. Fifthly, students in this study did OR only once a week; the frequency is too sparse to see substantial improvement. If EFL students can do OR more frequently like L1 students (DiSalle & Rasinski, 2017), significant effect should be shown before long. Last but not the least, the present study did not involve the investigation of how oral reading practice influenced students' speaking skill development. This area has not yet been researched. All these unanswered questions rely on future research to seek answers. More research into these research questions is warranted.

ACKNOWLEDGEMENTS

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APPENDICES

Appendix A:

Vocabulary profile of Part 1

Word Lists	Tokens/%	Types/%	Families/%
One	857/86.92	313/75.24	247
Two	55/ 5.58	43/10.34	41
Three	10/ 1.01	10/ 2.40	10
Proper nouns	0/ 0.00	0/ 0.00	0
Not in the list	41/ 4.16	33/ 7.93	
Total	986	416	313

Vocabulary profile of Part 2

Word Lists	Tokens/%	Types/%	Families/%
One	1400/84.44	381/67.67	296
Two	81/ 4.89	56/ 9.95	51
Three	24/ 1.45	19/ 3.37	18
Proper nouns	0/ 0.00	/ 0.00	0
Not in the list	93/ 5.61	59/10.48	
Total	1658	563	410

Vocabulary profile of Part 3

Word Lists	Tokens/%	Types/%	Families/%
One	844/82.75	356/71.06	295
Two	97/ 9.51	82/16.37	81
Three	26/ 2.55	19/ 3.79	18
Proper nouns	0/ 0.00	0/ 0.00	0
Not in the list	33/ 3.24	24/ 4.79	
Total	1020	504	413

Appendix B: The first 1,000 levels selected from The Updated Vocabulary Levels Test (Webb, Sasao, & Balance (2017)

choice, garden, photograph, van, voice, center, uncle, horse, house, bath, shoulder, law, price, forget, laugh, prepare, suit, fight, return, bring, reply, stare, understand, alone, loud, main, awful, grass, exciting, general.