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The Effects of Repeated Oral Reading Practice on EFL Learners' Oral Reading Fluency Development

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ABSTRACT

This study explored the effects of repeated oral reading practice on EFL learners' oral reading fluency development over a three-month period. The participants were 44 hospitality majors, divided into four different subgroups according to language proficiency (LP 1-4, in which 1 was the lowest and 4 the highest). To examine the changes of students' oral reading rates, rates were compared between texts with repeated practice (during the intervention) and texts without practice (before and after the intervention). Each week the students practiced 1-3 reading passages in class, and each passage was read a minimum of five times, and the practice rates were recorded. A generalized linear mixed effect model was used to analyze their oral reading rate changes before, during, and after the intervention. The results showed that significant differences across different LPs were found when comparing the rates on texts with and without repeated practice; however, all groups made comparable improvements after the 12-week intervention, with 21, 30, 38, and 22 words per minute (wpm) for LP1, 2, 3, and 4 respectively. Despite the comparable improvements from the pre-test to the post-test, there was still considerable room for improvement for LP1 and LP2. The results have pedagogical implications for developing students' sight and oral vocabulary.

INTRODUCTION

Oral reading fluency has been a central issue in English as a first language (L1) settings because it is a good indicator of reading competence (e.g., Fuchs, Fuchs, Hosp & Jenkins, 2001; Jiang, 2016), and it is also commonly used by L1 teachers as a teaching aid or as a remedial approach to reading literacy (e.g., Rasinski et al, 2009). Despite its popularity in the L1 context, it is not commonly used by L2 language teachers, mainly because it is very time consuming, requiring more individual attention than most teachers can provide. This limitation results in many L2 students having few opportunities to read English aloud or having their pronunciation corrected during their entire English-learning journey. According to the researcher's teaching experience with L2 university students, however, oral reading has been well received and is the quickest way for students to experience a feeling of success.

Theoretical background of repeated reading

Oral reading fluency generally refers to the ability to read a text smoothly, effortlessly, and with appropriate prosodic features and with high comprehension (Kuhn & Stahl, 2003; Grabe, 2009). Language practitioners have used many approaches to improve reading fluency. In this study, repeated oral reading is adopted. This method was designed by Samuels (1979) based on the model of automatic processing (Laberge-Samuel, 1974), which proposes that repeated reading can help language learners to practice low-level linguistic elements, such as word recognition and meaning encoding, hence accelerating their progress from the non-accurate stage to the accuracy stage, and finally to the automatic stage. By being able to process the lower-level linguistic elements automatically, readers can allocate attention to higher-level processing, such as reading comprehension.

Research findings for the effects of repeated (oral) reading in L1 context

Repeated oral reading is common in the L1 context and has been experimentally shown to benefit young learners and struggling learners. Repeated oral reading may be practiced with some variations. For example, young children may listen to teachers read aloud or read to teachers and receive corrective feedback. Children can also practice with modeling through audio recordings or read to peers to obtain reciprocal feedback. Some L1 research findings are briefly summarized below:

1. Repeated reading, regardless of whether it is assisted or unassisted, improves student reading rates, accuracy and comprehension, all of which leads to further improvements in prosody. The four elements seem to link closely to each other (Dowhower, 1987).
2. L1 learners who repeatedly read a small number of texts do not demonstrate more improvement than learners who read texts with more words but without repetition (Kuhn, Schwanenflugel, Morris, Morrow, Woo, Meisinger, & Sevcik, Bradley, & Stahl, 2006; Schwanenflugel, Kuhn, Morris, Morrow, Meisinger, Woo, & Sevcik, 2009).
3. Assistance with modeling (live or audio recording) has been found to improve reading rates in general. Some studies found slower modeling rates are more effective than faster rates (Skinner et al, 1997); however, Lionette and Cole (2004) found both modeling rates helpful, as long as the modeling rates are close to the reader's actual reading rate.
4. Some studies found students who read harder materials made more progress (Morgan, Wilcox, and Eldredge, 2000) whereas others suggest that students should read texts within their comfort zone (Rodgers, D'Agostino, Kelly, & Mikita, 2018).

The effect of oral reading practice in the L2 context

Individual oral reading is uncommon in the teaching of L2 because it is time consuming, so some teachers ask their students to do choral reading in class. With choral reading, however, it is not possible to detect who has decoding problems or who is actually reading aloud. These difficulties might be the reasons that few studies can afford to investigate the development of L2 learners' oral reading fluency. Lin (2016), however, conducted a peer-assisted reading study between 18 Taiwanese and 15 Australian pupils. They 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 were not reported.

Another study by Papadima-Sophocleous and Charalambous (2014) was conducted with eight Cyprus university students who had learning difficulties. The researchers selected three authentic texts for the participants to practice outside the class and recorded their best performance after repeatedly reading with iPod support. After eight weeks' independent practice, positive results were found for their oral reading rates, prosodic features, and some specific phonemes.

A recent study on oral reading fluency was conducted by Shimono (2019), who investigated three groups of students' oral reading in three conditions: a combination timed reading plus repeated oral reading (TROR), timed reading (TR) only, and no treatment. The instructor demonstrated the oral reading to the TROR group after silent timed reading, then students did the practice in pairs and read to each other. Students' oral fluency development was rated through a 5-point scale based on their oral recording of a 168-word passage on six dimensions: intonation, rhythm, stress, speed, pronunciation, and intelligibility. The results show that the two experimental groups made significantly more improvement than the control group, and TROR also significantly outperformed the TR group. One interesting finding of the study was that the TR group gained most on oral speed though they did not practice oral reading. This seems to imply that the increase of silent reading speed may be transferred to oral reading rate. The strength of Shimono's study was that it involved six dimensions; however, using a five-point scale to rate students' oral reading fluency, including speed, seemed to be somewhat simplistic. Although the oral reading speeds were rated 2.60/5 for the TROR group, and 2.76/5 for the OR group, the exact speed is still unknown; the same can be said of the number of words per minute the students could read correctly with a rating of 2.50/5 and 2.35/5 for the two experimental groups respectively. Shimono, however, commented that despite significant gains for the treatment groups, "there is still room for improvement in the areas of prosody, speed, and accuracy for these learners" (p. 150).

The above three studies were conducted either through live or prerecorded assisted reading, and the results were encouraging for both elementary and college students. The sample sizes in the three studies, however, had only a small number of student participants, and it is unknown how higher-level students versus lower level students differed during the treatment period. This study hence will take into account individual differences. A group of 44 hospitality majors were involved in the study. They were divided into four relative LP levels. One main research question with a supplementary question was addressed: How many words per minute did the EFL learners of different LP read before, during, and after the intervention? Did the oral reading rate gains differ significantly at different times with different LP students?

METHODOLOGY

Participants

The study involved 44 university freshmen majoring in hospitality in Taiwan, among which 41 students completed the full program. They had learned English for 12 years through formal instruction at school; their language proficiency ranged from beginning to low-intermediate level, based on a 25-item sight-word

assessment (details below). The students were classified into four language proficiency (LP, hereafter) levels according to the number of correct items read: below 10 items (LP1); 11-15 items (LP2), 16-20 items (LP3), and 21-25 (LP4). The average raw scores of the 25 sight words were 5 (= 20%), 13 (= 52%), 18 (= 72%), and 22 (= 88%) for each individual level. According to students' report in the interview, few of the participants had had experience in oral reading. They felt both excited and nervous when they were asked to read English aloud. The participants read at their own pace for 100 minutes per week in class, and timed and recorded their oral reading speed and time spent on reading each passage.

Practice materials

The researcher purchased the materials used for oral reading fluency practice from "Reading A-Z" (https://www.readinga-z.com/fluency/fluency-practice-passages/?f=site_and_dist/nonbooks/fluency_passage/Fluency). A total of 168 texts were available for the researcher's use. Because many students had low language proficiency, they did not know how to select appropriate texts for themselves (Birketveit, Rimmereide, Bader, & Fisher, 2018; Chang, 2019), so the researcher selected shorter texts for them to use in the beginning. Some 40 texts were selected, and most were nonfiction texts requiring little background knowledge to comprehend them, e.g., *Good Things to Do* and *Eggs*. Among the 40 texts, the shortest one contained 77 words; the longest had 162 words. After 12 weeks, LP1 read 18 texts (1,554 words), LP2, 24 texts (2,119 words), LP3, 25 texts (2,281 words), and LP4, 35 texts (3,483 words).

Measures of oral reading rates

Pre- and post- test rates: A nonfiction text, *The Garden*, was selected for the pre-test and post-test; it was not included in the practice texts. The text contains 110 words. The students previewed the text for three minutes before reading orally to two native speakers of English, one American and the other English. Both raters taught English at different universities in Taiwan and were experienced in teaching speaking. Some rules for consistent rating were discussed before the beginning of the oral reading pre-test; variations between British English and American English were considered acceptable because the students were not previously limited to learning British or American English only. Each student was allowed one minute to read the text, and the student was not allowed to take the text away after reading. The same text could thus be reused in the post-test. The oral reading rates were calculated by the following formula: [(Total words read-wrong words)/seconds spent on reading] x 60

Practice reading rates: The practice reading rates were the average rates of each student's last reading rate of each text. After at least five times of individual practice, each student read aloud to their teaching assistant. If a student committed errors or read too slowly, she/he was asked to go back to practice until achieving a more acceptable rate. Different LP groups read a varying number of texts. On average, the LP4 read 3 texts per week, LP3 and LP2 read 2 texts, and LP1 read 1.5 texts.

Data analysis

SPSS version 25 for Windows was used to analyze the data. Three students who did not complete the full program were excluded from the study. To answer the main research question, students' three oral reading rates were calculated by words per minute (wpm). Generalized linear mixed effect models (GLMM) was performed to answer the supplementary research question. One advantage of GLMM is it takes into account individual differences, so the random-effect variable was the participants, and the fixed-effect variables involved students' language proficiency (four levels) and three time points (three levels: pre, during, and post). The three time points were to examine whether students' oral reading rates changed over time, from the pre-test rate to the practice rate, and from the practice rate to the post-test rate, and finally from the pre-test rate to the post-test rate. In addition to quantitative data, the researcher gathered some qualitative data through observation and interviews with students to gain some understanding of how students perceived the practice, and to explain the quantitative results.

Procedure

Before the intervention began, all participants were given a sight-word test, containing 25 high-frequency words selected from the first 1,000 word level. The participants had to finish reading them within 30 seconds without previewing them. Based on the results of the sight-word assessment, the class was divided into four proficiency levels. Each group was assigned a teaching assistant, whose tasks involved the following: introducing unknown vocabulary, checking students' comprehension, modeling oral reading, leading choral reading, checking students' reading accuracy and speed, and recording the time. Each student had to practice a minimum of five times before reading to their teaching assistant. The researcher went around each classroom supervising the teaching assistants and overseeing the students' practice. The procedure is summarized below:

Week 1	A sight word test was given, followed by an oral reading fluency assessment.
Weeks 2 – 13	Treatment period, followed the steps below a. Introducing unknown words and checking text comprehension b. Teaching assistant modeling reading, students choral reading and echo reading c. Students practicing at their own pace, timing their speed, and finishing reading each text at least five times d. Reading to their teaching assistants, and the teaching assistants recording the speed and correcting their errors.
	e. Occasional interviews with the researcher
Week 14	Break
Week 15	Administering a sight-word assessment and oral reading post-test.

RESULTS AND DISCUSSION

The main research question explored the oral reading rates of EFL university students with different LPs, and examined the rate changes across three time periods. As shown in Table 1, at Time 1 the oral reading rates were 28, 59, 97, and 132 wpm for LP1, LP2, LP3, and LP4 respectively. The differences were evenly spread out from one level of LP to the next. The differences were 31, 38, and 35 wpm between LP1 and LP2, LP2 and LP3, and LP3 and LP4 respectively. These figures showed that for LP1 and LP2 the room for improvement was very large, but it was much smaller for LP4 because they could already read up to 132 wpm.

If students had opportunities to practice a text many times, they could reach a more acceptable rate. As shown at Time 2 in Table 1, the practice rates increased substantially across LP, with 115, 109, 151, and 146 words per minute. The rate gains were particularly salient for LP3 and LP1; the gaps between LP1 and LP2 (6 wpm), and LP3 and LP4 (9 wpm) were reduced after the intervention. The difference between LP2 and LP3, though, was 42 wpm, which was larger than the difference on the pre-test. The difference might be due to students' personal characteristics and initial differences. The students in LP3 were outgoing and liked to display their oral reading. The students in LP2 were shier and showed a lower level of confidence. Overall, the average practice rate gains in each individual LP were much higher than those in Lin's study (2016); her students progressed 25 words (from 100 wpm to 125 words) after repeatedly practicing the same story with peers.

Compared to Time 1, every subgroup made significant improvements at Time 3, ranging from 21 wpm for LP1, 30 wpm for LP2, 39 wpm for LP3, and 22 wpm for LP4. That LP1 and LP4 gained similar rates seems to support the study by Kuhn et al (2006) that students who read a smaller number of texts extensively or repeatedly gained comparably in rates. According to the researcher's observation and interviews with students, the students in LP1 had to read more than 10 times before reading to their teaching assistant; however, for LP4, reading five times was sufficient to reach satisfactory rates. This was the reason LP4 could read three texts each week. Although the rate gains were comparable, the oral reading rate of LP1 on the post-test was only 49 wpm, which indicated that LP1 still had considerable room for improvement. At Time 1 and Time 3, students had no opportunities to practice many times; the oral reading rates at Time 3 in effect truly reflect the effect of repeated oral reading. The room for improvement for LP4 seemed to be limited because their rate at Time 1 was already high. LP3 made the largest improvements among the four levels; the gain might indicate that if students' language proficiency was not too low, repeated reading offered them a great opportunity to improve their fluency. It was also certain that students in LP3 were outgoing and showed a strong fondness of reading English aloud.

Comparing students' practice rates with the post-test rates, we found that after repeated practice students' reading rates could improve substantially. The decrease in rates on the post-test was normal because students did not have opportunities to practice many times. The differences between the practice rates and the post-test rates for LP2, 20 wpm, and 15 wpm for LP3 were small, which might suggest that the difficulty of the practiced texts and unpracticed texts were comparable for LP2 and LP3 and their gains in the practice could mostly be transferred to a new text. That the post-test rate was higher than their practice rate for LP4 may imply that the practice texts were suitable for their level and the gain is easily transferred to the new text without any practice. Additionally, the researcher observed that the students in LP4 were

very confident in reading aloud in front of two foreign raters; they showed little anxiety. For LP1, the difference was 66 wpm. As previously mentioned, the students in LP1 normally had to practice more than 10 times before reading smoothly. Without repeated practice, they could not read fluently. They also showed a high level of anxiety when reading to the two raters.

Table 1. Oral Reading Rates by Different Language Levels at Three Occasions

	LP4 (n =11)	LP3 (n = 11)	LP2 (n = 9)	LP1 (n = 10)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Time 1 (pre-test rate)	132 (36)	97 (17)	59 (29)	28 (22)
Time 2 (practice rate)	146 (14)	151 (13)	109 (14)	115 (19)
Time 3 (post-test rate)	154 (17)	136 (19)	89 (33)	49 (27)

The EFL student participants' rate changes between practiced texts and unpracticed texts are shown above. The supplementary research question was to use GLMM to examine whether the rate changes in each LP were significantly different across times. The results show that the two explanatory variables (language proficiency and time) have significant fixed effects on L2 learners' oral reading fluency development. The two fixed factors also had a significant interaction effect (featured in Figure 1). As shown in Table 2, if we take LP1 (the lowest level) as the reference level, from T1 to T2, the rate increase in LP1 was significantly larger than those in LP4, LP3, and LP2, with all *p*s < .001, and *B* = -65.29, -33.80, -36.94 for the change between LP1 versus LP4, LP3, and LP2, respectively. A reverse pattern, however, was shown from T2 to T3, where the rate decrease in LP1 was more statistically significant than LP4, LP3, and LP2; and *B* = 68.26, 44.95, 40.49, respectively for LP1 versus LP4, LP3, and LP2. Finally, for the rate changes between T1 and T3, no significant differences were found among the four level groups, all the rate changes between LP1 and the other three levels were not significant.

When LP2 is used as the reference, from T1 to T2, the rate increase for LP2 was statistically significantly higher than LP4 (*B* = -28.35, *p* < .01); however, the rate change between LP2 and LP3 was not significant (*B* = 3.14, *p* > .05). From T2 to T3, there was a significant difference in rate change between LP2 and LP4 (*B* = 27.78, *p* < .01), but no significant difference was found between LP2 and LP3 (*B* = 4.46, *p* > .05). From T1 to T3, the rate changes among LP2, LP3 and LP4 were not significant, all *p*s were > .05. *B* = -0.58 for LP2 versus LP4, and *B* = 7.61 for LP2 versus LP3.

When LP3 was taken as the reference level, from T1 to T2, the rate change between LP3 and LP4 was significant (B = -31.50, p < .001); LP3's rate gain was significantly higher than LP4's; however, a reverse pattern was found from T2 to T3, where LP4 increased significantly in rate compared to LP3 (*B* = 23.31, p < .001). From T1 and T3, the difference in rate changes between LP3 and LP4 was not statistically significant (*B* = -8.18, p > .05).

Taken together, the above analyses showed that with repeated practice, the oral reading rates for the students in LP1, LP2, and LP3 substantially improved to more acceptable rates. Taking into account the

students' differences in LP, there were no significant differences in oral reading gains among the four groups from the pre-test to the post-test.

Table 2. Pairwise Comparisons for the Interaction Effects Between Each Language Proficiency and Times

Predictor	*B* (95%CI)	SE	*t*	*p*
Intercept	27.50 (13.41 to 41.59)	7.10	3.87***	<.001
LP				
LP4 vs LP1	96.59 (77.34 to 115.84)	9.71	9.95***	<.001
LP3 vs LP1	69.77 (52.72 to 86.82)	8.60	8.11***	<.001
LP2 vs LP1	31.17 (8.06 to 54.28)	11.65	2.67**	.009
TIME				
T3 vs T1	27.12 (13.45 to 40.80)	6.90	3.93***	<.001
T2 vs T1	87.64 (75.02 to 100.27)	6.37	13.76***	<.001
Time * LP1[1]				
T1-T2 (LP4 vs LP1)	-65.29 (-82.77 to -47.82)	8.81	-7.41***	<.001
T1-T2 (LP3 vs LP1)	-33.80 (-47.39 to -20.21)	6.86	-4.93***	<.001
T1-T2 (LP2 vs LP1)	-36.94 (-55.79 to -18.10)	9.50	-3.89***	<.001
T2-T3 (LP4 vs LP1)	68.26 (47.90 to 88.62)	10.27	6.65***	<.001
T2-T3 (LP3 vs LP1)	44.95 (25.58 to 64.31)	9.77	4.60***	<.001
T2-T3 (LP2 vs LP1)	40.49 (16.03 to 64.94)	12.34	3.28**	<.001
T1-T3 (LP4 vs LP1)	2.97 (-12.73 to 18.66)	7.91	0.37	.709
T1-T3 (LP3 vs LP1)	11.15 (-4.18 to 26.48)	7.73	1.44	.152
T1-T3 (LP2 vs LP1)	3.54 (-14.70 to 21.79)	9.20	0.38	.701
Time * LP2[2]				
T1-T2 (LP4 vs LP2)	-28.35 (-46.82 to -9.88)	9.32	-3.04**	.003
T1-T2 (LP3 vs LP2)	3.14 (-11.71 to 18.00)	7.49	0.42	.676

Predictor	*B* (95%CI)	SE	*t*	*p*
T2-T3 (LP4 vs LP2)	27.78 (9.39 to 46.16)	9.27	3.00**	.003
T2-T3 (LP3 vs LP2)	4.46 (-12.82 to 21.74)	8.71	0.51	.610
T1-T3 (LP4 vs LP2)	-0.58 (-14.91 to 13.75)	7.23	-0.08	.937
T1-T3 (LP3 vs LP2)	7.61 (-6.33 to 21.54)	7.03	1.08	.282
Time * LP3[3]				
T1-T2 (LP4 vs LP3)	-31.50 (-44.57 to -18.42)	6.60	-4.78***	<.001
T2-T3 (LP4 vs LP3)	23.31 (12.60 to 34.03)	5.40	4.31***	<.001
T1-T3 (LP4 vs LP3)	-8.18 (-18.55 to 2.18)	5.23	-1.57	.121

Note.1 LP1 as ref.

Note.2 LP2 as ref.

Note.3 LP3 as ref.

TEACHING IMPLICATIONS AND CONCLUSION

Earlier research has shown that repeated oral reading is effective for elementary students to improve reading fluency; the present study further revealed that this method also benefited university students regardless of language proficiency. The results at three different times across LPs may have some useful implications for L2 teachers who want to adopt this teaching method:

1. Although LP1 gained 21 wpm through the intervention, the rate for the post-test was only 49 wpm, which was unsatisfactory as compared with LP4 (154 wpm), and LP3 (136 wpm). Checking their scores for sight word assessment, we found that LP1 scored only 5/25 words (20%) correctly. The results from the post-test and sight-word assessment imply that students who have difficulties decoding words may have to be trained from reading individual words or phrases first rather than a continuous text.
2. LP3 gained 39 wpm after repeatedly practicing 25 texts. The gain was nearly twice as much as LP1. The result of LP3 may imply that if the students' sight word accuracy is around 70% (e.g., LP3), their fluency can be improved more quickly than those whose sight word accuracy is only 20% (e.g., LP1).
3. After practicing 35 texts, LP4 gained only 22 (132→154). The results may imply that there was some ceiling effect in their advancement, and the students of LP4 may not need oral reading (though they still enjoyed the practice). It is also possible that they may need to practice more difficult texts because their sight-word assessment was 88% accuracy.

Before concluding the paper, some limitations of the study should be pointed out. Firstly, the oral reading did not include measuring prosodic features. One of the main reasons was that all students had had hardly any experience in oral reading and they were afraid of reading expressively. To avoid frightening the

students at the outset, the researcher required students only to read accurately and smoothly. Secondly, comprehension of each practice text was not measured because each text had been taught and checked by the teaching assistants, and the students had been told that they had to comprehend the text before reading it aloud. Although these drawbacks have limited our understanding of how the student participants read expressively and how well they comprehended the texts, from the students' report in the interview with the researcher, they were extremely satisfied with the practice and showed a much higher confidence level after the intervention.

Although this study showed that repeated oral reading benefited all students regardless of their LPs, a few questions remain unanswered. For example, students of different LP (measured by sight word assessment) improved their fluency at different rates. Is there then an optimal threshold for L2 learners to practice reading aloud? Is 70% accuracy of sight word assessment the most optimal condition to develop oral reading fluency? For students who have severe decoding problems, like those students in LP1, should they develop sight word accuracy first before reading a continuous text? These unexplored questions will rely on future research to clarify.

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