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Does Reading Aloud Contribute to EFL Reading Fluency Among Learners With Higher/Lower Phonological Awareness?

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ABSTRACT

This practical report describes five-week instructions of English as a foreign language (EFL), in the form of reading-aloud activities held at a Japanese university, with a focus on the relationship between the learners' phonological awareness and their reading speed. The participating Japanese undergraduates (n = 34) were divided into higher and lower phonological awareness groups, based on a phonemic discrimination task. For five successive weeks, they practiced reading English texts aloud for approximately 30 minutes. Their silent and oral reading speeds were recorded in each lesson. The results showed that the higher phonological awareness group read significantly faster than the lower group on the first day; however, after the five-week sessions, the difference between the two groups had been reduced. In addition, both groups' silent and oral reading rates increased as the number of days increased. Although this study utilizes research methods that could be easily applied to everyday classes, the evidence acquired suggests that reading-aloud activities are effective even for university students. Based on the data, this study furthermore discusses some pedagogical issues.

KEY WORDS
EFL learners, reading-aloud activities, phonological awareness, reading speed

1. Introduction

Developing fluency of reading in a second or foreign language (L2) has been an important pedagogical issue. According to a recent survey conducted by the Ministry of Education, Culture, Sports, Science, and Technology (MEXT, 2015), the estimated level of English reading skills of Japanese third-year high school students was around A1 ("beginner") to A2 ("elementary") of the Common European Framework of Reference for Languages (CEFR; Council of Europe, 2001), which was seriously lower than the government's presumption. Although the students showed an ability to solve some vocabulary and grammar questions, they could not comprehend a lengthy passage fluently (MEXT, 2015, p. 20).

To understand the fluent reading process, we should recognize the importance of *lower level processes* such as word recognition, phonological encoding, and semantic and syntactic sentence processing; underdeveloped lower level processes often inhibit fluent reading (Grabe, 2009; Koda, 2005). Among the many components of lower level processes, *phonological encoding* is explained as the process that combines interactions between orthography (i.e., spelling), phonology (i.e., pronunciation), and meaning. For example, when students are trying to learn a new word *quadruple*, they need to activate the sound of that word in their mind in order to associate the word's orthographic and semantic features with its acoustic representation. Similarly, when they encounter the same word in a new context such as *Our sales have quadrupled in the last three years*, they need to reactivate the sound-meaning association of *quadruple* in their mind to recall its meaning. Furthermore, in addition to the newly learned word, any other words in that sentence can be "pronounced in mind" including high-frequency words. However, this process can be either conscious or unconscious depending on whether the reader's word recognition process is well

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automatized. In the fluent reading process, readers effortlessly (and often unconsciously) activate what the words, phrases, and sentences sound like. To develop the learners' reading fluency, it is essential to improve their lower level processes including the phonological encoding ability.

In Japan, reading-aloud activities are sometimes regarded as the best teaching practice that develops students' language fluency including phonological encoding. Some researchers argue that reading-aloud activities reinforce the mental association between orthography and phonology and between phonology and meaning (Kadota, 2012). Based on this assumption, slow readers may be able to read new texts faster through repeated practices of reading English texts aloud. However, since reading-aloud activity itself appears to be just pronouncing the text aloud, one may doubt if this activity really enhances learners' fluency of reading comprehension. Another criticism questions whether this kind of reading instruction is suitable for university students and adult learners; reading aloud in L2, as well as in L1, seems to be more suitable for younger (e.g., junior high school) students. In particular, university students may not benefit from reading aloud if their phonological encoding skills have already been developed. Therefore, this study investigates whether or not the reading-aloud activities in classrooms improves L2 reading fluency among undergraduate students with high and low phonological encoding skills.

2. Literature Review

Previous studies showed moderate correlations between L2 learners' phonological awareness and reading fluency. Nassaji and Geva (1999) suggested that language teachers consider individual differences in L2 reading with respect to the efficiency with which the readers process phonological and orthographic information. In their experiment, 60 Farsi-speaking graduate students learning English took tests focusing on (a) reading comprehension, (b) silent reading speed, (c) single word recognition, (d) phonological processing, (e) orthographic processing, (f) syntactic processing, (g) semantic processing, (h) working memory capacity, and (i) single letter naming. As a result, the participants' efficiency on the phonological processing task significantly correlated with the reading comprehension scores (r = –.42) and silent reading speed (r = –.35). The correlation coefficients were negative because the efficacy scores were calculated using the time of phonological processing, where a shorter time represents better processing. Given that these correlation coefficients were comparable with the correlations between working memory and reading comprehension (r = .35) and between working memory and silent reading speed (r = .34), it was suggested that teachers should not underestimate the importance of phonological encoding efficacy.

In the study by Gottardo and Mueller (2009), 131 Spanish-speaking first-graders learning English took a series of tests including (a) word-level reading (L2), (b) reading comprehension (L2), (c) receptive vocabulary (L2 and L1), (d) syntactic processing (L2 and L1), and (e) phonological awareness (L2 and L1). The L2 phonological awareness was measured with three different tasks: phoneme detection, phoneme deletion, and sound blending. The results of structural equation modeling suggested that L1 and L2 phonological awareness are separate but related constructs. The correlation coefficients between reading comprehension and each of the three L2 phonological awareness measures were significant (r = .31 for phoneme detection, r = .39 for phoneme deletion, and r = .50 for sound blending). Although their experiment focused on elementary school students, the basic assumption was confirmed that the phonological awareness is a significant predictor of fluent reading. In this article, the term *phonological awareness* is used synonymously with phonological encoding skills. It was assumed that learners with higher phonological awareness can read texts more fluently than others because their cognitive processes related to phonological encoding are relatively effortless.

Researchers emphasizing the effects of repeated reading practices on fluency development believe that reading a number of easy texts (i.e., extensive reading) and reading the same texts many times (i.e., repeated reading) develops learners' automatic and effortless word recognition, which leaves more cognitive resources for better comprehension. In Gorsuch and Taguchi's (2008) study, 24 Vietnamese-

speaking undergraduate learners of English read a short segment of a narrative five times in a single session: The first reading included silent reading while the participants were timing themselves with a stopwatch; the second and third were reading the same text while listening to the model reading; the fourth and fifth were the same as the first session. This procedure was repeated for 16 weeks using different parts of the same narrative. As a result, the participants' reading speed increased from the first to the final week. When their scores on a recall test and short-answer test were compared with another group of students (n = 26), the experimental group outperformed the control group. This suggests that repeated reading-aloud activities may also enhance reading fluency development among undergraduates.

With reference to the above researchers' methods, the present study examined how Japanese undergraduates' reading speed fluctuates through five weeks of reading-aloud instructions. However, because this was a quasi-experimental study held during regular language classes, a simplified methodology for observing the participants' phonological awareness and reading speed was adapted. Regarding phonological awareness measures, previous studies used a variety of measurements. First, Nassaji and Geva (1999) presented their participants with 30 pairs of pseudowords (i.e., disguised word forms; e.g., *flemb* and *flem*) and asked them whether or not each pair sounded the same. This method is fully paper-based and does not require pronouncing or listening to L2 sounds. In the Japanese educational environment, this method may not always tap learners' phonological awareness because they might use their declarative knowledge about spelling–sound rules (i.e., phonics) taught in junior high school and high school. Second, the three measurements of L2 phonological awareness used by Gottardo and Mueller (2009) were (a) identification of which pseudoword out of three presented stimuli began with a different phoneme (15 items; e.g., *sesk*, *susk*, and *shem*), (b) deletion of initial phonemes from orally presented pseudowords (e.g., *neep* into *eep*), and (c) pronunciation of pseudowords by blending presented phonemes (30 items; e.g., */n/*, */a/*, */s/*, and */p/* into *nasp*). In contrast to Nassaji and Geva's methods, these three methods require participants to pronounce L2 (or L2-like) sounds. However, these measurements did not seem practical in terms of the required time to apply to a large number of students. Among other methods, the phonemic discrimination task used by Larson-Hall (2008) seemed to be the easiest to utilize. The task consisted of 96 words that were either real words or pseudowords; each word started with */l/*, */r/*, or */w/* (e.g., *ling* [pseudoword], *ring*, and *wing*). In the experiment, participants were asked to listen to the items and discriminate the initial phoneme. The present study adopted this measure to divide students into a higher and lower phonological-awareness group. However, the number of items was reduced to 50, which made the phonological awareness measure less accurate than that of the previous study. Nevertheless, this task was useful to make a rough estimation about the level of phonological encoding skills, as described in Sections 5.1 and 5.2.

3. Purpose

This study explores the effect of reading instructions including reading-aloud activities on reading fluency development among university students. In particular, this study focuses on the relationship between the learners' phonological awareness and reading speed. In Japan, teachers think that students' basic reading skills can be improved through reading-aloud activities including pronunciation practice, repetition of the teacher's model reading and reading aloud along with the audio model, and more advanced types of oral activities such as recitation of texts. The fundamental assumption of this belief is that reading-aloud activities enhance students' phonological awareness, resulting in a more efficient phonological encoding process. If this were the case, reading speed should increase through reading-aloud instructions, and more importantly, the pattern of change in reading speed should be different between more and less phonologically skilled students. However, it is unclear if the effects of reading aloud are different between the higher and lower phonological-awareness groups even among university students. To reveal these issues in a step-by-step manner, three research questions were proposed as follows:

RQ1: Is the initial speed of L2 learners' *silent* reading different between higher and lower phonological-awareness groups?
RQ2: Is the initial speed of L2 learners' *oral* reading different between higher and lower phonological-awareness groups?
RQ3: How does the speed of reading by the higher and lower phonological-awareness groups change through five weeks of reading-aloud instructions?

To address these questions, data of silent and oral reading speed and phonological awareness were collected through regular language classes held once a week. Based on these data, this study further discusses some pedagogical issues.

4. Method

4. 1 Participants

Japanese undergraduates aged 18 or 19 years majoring in education participated in this study. Their English language level was regarded intermediate. Their reading speed data were collected for several weeks. At first, 82 students took the phonological awareness test in the first session. However, data from students who had been absent from any of the sessions and who scored below 50% on the phonological awareness test were excluded from the analysis. After the removal, data from 34 students were analyzed (18 females and 16 males). They were told that the data would be anonymized and that the test scores would not affect their course grades. Finally, the participants received a feedback report including a summary of average reading speed.

4. 2 Materials

To maximize the effect of reading aloud on fluency, it was important to use texts that were not too difficult. This study used the textbook by Ushiro, Nakagawa, and Le Pavoux (2012) because it offers many short passages written in relatively simple English. Six passages were selected: Texts A1 (141 words), A2 (158 words), B (197 words), C (232 words), D (114 words), and E (153 words). Texts A1 and A2 were used on Day 3; Texts B, C, D, and E were used on Days 4, 5, 6, and 7, respectively. The order of text presentation was the same as the order of the printed pages of the textbook.

As the phonological awareness measurement, a phonemic discrimination task was administered. As in Larson-Hall's (2008) study, a list of real words and pseudowords that start with *l*, *r*, or *w* was created. The number of items was reduced from 96 to 50. Each stimulus word was created by replacing the initial letter of frequent words (e.g., *fight*) into one of the target sounds (e.g., *right*, *light*, and *wight* [pseudoword]). The answer sheet presented three options with the original word, as in the following example: "FIGHT: [a] right, [b] light, [c] wight." Written and oral instructions about how to take this test were given in Japanese.

4. 3 Procedures

There were 15 language classes in total: Seven sessions held for seven successive weeks and an additional session held in the 11th week are related to this study. The participants took the test of phonological awareness on Day 1. Furthermore, they were told that they should not preview or learn the textbook by themselves before the class. On Day 2, they were given instructions on how to record their reading time and experienced a trial lesson on the same procedures as done on Days 3 to 7.

From Day 3 on, each lesson included the following activities: (a) learning vocabulary that appeared in the text to be read on that day, (b) reading the text silently at the students' own pace, (c) reading the text aloud at the students' own pace, (d) rereading the text to solve comprehension questions, (e) teacher–student conversations and/or peer conversations about the text content, (f) additional

explanations focusing on vocabulary and grammar in Japanese, and (g) reading-aloud activities. The students' self-report of silent and oral reading speed was analyzed in this study. To record the reading time, the teacher used his stopwatch and showed the current time on the blackboard every 10 seconds. The students looked up at the blackboard at the moment they finished reading and recorded the time on a card by themselves. These procedures were repeated until Day 7.

On Day 3, half of the participants read Text A1 and the remaining read Text A2 so that the text-type effect on reading speed could be reduced. On Day 11, the students who had read Text A1 were presented with Text A2 and vice versa. From Day 8 on, reading time data were not collected anymore except for Day 11 because the students engaged in summary writing tasks instead of reading-aloud activities.

The reading-aloud activities were designed so that students who were confident and unconfident in English could be active during the activities. For example, the passage titled "Titanic" was used on Day 5 (Ushiro et al., 2012, p. 15). To motivate the students, the teacher announced that he would ask some students to read a paragraph aloud for other students at the end of the lesson. Then, the students practiced the pronunciation of each sentence after the teacher's model reading. Relatively long sentences such as *At 11:40 p.m., two members of the crew on the bridge spotted a large iceberg and telephoned the superior officer, exclaiming, "Iceberg, right ahead!"* were divided into clauses to shorten the time lag between the teacher's model reading and the students' repetition. The teacher sometimes asked some students to repeat the practiced sentence individually; he often praised and encouraged each student but typical errors in pronunciation were corrected (e.g., mispronunciation of *crew* as *clue*). The teacher often played background music without any human voice (140 bpm [beats per minute]); otherwise, slow readers might have felt embarrassed pronouncing the text alone after the other students had finished reading.

The reading-aloud activities sometimes included partial recitation using a method called *backward technique*. For example, all students looked up at the teacher and repeated a part of the target sentence after the model reading: *Iceberg, right ahead!* Then, the part to be read got longer: *exclaiming, "Iceberg, right ahead!"* The next part was even longer: *telephoned the superior officer, exclaiming, "Iceberg, right ahead!"* In this way, most students became able to say the whole sentence without looking at the text. This activity is not a pure version of reading aloud. However, through this experience, the students were supposed to focus on the English sounds and to learn how adjoining sounds blend or how words, phrases, and sentences can be stressed. Finally, the students grouped in pairs and practiced reading aloud together. For the "Titanic" passage, the teacher encouraged the students to read the passage as if they were actors or storytellers. Since all students were interested in becoming teachers in the future, language activities that can be used in elementary or junior high school were welcomed. On the post-lesson questionnaire, most students gave positive feedback about the activities they experienced. Typically, the reading-aloud activities took approximately 30 minutes of a 90-minute lesson.

5. Results and Discussion

5. 1 Phonological Awareness

Before reporting the results of the main analyses, this section summarizes scores of the phonological awareness test. The participants' average rate of correct responses for the 50 items was 60.47% (SD = 8.08). Participants who scored 60% or more were regarded as the higher phonological-awareness group (n = 16, M = 66.50, SD = 8.02) and the remaining participants were the lower group (n = 18, M = 55.11, SD = 2.30). Since the test format was a multiple-choice task with three options (i.e., *l*, *r*, and *w*), the higher group's average correct rate was almost twice chance level.

5. 2 Initial Speed of Silent and Oral Reading

To examine if phonological awareness affects the speed of reading L2 text silently (RQ1) and aloud

(RQ2), two separate *t* tests were carried out using the *wpm* data (words per minute; the number of running words divided by the time [minutes] the participants took to read). The results are displayed in Table 1. In this study, the oral reading was faster than the silent reading because oral reading was performed subsequent to silent reading. In other words, it was the silent reading speed that reflected the time required for comprehension of a text being read for the first time. For all statistical analyses, the alpha level was set at $p = .05$.

Table 1

The Speed of Silent and Oral Reading (wpm) on Day 3

		Silent reading		Reading aloud	
Group	*n*	*M*	*SD*	*M*	*SD*
Higher	18	94.46	20.91	120.18	20.60
Lower	16	79.58	15.85	121.61	17.07
Total	34	86.58	19.62	120.94	18.54

Note. Higher and Lower refer to the higher and lower phonological awareness groups, respectively. This table shows the average number of running words divided by the time [minutes] the participants took to read (i.e., words per minute).

As a result, the higher phonological-awareness group's silent reading was significantly faster than the lower group's reading, $t(32) = 2.36$, $p = .025$. Pearson's correlation between reading time and phonological awareness scores was moderate, $r = .38$, $p = .028$. The difference of the reading-aloud speed between the groups was not significant, $t(32) = 0.22$, $p = .827$; $r = -.08$. Interestingly, the relationship between the ability of phonological encoding and reading fluency was observed only for the silent mode of reading. A possible reason might be that reading a text for the first time requires greater deployment of lower level processes from the reader, including phonological encoding. In contrast, reading aloud material that the readers had already processed was easier even among the lower group because the orthography–phonology relationship had already been activated in the readers' minds through the first silent reading.

5. 3 Changes in Reading Speed

This study collected data of the participants' silent and oral reading speed for five weeks to explore how the reading speed among higher and lower phonological-awareness groups varied over time (RQ3). Regarding this issue, statistical hypothesis testing was avoided because text characteristics and types of pre-reading activities were not controlled for Days 4 to 7. For example, some students seemed to be very familiar with "Titanic," which was the topic of the text used on Day 5, but others did not know anything about it. Furthermore, before the timed reading of "Titanic," the teacher asked in English whether the students had heard of that ship name. Such a pre-reading conversation might have affected the participants' reading processes.

The silent reading rates of the higher and lower phonological-awareness groups are displayed in Table 2 and Fig. 1; the results of oral reading are shown in Table 3 and Fig. 2. As shown in the two figures, the general tendency was that both silent and oral reading speed increased gradually from Day 3 to Day 7.

Table 2

The Speed of Silent Reading (wpm) for Days 4 to 7

		Day 4		Day 5		Day 6		Day 7	
Group	*n*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Higher	18	100.39	22.46	108.46	27.54	111.05	32.86	114.02	18.35
Lower	16	97.01	20.47	96.28	18.72	118.66	25.78	112.10	19.99
Total	34	98.60	21.17	102.01	23.74	115.08	29.12	113.01	18.97

Note. Higher and Lower refer to the higher and lower phonological awareness groups, respectively. This table shows the average number of running words divided by the time [minutes] the participants took to read (i.e., words per minute).

Table 3

The Speed of Oral Reading (wpm) for Days 4 to 7

		Day 4		Day 5		Day 6		Day 7	
Group	*n*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Higher	18	119.37	15.74	123.01	17.79	144.33	24.05	142.50	19.37
Lower	16	118.19	13.89	122.64	15.85	140.33	22.64	145.11	13.80
Total	34	118.74	14.57	122.81	16.53	142.21	23.04	143.88	16.44

Note. Higher and Lower refer to the higher and lower phonological awareness groups, respectively. This table shows the average number of running words divided by the time [minutes] the participants took to read (i.e., words per minute).

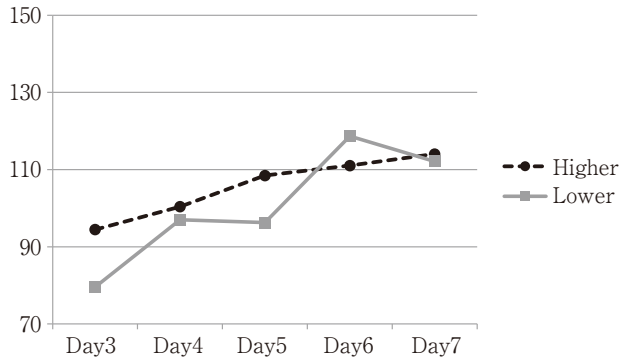

Fig. 1. Silent reading speed (wpm) of the higher and lower phonological awareness groups over time.

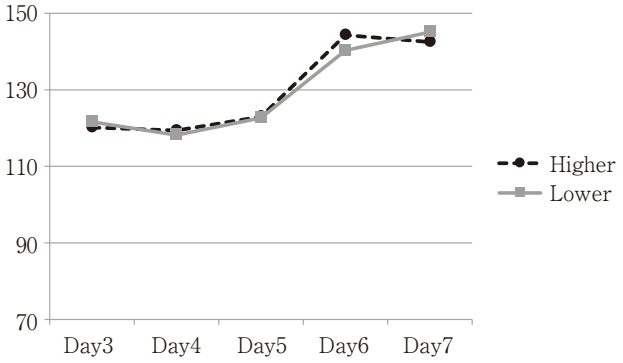

Fig. 2. Oral reading speed (wpm) of the higher and lower phonological awareness groups over time.

Based on Fig. 1, one might argue that the difference between the higher and lower groups' silent reading speed converged as the days passed. The repeated reading-aloud instructions might have positively affected the lower group's phonological awareness. In fact, when the students' silent reading speed was recorded on Day 11 (see Section 4.3), the difference between the higher group (M = 87.75, SD = 22.70) and the lower group (M = 82.72, SD = 20.81) was not significant, $t(32) = 0.67$, $p = .508$. In other words, the initial individual differences in phonological awareness seemed to be reduced after the reading-aloud sessions. However, further research is necessary to decide if this tendency is statistically reliable. One might argue that the increase in reading speed arises from the difference in text characteristics or pre-reading conversation instead of the reading-aloud activities. In addition, by using more sophisticated measurements, it should be further examined whether the lower group's phonological awareness improves after the reading-aloud sessions.

6. Conclusion

This study proposed three RQs. Concerning RQ1 and RQ2, the participants who possessed higher phonological awareness read new texts faster than the other students. The difference was significant only for the silent reading, presumably because the oral reading was actually a rereading of what the participants had previously read. The strength of the relationship between phonological awareness and reading fluency was moderate, which was consistent with the findings of previous studies. For RQ3, this study showed positive evidence that the participants' reading became gradually faster. Interestingly, the change in the lower group's reading speed seemed more erratic than the higher group's.

The main pedagogical implication of this quasi-experimental study is quite simple: Reading-aloud activities may be effective even for university students. This suggestion is supported by the general tendency of increasing reading speed. However, this cannot be considered clear evidence of the effect of reading aloud because of other confounding factors such as text characteristics; the texts used on Days 6 and 7 might have been somehow easier than the texts used on Days 3 and 4, resulting in the different reading time. Nevertheless, because the difference in the silent reading speed between the higher and lower phonological-awareness groups was reduced after all sessions, it seems that the reading instruction including reading aloud contributed to the development of the lower group's lower level processes.

In this study, the participants were willing to experience a variety of teaching techniques including various reading-aloud activities. The author admits that the reading-aloud activities worked well due to the specific educational situation (see Section 4.3). Additionally, the students' initial phonological awareness scores were not very high (see Section 5.1). Results may differ if more phonologically skilled learners took the same language classes. Future research should examine if the recommendations of this study can be applied to other groups of learners.

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