論　文

ER or RR: A Systematic Review of Reading Fluency Research

James R. Hunt

Abstract

A major challenge for English as a Foreign Language (EFL) learners is getting sufficient language input and practice (Yang, 2007). Reading is one means of language input that learners can access regardless of their environment (Al-Homoud and Schmitt, 2009; Day and Bamford, 1998; Krashen, 1995; Waring, 2009), but as Cohen (2011, p. 20) notes, second language (L2) learners who are not yet fluent readers "seldom read when it is not required and tend not to enjoy the process when they do engage in it" (see also Fujigaki, 2009; Tanaka and Stapleton, 2007; Yang, 2007).

One reason for this is that much reading in the foreign language (FL) classroom involves single sentences and contrived expository texts (Bell, 2001; Bernhardt, 1991; Tanaka and Stapleton, 2007), or difficult, lengthy, and literary texts (Bernhardt, 1991, 1995; Kern, 2008). Another reason is that L2 learners lack reading fluency (Gorsuch, Taguchi, 2008; Grabe, 2010; Taguchi, Gorsuch and Sasamoto, 2006; Taguchi, Gorsuch, Takayasu-Maas and Snipp, 2012). This paper summarizes the literature on the theory behind reading fluency development, and then presents an overview of the research into the two most commonly taken approaches in EFL programs: extensive reading (ER) and repeated reading (RR).

1. Introduction

Reading is more than the mere interpretation of orthographic symbols and requires a range of skills such as recognition of visual forms, or visual and

semantic processing. As Smith (1994, p. 171-182) explains, reading is an interactive process between readers, writers, and the text. Glazer, Searfoss and Gentile (1988, p. 1-3) note that reading requires both visual and non-visual information, and that prior knowledge about syntactic, semantic, and orthographic elements stored in the mind enables the reader to predict meaning as they read. Readers construct meaning from a text by utilizing cognitive and metacognitive strategies and schemata (Taguchi, Takayasu-Maass and Gorsuch, 2004, p. 70).

Additionally, different skills are required to read different types of texts e.g. when reading for pleasure as opposed to reading for specific information. Reading sub-skills include skimming (reading for the gist), scanning (looking for specific information), reading intensively (for deep understanding) and reading extensively (for pleasure).

Skillful readers execute word recognition automatically and effortlessly, allowing them to direct cognitive resources to comprehending text (Taguchi et al. 2004, p. 72). This is a widely accepted notion in L1 contexts (Samuels, 1994), as well as L2/FL contexts (Anderson, 1999; Day and Bamford, 1998; Grabe, 1991). Efficient word recognition is combined with background knowledge and higher-order comprehension skills such as prediction and inference to determine comprehension performance (Anderson and Pearson, 1984).

Both bottom-up (textual decoding), and top-down (utilizing interpretation, prior knowledge and expectations) skills are utilized to understand a message (see Carter and Nunan, 2001, p. 219-227). L2/FL readers can have problems with top-down processing if they lack grammar or vocabulary knowledge, and with bottom-up processing if they lack background knowledge of the culture, genre or topic leaving them unable to activate relevant schemata. Due to this complexity the reading process has been described by Goodman (1967) as a kind of “psycholinguistic guessing game”.

L2/FL reading differs from reading in a first language (L1). By the time

they start learning to read, L1 children have well-developed vocabulary, oral proficiency, and grammar knowledge. L2/FL readers have more limited vocabulary and oral proficiency, underdeveloped grammar knowledge, and are slower and less accurate at processing text than L1 readers are (Gorsuch, Taguchi and Umehara, 2015; Oller and Tullius, 1973). This lack of reading fluency is a major obstacle to reading enjoyment and comprehension and many L2 readers find the reading process slow and laborious (Anderson, 1999). As Cohen (2011) notes:

> "Readers who lack fluency often read in a plodding, word-by-word manner and are slower and less accurate than fluent readers. Moreover, because their reading is so laborious, their understanding of the text is often limited. With such inefficient reading patterns, non-fluent readers typically fall behind their peers and do not learn to enjoy the art of reading" (p. 25-26).

Reading is, however, promoted as an efficient means of FL language development, particularly in FL settings where L2 input may be limited (Day and Bamford, 1998; Krashen, 1995; Redfield, 1999). For L2/FL readers, fluency in lower-level processing (recognizing letters, letter clusters, words, and parsing grammatical structures) is key to reading comprehension (Grabe and Stoller, 2011) because if cognitive resources are expended on lower-level processing, little is available for higher-level comprehension skills (Gorsuch et al., 2015, p. 21).

Fluency skills development allows the reader "to see larger sentences and phrases as wholes, a process which assists in reading more quickly" (Hudson, 2007, p. 80). As Samuels (2006) points out, a fluent reader is able to decode and comprehend simultaneously. However, there would appear to be a reciprocal link between fluency and comprehension, as reading rate and accuracy aid comprehension, while comprehension facilitates reading rate (Hudson et al., 2009).

Automaticity Theory states that improved lower-level processing, in particular

word recognition, leads to improved reading comprehension (Samuels, 2006). Kuhn et al. (2010, p. 231) define automaticity as “speed, effortlessness, autonomy, and lack of conscious awareness”, and recommend that readers read repeatedly to build a knowledge base for rapid word recognition to speed up comprehension.

Due to the importance of reading fluency, Macalister (2010) recommends reading fluency development activities be incorporated into classroom practice. ER and RR are two types of reading instruction programs that have been used in English as a second language (ESL) and EFL settings to improve reading fluency and comprehension. Both approaches aim to increase L2 learners’ sight recognition of words and phrases (Grabe, 1991; Paran, 1996; Taguchi and Gorsuch, 2002).

2. Reading Fluency

Fluency training has gained significance in L1 reading programs (Hudson, Pullen, Lane, and Torgesen, 2009) and most literacy educators consider it to be an essential component of reading development (Kuhn, Schwanenflugel, Meisinger, Levy, and Rasinski, 2010). Rasinski (2012, p. 517) insists that fluency should be a “hot topic” because of its close link to comprehension. This is because automatic and accurate word recognition frees up cognitive resources for meaning making (Gorsuch and Taguchi, 2010; Rasinski, 2012; Samuels, 2006). If there are too many unfamiliar words and decoding is not fluent, reading can be exhausting and exasperating (Hudson, et al., 2009).

Kostewicz (2012) states that even though fluency is one of the most important academic skills it is not given adequate focus in the classroom. In L1 contexts, it has been reported that 40% of U.S. high school students are not fluent readers (Begney, Krouse, Ross, and Mitchell, 2009; Ardoin, Eckert, and Cole, 2008). This is problematic because as Paige, Rasinski, and Magpuri-Lavell (2012, p. 74) explain, students who lack fluency in primary grades receive little opportunity to improve in later grades.

Stanovich (2008, p. 23) refers to a "rich-get-richer and poor-get-poorer pattern of reading achievement", where frustration and lack of interest in reading in slow readers means they miss out on limitless opportunities to practice, whereas more fluent peers do not. This pattern is applicable to FL learning, and is illustrated in the vicious and virtuous circles of weak and good FL readers described by Nuttall (1996, p. 127). In the vicious circle, weak readers cannot understand the content and therefore do not enjoy reading and actively avoid it. In the virtuous circle, readers understand better, therefore read faster and with more enjoyment, leading to more reading and increased understanding. Instruction, including fluency development, can help the learner move from the "cycle of frustration and enter instead the cycle of growth".

2.1 ***Definitions of Fluency***

Fluency is defined in different ways in the literature, leading Bellinger and DiPerna (2011, p. 417) to conclude that "there is no universally accepted definition of fluency". Fluency requires the integration of many elements, including phonemic awareness, letter knowledge, sight word automaticity, decoding of text, prosody, and comprehension. According to Nichols, Rupley, and Rasinski (2009, p. 3), "accuracy of recognition, automaticity of word recognition, and reading orally with appropriate prosodic features" are three components essential for fluency.

Kostewicz (2012) defined fluency simply as reading speed and accuracy, and Ari (2011, p. 6) states that "fluency is usually measured as number of words read correctly (orally or silently) per minute". Gorsuch and Taguchi (2010) define fluency as effortless and efficient decoding of text (orally or silently) with comprehension, phrasing, and expression. Cahill and Gregory (2011, p. 128) define it as "reading like you talk…It is also important to understand what you read". Kuhn et al. (2010, p. 240) view fluency as a combination of "accuracy, automaticity and oral prosody, which, taken together facilitate the reader's construction of meaning". Paige et al. (2012, p. 68) state that fluency is automatic word recognition, measured through reading speed, but distinct

from speed-reading. It is important to emphasize that reading purely for speed must be avoided (Rasinski, 2012, p. 517), as fluency requires comprehension. Comprehension can be checked with story retells (Samuels, 2006), comprehension questions, or multiple choice questions (MCQ). Bellinger and DiPerna (2011) discuss cloze tests, multiple choice, short answer, true or false questions, and story retells as possible options.

2.2 *Fluency and Comprehension*

Fluency is an essential element for comprehension (Bellinger and DiPerna, 2011, p. 417). Poor reading fluency leads to poor comprehension (Nichols et al., 2009), and fluency has been described as the "bridge that leads to comprehension" (Rasinski, 2012, p. 517). For this reason, Nation (2007) advises devoting as much time to fluency development as to meaning focused input, language focused learning, and meaning focused output.

According to Carrell and Grabe (2010), L1 readers can scan at 600 words per minute (wpm), and 250-300 wpm when reading for understanding. Nation (2009, p. 72) agrees that a "good careful silent reading speed is around 250 words per minute … [and this is a] … reasonable [goal] for foreign and second language learners who are reading material that contains no unknown vocabulary and grammar". It is important to note, however, that when unknown vocabulary and grammar are present L2 reading speeds are considerably lower (Fraser, 2007).

Reading rate provides a method of measuring automaticity of word recognition. A common method of measuring reading fluency is counting the number of words read correctly in one minute (Hudson et al., 2009). However, this method may not be accurate as it does not reflect a students' ability to sustain this rate over longer periods of time. Additionally, the amount of meaningful information that can be gleaned in one minute is limited. The alternative, favored by Samuels (2006), is to provide a short passage and have students record their time for reading the whole text. Reading rate can be calculated simply by dividing the time taken in seconds by the number of words in the passage, and multiplying the result by

sixty to determine words per minute (wpm).

Nation (2007) argues that fluency development activities must meet the following conditions: (a) all linguistic components are familiar; (b) focus is on receiving or conveying meaning; (c) activities are performed at faster than usual speed; and (d) there is a large amount of input or output. Two principle approaches that meet these criteria for developing reading fluency are ER and RR.

3. The ER Method

ER is an approach to language teaching in which learners are exposed to large amounts of reading materials at or below their current reading ability, in order to build reading speed, confidence and fluency through faster word recognition and processing (Nation, 2009; Waring and Takahashi, 2000).

Day and Bamford (1998, p. 126) describe ER as the reading of self-selected materials from within a learners' linguistic capabilities, from a selection of level-specific texts known as 'graded readers'. ER aims to encourage learners to read for pleasure and to engage in sustained silent reading (Krashen, 1995). The value of ER is that vocabulary and grammar appropriate to the learners' linguistic capability is repeatedly encountered, aiding reinforcement and internalization.

Graded readers (GR) are simplified texts written at various grades of language competence. In order to build reading speed, fluency, motivation, confidence, accuracy, and to improve overall literacy, students should select GR slightly below their current L2 ability. Day and Bamford (2002, pp. 137-140) define 10 principles of ER:

• the reading material should be easy
• there should be a variety of reading material available on a wide range of topics
• learners should be able to choose what they read
• learners should read as much as possible
• reading speed should be comfortable but rapid

• reading should be for pleasure, information, and general understanding
• reading should be individual and silent
• reading should be its own reward
• the teacher should guide the students in their reading choices
• the teacher should be a reading role model.

The key aspect of ER is that learners read easily comprehended texts in large amounts. Renandya, Rajan and Jacobs (1999) demonstrate a clear correlation between proficiency gains and the quantity of extensive reading completed by adult learners in an intensive ESL course in Singapore.

3.1 *ER in L2/FL Settings*

ER has received a great deal of attention in L2/FL contexts, with mostly positive assessments (Table 1). It has been recommended as an effective method of developing overall language knowledge (Nation, 1997) and promoted as a method to significantly improve L2/FL literacy (Constantino, 1994; Elley, 1991; Elley and Mangubhai, 1993; Hafiz and Tudor, 1989; Tudor and Hafiz, 1989; Waring, 2009).

Empirical studies have found ER to increase reading rates (Beglar and Hunt, 2014; Beglar, Hunt and Kite, 2012; Bell, 2001; Blevins, 2005; Carver and Lieber, 1995; Iwahori, 2008; Lai, 1993; Robb & Susser, 1989; ; Samuels, 2006; Sheu, 2003; Taguchi, Takayasu-Maass & Gorsuch, 2004), and improve reading comprehension (Bell, 2001; Elley, 1991; Elley and Mangubhai, 1983; Hayashi, 1999; Hitosugi & Day, 2004; Lai, 1993; Leung, 2002; Mason and Krashen, 1997; Masuhara, Kimura, Fukuda & Takeuchi, 1996; Pilgreen and Krashen, 1994; Robb and Susser, 1989; Sheu, 2003). However, in one study of German FL beginners, Maxim (2002) found that students in a conventional curriculum and those in an ER program performed equally well on tests.

Table 1 Research Promoting the Benefits of ER

Benefits of ER	Example Studies
Acquiring literacy in a second language.	Constantino (1994); Elley (1991); Elley & Mangubhai (1993); Hafiz & Tudor (1989); Tudor & Hafiz (1989); Waring (2009); Yamashita (2008); Yang (2001).
Improved reading rates.	Beglar & Hunt (2014); Beglar, Hunt & Kite (2012); Bell (2001); Blevins (2005); Carver & Lieber (1995); Iwahori (2008); Lai (1993); Robb & Susser (1989); Samuels (2006); Sheu (2003); Taguchi, Takayasu-Maass & Gorsuch (2004).
Improved comprehension scores.	Bell (2001); Elley (1991); Elley and Mangubhai (1983); Hayashi (1999); Hitosugi & Day (2004); Lai (1993); Leung (2002); Mason & Krashen (1997); Masuhara, Kimura, Fukuda & Takeuchi (1996); Pilgreen and Krashen (1994); Robb & Susser (1989); Sheu (2003).
Vocabulary acquisition.	Cho & Krashen (1994); Coady (1997); Day, Omura and Hiramatsu (1991); Grabe and Stoller (1997); Horst (2005); Kweon & Kim (2008); Leung (2002); Pigada & Schmitt (2006); Pitts, White, & Krashen (1989); Waring & Nation (2004).
Improved writing.	Cho and Krashen (1994); Elley and Mangubhai (1983); Hafiz & Tudor (1990); Janopoulos (1986); Lai (1993); Mason & Krashen (1997); Tsang (1996).
Improved attitudes, confidence and motivation towards L2 learning.	Al-Homoud & Schmitt (2009); Cho and Krashen (1994); Hitosugi & Day (2004); Leung (2002), Mason & Krashen (1997); Nishino (2007); Taguchi, Takayasu-Maass & Gorsuch (2004).

ER has also been shown to aid vocabulary acquisition (Cho and Krashen, 1994; Coady, 1997; Day, Omura and Hiramatsu, 1991; Grabe and Stoller, 1997; Horst 2005; Kweon & Kim, 2008; Leung, 2002; Pigada and Schmitt, 2006; Pitts, White and Krashen, 1989; Waring and Nation, 2004), and to enhance writing skills (Cho and Krashen, 1994; Elley and Mangubhai, 1983; Hafiz and Tudor, 1990; Janopoulos, 1986; Lai, 1993; Mason & Krashen, 1997; Tsang, 1996), as well as grammar knowledge (Yang, 2001).

A number of studies have made a connection between ER and improved attitudes toward reading (Al-Homoud and Schmitt, 2009; Cho and Krashen, 1994; Hitosugi & Day, 2004; Leung, 2002; Mason & Krashen, 1997; Nishino, 2007; Taguchi et al., 2004). However, Nishino (2007) noted that as the subjects grew older their motivation to read declined. Also of significance is a study by Takase (2007) of 219 Japanese high school students that found some participants to be enthusiastic about reading in English and others to be enthusiastic about reading in Japanese, but that enthusiasm for reading in one language did not imply enthusiasm for the other. Conversely, Yamashita (2004), reporting on affect and extensive reading in 59 Japanese EFL learners, found that attitudes toward the value of reading were L1/L2 interrelated, and that positive attitudes toward reading in both L1 and L2 correlated with enhanced L2 ER results. Yamashita concludes that attitudes and proficiency in the L2 are not related.

3.2 *ER and L2 Reading Fluency*

Several researchers have investigated ER as a method of increasing reading fluency (Table 2). Robb & Susser (1989) reported significant reading rate gains with an unspecified number of EFL university students in Japan engaged in ER, compared with a control group engaged in intensive reading (IR). Reading rates increased from 79.31 to 86.55 wpm in the ER group and decreased from 78.50 to 76.75 wpm in the IR group. Bell (2001) conducted a similar study with 26 young adult EFL participants in Yemen (14 in the ER treatment group and 12 in the IR control group) that also produced significant results. Fluency increased from 68.10 to 127.53 wpm in the ER group, compared with 78.45 to 92.54 wpm in the control group.

Iwahori (2008) saw average reading speeds increase significantly from 84.14 to 112.82 wpm in 33 EFL high school students in Japan following an ER intervention. Unfortunately, this study did not have a control group. Lai (1993) also reports significant improvements in several ER treatment groups with junior high school students in Hong Kong, but also lacks a control group for comparison.

Table 2 Results of Selected ER Reading Rate Studies

Study	*N*	Pretest Mean (wpm)	Posttest Mean (wpm)	Results	Pretest and posttest materials; measurement	Pretest and posttest readability measurement
Bell (2001): EFL; young adults; Yemen						
Treatment (ER)	14	68.10	127.53	Sig (BG)	Two identical texts; 3 minutes reading time	Fry's readability evaluations
Control (IR)	12	78.45	92.54			
Iwahori (2008): EFL; high school; Japan						
Treatment (ER)	33	84.18	112.82	Sig (WG)	Identical text; 1 minute reading time	Flesch-Kincaid readability formula
Lai (1993): EFL; junior high school; Hong Kong						
Treatment 1 (ER)	86	165	226	Sig (WG)	Two different texts; time for reading an entire text	Not mentioned
Treatment 2 (ER)	88	85	181	Sig (WG)		
Treatment 3 (ER)	33	106	121	Not Sig (WG)		
Robb & Susser (1989): EFL; university; Japan						
Treatment (ER)	?	79.31	86.55	Sig (BG)	Not mentioned	Not mentioned
Control (IR)	?	78.50	76.75			
Sheu (2003): EFL; junior high school; Taiwan						
Treatment (GR)	31	59.7	95.80	Sig (WG)	Two different texts; time for reading an entire text using Nuttall's assessment	Flesch-Kincaid readability formula
Treatment (BNESC)	34	98.6	136	Sig (WG)		
Control	33	85.2	118.60	Sig (WG)		
Taguchi, Takayasu-Maass, & Gorsuch (2004): EFL; university; Japan						
Treatment (ER)	10	80.88	64.48	Not Sig (BG)	Two different texts; time for reading an entire text	Flesch-Kincaid, Fog, and Fry formulas
Control (RR)	10	84.84	82.28			

Note. ER = extensive reading; IR = intensive reading; GR = graded readers; BNESC = books for native English-speaking children; RR = repeated reading; Sig = statistically significant; BG = between groups; WG = within groups (modified from Iwahori 2008).

In a study with junior high school students in Taiwan comparing the effectiveness of graded readers with books for native English-speaking children and a control group with no reading intervention, Sheu (2003) reports significant gains in reading rates for all three groups, suggesting ER with or without graded readers is no more effective than no reading intervention at all.

Taguchi et al. (2004) compared ER with RR, testing ten students in each group (there was no control group). They found no significant difference between the pre- and post-tests of reading fluency.

3.3 *ER in Japan*

Studies on the effects of ER in Japanese educational contexts include Iwahori (2008), Robb & Susser (1989) and Taguchi et al. (2004) discussed above, and several others summarized in Table 3.

Hayashi (1999) and Masuhara, Kimura, Fukuda, and Takeuchi (1996) report gains in reading comprehension, while Mason and Krashen (1997) also discuss gains in writing and attitude as a result of ER. Yamashita (2004) investigated attitudes and affect in relation to ER and L1, concluding that enhanced L2 ER results correlate with positive attitudes toward reading in both L1 and L2. Yamashita (2008) investigated the effect of ER on reading ability and L2 linguistic ability, observing significant improvements in reading ability, but no evidence of micro-level L2 linguistic development which was attributed to the length of the intervention (11 weeks) being too short. Yamashita concludes that reading ability improvements may occur quite rapidly, but for ER to have a significant effect on vocabulary, spelling and morphosyntax, the intervention needs to be continued for a longer period of time.

Table 3 ER Studies in Japan

Study	*N*	Subjects	Results
Reading comprehension			
Hayashi (1999)	100	College	Gains
Masuhara, Kimura, Fukuda, & Takeuchi (1996)	46	College	Gains
Reading comprehension and speed			
Robb & Susser (1989)	?	University	Gains
Taguchi, Takayasu-Maass & Gorsuch (2004)	10	University	No gains
Reading comprehension, writing, and attitude			
Mason & Krashen (1997)	20, 71, 76 (3 studies)	University	Gains
Reading rate and proficiency			
Iwahori (2008)	33	High school	Gains
Yamashita (2008)	31	University	Gains
Affect, ER and L1/L2 relationship			
Yamashita (2004)	59	Post-secondary	Attitudes toward the value of reading are L1/L2 interrelated. Enhanced L2 ER results correlated with positive attitudes toward reading in both L1 and L2. Attitudes and proficiency in L2 not related

Note. ***N*** = number of participants in the ER treatment groups.

4. The RR Method

RR is a form of systematic, deliberate reading practice that is efficient, effective and adaptable to a range of reading levels (Kostewicz, 2012). It was devised as a method to increase reading rates (Samuels, 1979) and consists of learners re-reading a short passage that is within their linguistic capabilities either silently or aloud, several times, until they can read it with ease (Nation, 2009, p. 66). With each reading, less cognitive energy needs to be directed at decoding and can instead be focussed on constructing meaning. Nichols et al. (2009, p. 5) call RR "the most recognized approach for developing fluency".

RR has been studied extensively in L1 settings where it has successfully increased fluency and comprehension in young learners (Stahl and Heubach, 2005) and readers with learning difficulties (Kuhn and Stahl, 2003). Increasingly, L2 reading researchers have recommended RR as a promising method in EFL settings (Anderson, 1994; Grabe, 1991; Taguchi et al., 2004).

As with ER, passages should be below the learners current ability level in regards to vocabulary and grammar forms, so that attention can be focused on reading smoothly and with utmost comprehension. The repetition from re-reading the same passage is believed to develop learners' episodic memory making consequent recognition easier. As such, RR enables the development of flow, fluidity, and comprehension (Cohen, 2011; Koshinen and Blum, 1986; Dowhower, 1989).

RR consists of two critical components: practice effects and transfer of practice effects. Gorsuch et al. (2015) explain:

> Practice effects come from reading the same passage repetitively, which leads to faster and more accurate word recognition. This is then reflected in faster within-treatment reading rates. Transfer of the practice effects are reflected in faster and more accurate reading of new, unpracticed passages (p. 23).

RR can be considered as a scaffold for struggling readers that provides them with short-term, achievable mini-goals. Cohen (2011, p. 21) states that "completing a passage in faster time (speed), increasing words read correctly (accuracy), and reading for a better understanding of the text (comprehension)" are all useful mini-goals. Achieving mini-goals builds confidence and encourages learners to invest more time in developing reading fluency (Nuttall, 1996).

RR can be practiced either unassisted or assisted. Both approaches involve multiple readings of a passage but while unassisted RR requires the learners to re-read the passages silently, assisted RR involves silent readings and orally assisted re-readings, which may involve listening to or shadowing a live or audiotaped

model reading (Liu & Todd, 2014). Nichols et al. (2009) believe that practice is enhanced when reading is modelled by the teacher, as the auditory reading model is a further form of scaffolding. Samuels (2006) suggests breaking a reading passage into short sections, modeling reading a section, having students practice by themselves until they reach a certain reading speed, before repeating the process with the next section.

4.1 *RR in L1 Settings*

Most RR studies of fluency development are with L1 readers in early reading instruction (Taguchi & Gorsuch, 2002), and among learners with reading difficulties (Therrien, 2004). Increased oral reading rates, accuracy, and comprehension carried over to new, unpracticed texts have all been attributed to RR interventions (Dowhower, 1987; Herman, 1985; O'Shea, Sindelar and O' Shea, 1985; Rashotte and Torgesen, 1985; Samuels, 1979). Dowhower (1987) reports participants reading in larger and more syntactically and phonologically appropriate phrases due to RR, and a significant study by Rashotte and Torgesen (1985) reports that increased reading rates and accuracy are transferable to new unread passages, provided there is a high degree of overlap in vocabulary. They caution that in passages with little overlap in vocabulary the transfer of reading rate gains are minimal. O'Shea, Sindelar and O'Shea (1985) had thirty American L1 third grade students reread texts seven times. They report fluency and comprehension increased as the number of repeated readings increased.

4.2 *RR in L2/FL Settings*

RR has received less attention in L2/FL settings than in L1 settings. It has also been less thoroughly evaluated in L2/FL settings than ER has. The empirical studies that have been made have investigated the efficacy of RR in increasing L2 reading comprehension and fluency (Gorsuch and Taguchi, 2008, 2010; Gorsuch et al., 2015; Taguchi, 1997; Taguchi and Gorsuch, 2002; Taguchi et al., 2004; 2012), and incidental vocabulary acquisition (Liu & Todd, 2014; Webb & Chang, 2012; Zahar, Cobb & Spada, 2001).

4.3 *RR and L2 Reading Fluency*

Table 4 summarizes important RR L2 fluency research. Taguchi (1997) conducted a ten week RR program with 15 Japanese university students, in which participants re-read a passage silently seven times, during three of which they listened to an audiotaped model. Reading rates increased significantly within each re-reading, but there was no transfer of increased reading speeds to new passages except in the lowest level readers. This study lacked a control group and there was no adequate comprehension check to ensure students were not skimming.

Table 4 Results of Selected RR Reading Rate Studies

Study	*N*	Pretest Mean (wpm)	Posttest Mean (wpm)	Results	Number of sessions; procedure	Transfer effect
Gorsuch & Taguchi (2010): EFL; young adult; Vietnam						
Treatment (RR)	30	163.20	217.76	Sig (WR)	16 sessions over 11 weeks. Re-read passage 5 times.	Yes (average wpm for first readings increased).
Control (IR)	26	?	?			
Gorsuch, Taguchi & Umehara (2015): beginner Japanese FL; university; USA						
Treatment (RR)	14	*106.68	*261.11	Sig (WR)	23 sessions over 14 weeks. Re-read passage 5 times.	Yes
Taguchi (1997): EFL; university; Japan						
Treatment (RR)	15	126	149	Sig (WR)	28 sessions over 10 weeks. Re-read passage 7 times.	No (except in lowest level readers).
Taguchi, & Gorsuch (2002): EFL; university; Japan						
Treatment (RR)	9	113.25	153.50	Not Sig	28 sessions over 10 weeks. Re-read passage 7 times.	No.
Control (IR)	9	115.70	126.19			
Taguchi, Takayasu-Maass, & Gorsuch (2004): EFL; university; Japan						
Treatment (RR)	10	84.84	82.28	Sig (WR) Not Sig (BG)	42 sessions. Re-read passage 5 times.	Yes (average wpm for first readings increased).
Control (ER)	10	80.88	64.48			

Note. RR = repeated reading; ER = extensive reading; Sig = statistically significant; BG = between groups; WR = within re-reads. * = characters per minute (cpm).

Gorsuch and Taguchi (2010), in a qualitative study of thirty young EFL students in Vietnam, found RR participants to be more motivated to read, and that there was a cumulative effect over the reading of multiple passages. In their study consisting of 16 treatments in an 11-week period, average reading rates increased from 163 wpm to 218 wpm for the first readings of each passage. The control group received reading instruction in the form of grammar translation and intensive reading. In an earlier study, Gorsuch and Taguchi (2008) reported increased fluency and comprehension in Vietnamese EFL learners.

Gorsuch et al. (2015) saw an increase in character and word decoding skills in 14 beginning-level American university students learning Japanese. 23 treatments of 5 repetitions over 14 weeks resulted in increased character recognition, greater comprehension, and increased confidence.

Other studies have been less conclusive. Taguchi & Gorsuch (2002) tested fluency and word recognition in 18 Japanese university-level students. 28 sessions of 7 re-reads (three times while listening to the passage read aloud on audiotape) over 10 weeks resulted in no significant differences between RR groups and a control group engaged in intensive reading (IR). The RR group's first reading rates of the post-test passage were not significantly faster than those of the non-RR group and there was a lack of transfer effects, but they attribute this to the shortness of the treatment period and maintain that RR is effective at increasing reading fluency.

Taguchi et al. (2004) compared ER and RR with twenty EFL university students in Japan (ten in the ER group, and ten in the RR group), that produced insignificant results. Post-test reading rates decreased in both groups, from 80.88 to 64.48 wpm in the ER group, and 84.84 to 82.28 wpm in the RR group. This study used different texts for the pre- and post-tests, so there is the question of equivalency of reading level across the test instruments. They conclude that RR is as effective as ER for enhancing fluency, particularly in weak ESL/EFL readers, and that RR can rival and facilitate ER as a means of fluency building.

Liu & Todd (2014) investigated vocabulary development during RR. 80 Mandarin speaking high-intermediate learners of Japanese as a foreign language recognized 33.7% of the novel target words (orthographic forms) in a vocabulary test administered 24 hours after one hour of RR practice. The mean performance on the vocabulary post-test was significantly higher than on the vocabulary pre-test, but they emphasize that RR is more effective with target vocabulary that shares entymological roots with the learners' L1.

5. Conclusions

Most ER treatments conducted in Japanese contexts have shown positive gains in reading speeds and comprehension. While the status of ER as an effective method of increasing reading fluency is fairly conclusive, existing research has yet to provide unequivocal evidence to establish the efficacy of RR in EFL contexts. Many RR studies were conducted with small sample sizes and therefore the statistical significance of the findings can be questioned. Additionally, studies with the most promising conclusions often lack a control group (e.g. Iwahori, 2008), or compare ER with another reading intervention such as IR (Robb and Susser, 1989). The only study that compares ER with RR (Taguchi et al., 2004) is inconclusive. It reports a drop in reading fluency in the post-tests for both methods, but during the RR intervention average reading speeds increased for the first reading of each text. They concluded that RR is as effective as ER in increasing EFL readers' silent reading rates, but the lack of a post-test increase in reading speed is problematic.

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