

Pleasure reading and reading rate gains

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Abstract

This study investigated the effects of (a) the amount of pleasure reading completed, (b) the type of texts read (i.e., simplified or unsimplified books), and (c) the level of simplified texts read by 14 Japanese university students who made the largest reading rate gains over one academic year. The findings indicated that the participants who made the greatest fluency gains read an average of 208,607 standard words and primarily read simplified texts up to the 1,600-headword level. This study also provides an empirically supported criterion for the minimum amount learners should read annually (i.e., 200,000 standard words), provides direct evidence that simplified texts are more effective than unsimplified texts for reading rate development, and is the first study to provide empirical evidence that reading lower-level simplified texts within learners' linguistic competence is effective for developing the reading rates of Japanese learners at a lower-intermediate reading proficiency level.

Keywords: pleasure reading, extensive reading, graded readers, reading rate, reading fluency

Second language (L2) reading authorities widely acknowledge that reading fluency is an important aspect of skilled reading, but as Grabe (2009) has noted, “relatively little research on fluency or fluency training has been conducted with L2 populations” (p. 294). Even though several characteristics believed to lead to greater reading fluency (e.g., extensive engagement with meaningful and communicative texts) are present in extensive reading and pleasure reading,¹ little empirical research on fluency development has been conducted with both types of reading. One exception was a recent paper by Beglar, Hunt, and Kite (2012), who found that large amounts of pleasure reading, particularly of highly comprehensible simplified graded readers, resulted in significant reading rate gains. However, a number of important issues were not examined in that study. Consequently, the primary purposes of this paper are to further investigate the development of reading rate with highly successful foreign language learners and to distinguish between the effects of the amount, types, and levels of texts on reading rate gains

across one academic year. In this article we operationalize reading fluency as increases in reading rate accompanied by high levels of comprehension. Increased processing rate is a central characteristic of fluency development and an important aspect of theories of fluency and automatization² in cognitive psychology (e.g., Anderson & Lebiere, 1998; Logan, 1997) and in second language acquisition (e.g., DeKeyser, 2007; Segalowitz, 2010). Thus, we agree with Breznitz (2006) that “fluency in reading is expressed by performance time” (p. xiii).³

Literature Review

Extensive Reading and Reading Rate Gains

Much of the published research on extensive reading and reading rate gains is plagued by numerous problems that make the results difficult to interpret: (a) no standard metric, such as standard words⁴ (Carver, 1982, 1990), is used across studies to measure the total amounts of reading; (b) no information about piloting the instruments is reported, (c) the administration of reading rate tests is not described clearly; (d) comprehension measures are rarely reported, even though reading rate increases must be accompanied by high levels of comprehension to be considered as fluency development (e.g., Pikulski & Chard, 2005); (e) little information is presented about the readability of the reading rate passages themselves or about the students’ reading proficiency levels; and, (f) control groups are often absent (See Beglar, Hunt, and Kite [2012] for a detailed discussion of these issues).

Bearing these potential limitations in mind, Table 1 provides a summary of empirical studies in which the effect of extensive reading on reading rate was investigated. Participants in short-term studies of less than one academic year (i.e., Imamura, 2012; Iwahori, 2008; Lai, 1993; Lao & Krashen, 2000) read between 12,000 to 330,000 standard words (6-28 books; Iwahori [2008] did not report how many books her participants read) and showed reading rate gains ranging from 10.16 wpm to 96 wpm. Participants in studies of one academic year or longer (i.e., Beglar, Hunt, & Kite, 2012; Bell, 2001; Nishino, 2007; Robb & Susser, 1989; Sheu, 2003) read 136,000 to approximately 400,000 standard words (9-42 books; Bell [2001] and Robb and Susser [1989] did not report the number of words or books their participants read) and achieved reading rate gains ranging from 7.24 wpm to 65 wpm. The larger reading rate gains, particularly in the short-term studies, might be overstated due to participants’ lack of familiarity with the pretests, resulting in artificially low initial reading rate estimates.

Two important conclusions can be drawn from Table 1. The first is that extensive reading has a consistently beneficial effect on reading rate development and that this effect can occur in less than one academic year. We would note that studies conducted for one year or longer show more moderate reading rate gains and, because of their longitudinal nature, they might provide a more accurate indication of the rate of reading improvement resulting from extensive reading. The second general conclusion is that extensive reading is effective for students at low reading proficiency levels, as most of the participants were initially reading below 100 wpm, a rate that is far below the 200 wpm reading goal suggested by some second language reading authorities (e.g., Anderson, 2008, p. 67).

Table 1. *Past studies of extensive reading reporting reading rate gains*

Researcher	Participants	Amount read	Length of the treatment	Mean pre-reading and post-reading rates (reading rate gain in words per minute)
Robb & Susser (1989)	Unspecified number of first-year Japanese university students	M = 641 pages of books designed for American teenagers	One academic year	79.31 / 86.55 (7.24)
Lai (1993)	207 grade 7-9 Hong Kong secondary school students (who completed the speed reading tests)	M = 16.0, 18.5, and 14.2 books read by the 7th, 8th, and 9th grade students, respectively	Four-week summer reading program	7th grade 165 / 226 (61) 8th grade 85 / 181 (96) 9th grade 106 / 121 (15)
Lao & Krashen (2000)	91 first-year university students in Hong Kong who graduated from a high school in which English was the medium of instruction.	Six books; approximately 388,000 words (329,800 standard words)	One 14-week semester	235 / 327 (92)
Bell (2001)	14 elementary level learners in Yemen	Unspecified; The reading program was 36 hours.	Two academic semesters	68.10 / 127.53 (59.43)
Sheu (2003)	31 second-year junior high school students in Taiwan read graded readers (GR Group) 34 students read books written for native English speaking children (BNESC Group)	GR Group: Nine graded readers BNESC Group: Nine books written for English speaking children	Two academic semesters	GR Group 59.7 / 95.8 (36.1) BNESC Group 98.6 / 136.0 (37.4)
Nishino (2007)	Fumi and Mako, two Japanese junior high school students	Fumi 36 books (402,000 standard words) Mako 42 books (333,000 standard words)	2.5 years	Fumi 72 / 137 (65) Mako 58 / 111 (53)
Iwahori (2008)	33 Japanese high school students	28 graded readers	Seven weeks	84.18 / 112.82 (28.64)
Imamura (2012)	38 Japanese high school students	Group that read more (n = 19): M = 45,447 words (38,630 standard words) Group that read less (n = 19): M = 14,279 words (12,137 standard words)	Seven months	Group that read more 77.60 / 100.55 (22.95) Group that read less 86.74 / 96.90 (10.16)
Beglar, Hunt, & Kite (2012)	First-year Japanese university students: Pleasure reading (PR) Group 1 (n = 23), PR Group 2 (n = 22); PR Group 3 (n = 35)	PR Group 1: M = 136,029.07 standard words (M = 9.13 books; 439.43 pages) PR Group 2: M = 158,993.56 standard words (M = 14.82 books; 840.36 pages) PR Group 3: M = 200,170.00 standard words (M = 24.34 books; 1,095.23 pages)	One academic year	PR Group 1 89.71 / 97.73 (8.02) PR Group 2 94.50 / 107.34 (12.84) PR Group 3 103.09 / 119.93 (16.84)

Reading Targets and Actual Amounts of Extensive Reading Completed

Second language reading authorities have repeatedly stated that reading fluency development is built on a foundation of large amounts of reading. For instance, Grabe and Stoller (2011) stated that “Most L2 readers are simply not exposed to enough L2 print (through reading) to build fluent L2 processing” (p. 50). Day and Bamford (1998) suggested that reading one book per week is a reasonable goal, provided that the books are short and easily comprehensible. Nation (2009a, p. 50) proposed a target of 500,000 running words (~425,000 standard words) per year and suggested that this rate be continued for several years (I. S. P. Nation [personal communication, February 19, 2014] stated that this goal is not meant to be restricted to English as a Foreign Language [EFL] contexts). Finally, for the purpose of vocabulary learning, Nation

and Wang (1999) concluded that, to obtain sufficient lexical repetition, L2 learners should read one book per week at Levels 2 and 3, 1.5 books per week at level 4, and two books per week at levels 5 and 6 as they progress through incrementally higher levels of extensive readers. Based on research into fluency development conducted by cognitive psychologists (Anderson, 1987; Logan, 1997), we believe that learners must read greater amounts to acquire and automatize less frequent vocabulary.

Nation and Wang's (1999) reading goals should provide for lexical and fluency development over the long term; however, longitudinal empirical studies are needed to detail how much learners read in various educational contexts and the rate at which their reading fluency develops. Of the eight studies listed in Table 1, the three short-term studies in which students read the greatest amount are Lao and Krashen (2000; 388,000 words in one semester; 329,800 standard words), Iwahori (2008; 28 graded readers in seven weeks), and Lai (1993; 14.2-18.5 books in four weeks). If such rates had been sustained over one academic year, these three groups of students would probably have read considerably more than Nation's 500,000-word annual goal. However, these studies beg the question of whether EFL readers in non-intensive language programs can sustain such amounts of reading over longer periods. This is an important issue, given that "The ability to read extended texts for long periods of time is a hallmark of fluent reading," and that this ability "develops incrementally *over a long period of time*" (Grabe, 2009, p. 311, italics added).

Longitudinal research on extensive reading presents a different picture than the three short-term studies described above. It shows that, although students can read in a sustained fashion for one or more years, the total amount read is less than what might be expected from the results of these short-term studies. Robb and Susser (1989), Beglar, Hunt, and Kite (2012), and Burrows (2012) each conducted studies of extensive reading over one academic year. As shown in Table 1, Robb and Susser's participants read an average of 641 pages, while the group that read the most in Beglar, Hunt, and Kite's (2012) study read approximately 200,000 standard words, an amount of extensive reading also reported by Burrows. These amounts are well below those suggested in the literature, and less than that reported by some of the shorter-term studies. The only study in Table 1 that exceeded one year was Nishino's (2007), in which two participants read approximately 402,000 and 333,000 standard words in 2.5 years. In addition, though they did not measure reading rate gains, Nishizawa, Yoshioka, and Fukuda (2010) conducted a 4-year study to examine the long-term effects of extensive reading on improving TOEIC scores. They found that 75% of the 37 Japanese technical college students with low starting reading proficiency read more than 300,000 words (~255,000 standard words) over three years, and 50% had read more than 690,000 words (~586,500 standard words) after four years. Despite these impressive results, these amounts are still well below the yearly targets suggested by many reading authorities.

The Appropriate Level of Reading Materials for Reading Rate Development

A widespread assumption in the second language reading literature—but one that has yet to be empirically demonstrated—is that texts designed to enhance reading fluency should be dominated by known lexis and morpho-syntax and be easily comprehensible. For instance, Day and Bamford (1998) stated that reading materials should be "*well within the linguistic competence of the students*" (p. 8, italics in the original). Additionally, when using speed reading

to develop reading rate, Nation (2009a) emphasized that “there should be little or no unknown vocabulary or grammatical features” (p. 2).

Comprehensibility is frequently defined from a lexical perspective; numerous researchers and educators have stated that learners need to know between 95 to 100% of the lexis in a text for successful extensive reading (Hu & Nation, 2000; Nation, 2009a). Furthermore, knowing at least 98% of the vocabulary in a text is necessary for unassisted comprehension (Hu & Nation, 2000) and for providing learners a reasonable chance of inferring the meaning of unknown vocabulary (Hirsh & Nation, 1992). For low- and intermediate-proficiency L2 readers, the lexical and morpho-syntactic characteristics of simplified texts, in which large amounts of known lexis and morpho-syntax are embedded repeatedly in meaningful, potentially engaging contexts, should provide a more supportive environment for reading rate development than unsimplified texts.

Gaps in the Literature and Purposes of the Study

Given the widely varying empirical results shown in Table 1, the amount that must be read to achieve adequate reading rate gains has not been sufficiently researched. One reason for this is the imprecise way in which amount of reading is commonly measured in the extensive reading literature. Six of the nine studies shown in Table 1 do not report the amount read or report it in terms of pages and books read rather than running words or standard words. This is problematic because the amount of text on a single page or in a book varies greatly. Thus, the first purpose of this study is to determine the total number of standard words read by groups of learners who made greater or lesser reading rate gains through pleasure reading over one academic year. These data will allow us to arrive at a tentative criterion regarding the minimum annual amount of extensive reading that lower-intermediate EFL learners need to read to achieve substantial reading rate gains.

A second gap in the literature concerns the lack of empirical studies distinguishing the relative contributions of the amount read and type of texts read (i.e., simplified versus unsimplified texts) on reading rate gains. Thus, our second purpose is to determine whether the amount and type of pleasure reading make independent contributions to reading rate gains.

A third gap in the literature concerns the lack of empirical support for the widespread belief that easy simplified texts are more beneficial than more difficult simplified texts for reading fluency development. While many second language reading authorities assume that easy texts are most effective for fluency development, they cite neither theory nor empirical evidence to support this position. Thus, the third purpose of this study is to investigate how various levels of simplified texts affect reading rate gains and to provide empirical evidence in support of the use of simplified texts that are easy relative to the learners' receptive vocabulary knowledge.

Research Hypotheses

The following hypotheses were investigated in this study.

Hypothesis 1: Greater amounts of reading are associated with greater L2 reading rate gains. This hypothesis is based on research indicating that the amount of processing is one key to fluency development (e.g., See Logan, 1997, p. 139 for a summary). To date, only two researchers, Iwahori (2008) and Beglar, Hunt, and Kite (2012) have provided empirical data that shed direct light on this hypothesis.

Hypothesis 2: Participants who display greater reading rate gains read more simplified texts and few or no unsimplified texts. This hypothesis is based on the idea that fluency is largely developed by recycling language at multiple levels (e.g., orthography, lexis, morpho-syntax, semantics, and genre) and that a greater amount of lexical recycling takes place in simplified texts written within the first 2,000 high frequency words of English (Cobb, 2007; Nation & Wang, 1999).

Hypothesis 3: Participants who make greater reading rate gains read a greater number of lower level simplified books. Reading lower level books can provide two advantages. First, they can be read more quickly, allowing participants to read a greater number of standard words over the academic year. Second, these books provide greater repetition of high frequency lexis and syntax; hence, learners encounter more opportunities for developing sight vocabulary and processing larger linguistic units, such as collocations and lexical phrases, more rapidly and with less cognitive effort.

Methods

Participants

The participants were 76 first-year Japanese students aged 19–20 (57 female and 19 male students) attending a large, prestigious, private university in western Japan.⁵ All the participants had studied English formally for six years in Japanese secondary schools, and they were enrolled in one 90-minute listening and speaking course and one 90-minute reading course per week at the time this study was conducted. The 90-minute elective reading courses met once a week 28 times over two semesters (i.e., one academic year). None of the participants reported having any experience with either extensive or pleasure reading before attending this university. The participants' mean starting reading rate was approximately 97 wpm.

The participants were in three intact classes. One class engaged in a combination of intensive and pleasure reading. These students translated two pages per week of the intensive reading text, *The History of European Fairy Tales* (Brown, 1992), as homework and then presented their translations in class. The instructor primarily explained the content of the stories and sometimes commented on grammar and vocabulary. In addition to the intensive reading text, the participants in this class also read self-selected books outside of class. The participants in the other two classes engaged only in pleasure reading both inside and outside of class and were instructed to read at least one book every two weeks.

The participants initially selected graded readers that were generally well below the 2,000 headword level (see the Appendix in Beglar, Hunt, and Kite [2012] for a list of these simplified

readers, their levels, and the number of standard words per page). Although the participants were advised to read graded readers at around the 600-headword level, they were free to read books at higher or lower levels. As a result, although some participants chose higher-level graded readers early in the first semester, most chose some higher-level graded readers or unsimplified books late in the second semester. By the end of the academic year, 47 (62%) of the 76 participants had read 57 unsimplified texts, including *Harry Potter and the Philosopher's Stone* (Rowling, 1997) and *Bridget Jones's Diary* (Fielding, 1996). They also read four instructor-selected graded readers in the first semester and two in the second semester and completed a variety of comprehension tasks. The participants' out-of-class pleasure reading was regularly monitored by having them submit written reports for each book they read. None of the participants engaged in any reading activities designed to increase reading rate (e.g., timed or paced readings).

Instrumentation

Vocabulary Levels Test. A 24-item version of the Vocabulary Levels Test (Nation, 1990) covering the second and third 1,000 word frequency levels was administered at the start of the first semester in April to confirm that the participants had sufficient knowledge of the high-frequency English vocabulary needed to read the graded readers and the reading rate test passages with minimal difficulty. A longer version of the test was analyzed statistically and the best-performing 24 items were selected for use in this study. The test was analyzed using WINSTEPS 3.60.1 (Linacre, 2006) and was found to have a Rasch item reliability estimate of .94.

Reading Rate Test. The participants completed a reading rate test as a pretest in May and again as a posttest in December. This test provided estimates of the participants' reading rates and passage comprehension. The test consisted of four approximately 400-word passages selected from *Reading Power* (Mikulecky & Jeffries, 1998). Each passage was recalculated using standard word units (Carver, 1982, 1990) to increase measurement precision; as a result, the total length of the four passages was determined to be 1,400 standard words. Students completed a practice reading rate test prior to taking both the pretests and posttests to familiarize them with the test format in order to obtain accurate measurements of their reading rates.

The reading rate test consisted of a double-sided page with the reading passage on the front and eight objectively scored multiple-choice comprehension questions on the back of each passage (four passages x eight comprehension questions per passage = 32 total questions); thus, the instructors would have easily noticed any participant attempting to look back at the reading passage while answering the comprehension questions.

The multiple-choice comprehension questions had four answer options (a-d). The first question was about the topic using the stem "This passage is about" and the remaining questions asked about specific details in the passage. Example stems are "Susan and Sam liked," "At the pub, there were some," and "Susan and Sam thought the food was..." A Range (Nation & Heatley, 2002) analysis using the BNC word lists showed that 96.93% of the words used in the questions were within the 2,000-word level. Eight native speakers of Japanese who were highly proficient in English (TOEFL paper-based test score > 575) answered the comprehension questions without viewing the reading rate passages to determine how many questions they could answer correctly.

A criterion of four or more persons answering the same question correctly was considered evidence that the question could be answered without reading the accompanying passage. Six of the 32 questions (18.75%) could be answered correctly without reading the passage. This figure indicated that the participants had to read and comprehend the reading passages to surpass the 75% criterion for comprehension set in this study. The Rasch item reliability estimate for the 32 multiple-choice questions was .86.

The reading rate passages were selected for three reasons. First, their difficulty level was considered to be well within the participants' reading level. The Flesch Reading Ease estimate was 85.5, the Flesch-Kincaid grade level was 3.3, and the first 2,000 words of the BNC plus proper nouns provided 97.29% coverage of the reading rate test passages. Thus, the passages were similar to a Level 4 Oxford Bookworms graded reader in terms of Flesch-Kincaid grade level and lexical composition. Second, narrative passages were selected because the graded readers the participants read were primarily narratives. Third, the lexical composition and Flesch reading difficulty estimate of the reading rate passages were similar to those of most of the graded readers the participants read (See Table 1 in Beglar, Hunt, and Kite [2012] for a detailed breakdown).

Procedures

The 24-item Vocabulary Levels Test was administered during the second week of class in April, and an initial practice reading rate passage was administered in the third week to familiarize the participants with the procedure. The 32-item reading rate pretest was then administered over a two-week period; two passages were administered during weeks four and five of the first semester. In December of the same year, following the two-semester treatment, the instructors re-administered the reading rate practice test and posttests using the same procedure as at the start of the academic year. Reading comprehension measures were also obtained from the reading rate pre- and posttests.

Preliminary Analyses

The Vocabulary Levels Test results indicated that the participants knew approximately 89% or more of the items at the 2,000-word level and an average of approximately 75% of the items at the combined 2,000 and 3,000 word levels. Given that 97.29% of the running words in the reading rate test passages consisted of the 2,000 high-frequency words of English plus proper nouns, the participants probably had sufficient lexical knowledge to read them easily; they correctly answered an average of 83.7% ($M = 26.78$, $SD = 2.72$) of the reading rate passage questions at the beginning of the study and 86.7% ($M = 27.75$, $SD = 2.87$) at the end. In addition, the vast majority of graded readers available to them were written using between 500 to 1,900 headwords; thus, the participants likely met few unknown lexical items when reading at those levels.

Addressing hypothesis 1 required classifying students into groups based on their reading rate gains. To create the groups, the participants' raw reading rate gain scores were converted into z -scores, which were transformed to percentile ranks. The percentile ranks were then used to create five groups based on their reading rate gains over the academic year: Groups 1-5 had reading rate

gains above the 78th centile, between the 56th and 77th centile, between the 33rd and 55th centile, between the 20th and 32nd centile, and below the 20th centile, respectively.

In order to determine whether the reading rate gains of these five groups were statistically distinct from one another, a one-way analysis of variance was conducted. The independent variable, group, had five levels (the five percentile groups), and the dependent variable was reading rate gain over the academic year. The assumptions for the analysis were met except that the variances among the groups were unequal (Levene statistic (4,72) = 9.50, $p < .001$); therefore, the Welch and Brown Forsythe tests were utilized. As both tests were statistically significant, only the results of the Welch test are reported. The ANOVA was significant, $F(4,34.36) = 178.61$, $p < .001$, partial eta-squared = .91, so follow-up tests were conducted with Dunnett's T3 test. All pairwise comparisons were significant at $p < .001$; thus, the Group 1 participants, who are the focus of this study, made significantly greater reading rate gains than the other participants.

Results

Hypothesis 1 was addressed by inspecting the descriptive statistics for the five groups, which are displayed in Table 2. The total amount read (standard words total) indicates that more reading generally resulted in greater reading rate gains. The participants in Group 1, who made the greatest gains, also read the most (Mean number of total standard words read = 208,607; $SD = 47,669$), while the participants in Groups 2 and 3 read somewhat less, and the participants in the bottom two groups (Groups 4 and 5), who displayed only slight increases or slight losses in their mean reading rate gains, read the least.

Table 2. *The average amount read and mean gain scores for the five groups*

Group	Standard words simplified	Standard words unsimplified	Ratio of simplified to unsimplified standard words	Standard words total	Simplified books (mean)	Unsimplified books (mean)	Total books (mean)	Total pages (mean)	(Mean posttest reading rate – mean pretest reading rate) Reading rate gain in WPM
1 (n=14)	181,032	27,575	6.57:1	208,607	22.93	.40	23.33	1,116.67	(130.26-97.27) 32.99
2 (n=15)	144,315	32,175	4.49:1	176,490	18.27	.53	18.73	943.73	(115.61-96.90) 18.71
3 (n=16)	131,605	52,880	2.49:1	184,485	17.44	.75	18.19	905.75	(104.56-93.31) 11.24
4 (n=16)	101,923	60,215	1.69:1	162,138	13.75	1.13	14.88	749.00	(94.76-90.26) 4.51
5 (n=15)	115,162	47,387	2.43:1	162,549	14.47	.87	15.33	734.20	(103.99-107.90) -3.91

Note. $N = 76$

There are two exceptions to the trend that reading more resulted in greater reading rate gains. First, despite the statistically significant differences in mean gain scores in favor of Group 2, the participants in Group 3 read approximately 8,000 more standard words (total) on average than the participants in Group 2. Second, although the participants in Groups 4 and 5 read almost

identical amounts, the Group 4 participants made significantly greater reading rate gains. These exceptions to the general trend suggest that the amount of reading, while important, was not the sole determinant of reading rate gains.

An additional indication that the total amount read is not the only factor influencing reading rate gains is that the differences in the total amount read among the groups appear to be too small to adequately account for such large differences in reading rate gains. For instance, Group 1 read 24,122 more standard words on average than Group 3, but the two groups' mean reading rate gains differed substantially, at 32.99 wpm and 11.24 wpm, respectively. A second example is the small difference in total amount read by Groups 2 and 5 (13,941 standard words) and the 22.62 wpm difference in mean reading rate gains made by the two groups. These exceptions suggest that the primary reason for these differences lies elsewhere, possibly in the type of reading (i.e., simplified versus unsimplified), the level of reading (i.e., lower versus higher-level simplified books) the participants engaged in, or both.

Hypothesis 2, which stated that participants displaying greater reading rate gains read more simplified texts and few or no unsimplified texts, was first addressed by inspecting the amount of simplified and unsimplified reading each group engaged in. The amount of simplified and unsimplified texts read by each group and the resulting ratios are shown in columns 2, 3, and 4 respectively in Table 2. Reading rate gains generally paralleled the number of simplified standard words read, with Group 1 reading the most standard words (181,032) from simplified texts and Group 4 the least (101,923). This trend stands in contrast to the amount of unsimplified reading the participants in the five groups engaged in; the participants in Groups 3, 4, and 5 read approximately twice the number of standard words in unsimplified books as the participants in Group 1. The differences in the reading patterns of the five groups are also apparent in the ratio of simplified to unsimplified standard words read, with Group 1 displaying a ratio of 6.57:1 and Groups 2 through 5 displaying ratios between 4.49:1 to 1.69:1. With the exception of Groups 4 and 5, the ratio decreases steadily, indicating yet again that greater reading rate gains were generally associated with reading more simplified and fewer unsimplified texts.

Hypothesis 2 was also investigated by calculating the differences in reading rate gains between 14 pairs of participants matched on total standard words read, but who differed in terms of whether they read only simplified texts or a combination of simplified and unsimplified texts. This analysis clarified the effect of the type of text read on reading rate gains by holding the total amount read steady. The 14 participants who read unsimplified texts were chosen based on the criterion that at least 25% of the total number of standard words read was from unsimplified texts. An average of 53.47% ($SD = 20.81$; range = 28.47–93.19%) of the reading completed by these participants was from unsimplified texts; thus, they differed distinctively in this respect from the participants who chose not to read any unsimplified texts.

The results for the 14 matched pairs are shown in Table 3, which is organized based on the reading rate gains of the participants who read only simplified texts, with the top gainer (ID = 3) at the top of the table and the remaining 13 participants arranged in descending order. The top part of the table lists participants who read no unsimplified texts, as indicated by the zeros in the third column (Standard words unsimplified), while the bottom part of the table shows the matching participant in terms of total amount read.

Table 3. Comparison of pairs of student who read approximately equivalent amounts

Participants who read only simplified texts					
ID	Standard words simplified	Standard words unsimplified	Standard words total	Reading rate gain	
3	251,490	0	251,490	40.51	
7	230,965	0	230,965	32.97	
8	193,093	0	193,093	32.87	
10	187,208	0	187,208	30.70	
13	270,349	0	270,349	23.39	
18	199,880	0	199,880	20.35	
19	177,866	0	177,866	20.14	
22	221,031	0	221,031	19.73	
23	162,174	0	162,174	19.04	
24	209,535	0	209,535	18.18	
25	136,569	0	136,569	18.09	
27	140,961	0	140,961	17.00	
34	202,880	0	202,880	12.51	
42	172,782	0	172,782	9.62	
<i>M</i>	196,913	0	196,913	22.51	
<i>SD</i>	38,580	0	38,579	8.65	
Participants who read both simplified and unsimplified texts					
ID	Standard words simplified	Standard words unsimplified	Standard words total	Reading rate gain	Reading rate gain difference
31	123,514	129,598 (51.20%)	253,112	14.36	+ 26.15
36	164,953	65,647 (28.47%)	230,600	11.91	+ 21.06
66	101,758	96,407 (48.65%)	198,165	0.03	+ 32.84
46	107,627	77,356 (41.82%)	184,982	7.15	+ 23.55
52	165,349	103,194 (38.43%)	268,543	4.89	+ 18.50
40	118,255	71,461 (37.67%)	189,715	11.33	+ 9.02
35	109,614	69,353 (32.37%)	178,966	12.05	+ 8.09
61	67,316	144,205 (68.18%)	211,521	2.10	+ 17.63
54	18,759	144,447 (88.51%)	163,206	4.28	+14.76
5	144,899	69,353 (32.37%)	214,252	36.16	- 17.98
56	53,600	77,356 (59.07%)	130,956	3.98	+ 14.11
49	64,235	77,356 (54.63%)	141,590	6.59	+ 10.41
16	50,688	144,205 (73.99%)	194,893	22.06	- 9.55
58	11,418	156,245 (93.19%)	167,663	3.71	+ 5.91
<i>M</i>	92,999	101,870	194,869	10.04	12.46
<i>SD</i>	49,798	34,316	39,031	9.51	13.47

Note. For the participants who read both simplified and unsimplified texts, the percentage in the Standard words unsimplified column indicates what percentage of the total amount read were from unsimplified texts.

The mean difference for the total amount read by the 14 pairs was 2,044 standard words, with the greatest difference being 10,165 standard words, or a 6% difference, for participants 18 and 40. Although no objective criterion exists for deciding when such a difference would result in differential reading rate gains, we do not believe that a difference of 10,000 standard words or less would exert a measureable effect on changes in reading rate over one academic year for two

reasons. First, if reading rates were so easily increased, the gains found in this and other studies would have been far higher. Second, both first and second language reading authorities agree that the development of reading fluency requires large amounts of reading over significant periods of time (e.g., Grabe, 2010; Nation, 2009a).

The reading rate gain differences between the pairs can be seen in the rightmost column in the bottom half of Table 3. The positive numbers indicate that in twelve of the fourteen pairs, those who read simplified books exclusively made greater reading rate gains than those who did not. The two negative numbers indicate that two participants (participants 5 and 16) who read unsimplified texts outgained their counterparts who read only simplified texts ($M = 13.77$), though we would note that participant 5 did complete a large amount of simplified reading (i.e., 144,899 standard words). The mean difference in reading rate gains for these 12 pairs was 16.84 wpm, and the mean difference for the 14 pairs was 12.46 wpm. A one-way ANOVA was run to investigate whether the reading rate gains between the 14 matched pairs were significantly different. The independent variable was group (the participants who engaged in no unsimplified reading versus those who did) and the dependent variable was reading rate gains across the academic year. The participants who read no unsimplified texts significantly outgained their matched counterparts, $F(df = 1, 26) = 13.16, p = .001, \eta^2 = .68$. Thus, after controlling for the total amount read, simplified texts were significantly more effective for increasing reading rate gains than a mixture of simplified and unsimplified texts.

Hypothesis 3, which stated that participants making greater reading rate gains read a greater number of lower level simplified books, was investigated by placing the books read into five levels based roughly on descriptions provided by commercial publishers: 300–800 headwords (Elementary), 1,000–1,600 headwords (Lower intermediate), 1,700–2,500 headwords (Intermediate), 2,800–3,800 headwords (Upper Intermediate and Advanced), and unsimplified readers, which we estimated to contain approximately 5,000 headwords.⁶ The number of books read by each group in each of the five levels is displayed in Table 4, and the average number of books read in each level by each participant in the group is reported in parentheses. Of the books read by the participants in group 1, 94.9% (336 out of 354 books) were at the 300–800 and 1,000–1,600 headword levels, and they read from 75 to 129 more books at these two levels than the participants in the other groups. Given that the vocabulary test administered at the outset of the study confirmed that the participants had adequate knowledge of the 2,000 high frequency words of English, we can be reasonably certain that they read books composed almost entirely of words whose primary meanings were known to them.

Table 4. *Number of books read at five difficulty levels (Average number of books read per person)*

Group	300–800	1,000–1,600	1,700–2,500	2,800–3,800	5,000
1	188 (12.53)	148 (9.87)	12 (0.80)	0 (0.00)	6 (0.40)
2	138 (9.20)	108 (7.20)	23 (1.53)	0 (0.00)	8 (0.53)
3	150 (9.38)	111 (6.94)	14 (0.88)	2 (0.13)	12 (0.75)
4	129 (8.06)	72 (4.50)	16 (1.00)	3 (0.19)	18 (1.13)
5	125 (8.33)	72 (4.50)	13 (0.87)	5 (0.33)	13 (0.87)

Note. 5,000 = Estimated number of headwords in the unsimplified texts.

In contrast to Group 1, the individual members of the other groups read an average of 3.15 to 4.47 fewer books at the 300–800 headword levels and 2.67 to 5.37 fewer books at the 1,000–

1,600 headword levels. Thus, the most successful participants read an average of 5.82 to 9.84 additional books containing more comprehensible vocabulary and syntax than found in many of the texts read by the participants in the other groups. This pattern reverses at the 1,700–2,500 headword level texts and beyond. The participants in Group 1 read from 10 to 21 fewer books at each of the three most difficult levels than the participants in the other groups. We would also note that the participants in Group 1 chose to read low-level simplified texts at the beginning of the academic year. An analysis of the first four texts read indicated that Groups 1 to 5 read books composed of an average of 652, 700, 755, 1,123, and 778 headwords, respectively. Thus, the participants with the greatest reading gains were the most conservative in terms of the levels of simplified books they read initially and, with few exceptions, they maintained this conservative approach throughout the academic year.

Discussion

The discussion of the results is divided into two sections concerning the major findings of the study: the quantity of reading and the optimal type of texts needed to make significant reading rate gains.

Quantity of Pleasure Reading and Reading Rate Gains

Hypothesis 1 stated that greater amounts of reading would be associated with greater reading rate gains. This hypothesis was generally supported; however, Group 2, which read 4.33% less than Group 3, made greater reading rate gains (18.71 wpm versus 11.24 wpm), and Groups 4 and 5, which read nearly the same total amount, displayed significantly different gains. Group 1, the top gainers, read an average of 208,607 standard words over the academic year—a figure that is roughly equivalent to reading one book per week during two 14-week academic semesters (i.e., between 25–30 books, mostly graded readers). Although this amount of reading is less than Nation's 500,000-word (~425,000 standard words) annual goal, it compares favorably with the amounts reported in Table 1, and these participants completed this amount of reading in twenty-eight 90-minute classes. Learners in programs with longer semesters or a greater emphasis on extensive reading could read more than the participants in this study.

Both first- and second-language reading authorities assume that processing large amounts of written input is necessary for developing high degrees of fluency. Logan (1988, 1990), in his formulation of instance theory, stated that fluency development follows a power function (Newell & Rosenbloom, 1981), in which the repeated processing of the same information results in mathematically predictable decreases in retrieval times. The power function, which has also been identified in the acquisition of foreign language listening and speaking skills (DeKeyser, 1997), suggests that, while there are no major shortcuts to fluency development, certain principles, such as consistent practice and the repetition of embedded linguistic forms in communicative contexts, should be implemented over long periods of time to ensure progress.

Despite this widespread agreement that processing large amounts of written input is necessary for the development of reading fluency, there have been few proposals by second language reading authorities concerning minimum yearly reading targets. This is possibly due to the lack

of empirical data available and the potentially large differences in reading fluency development among individual second language learners caused by such factors as aptitude, first language (L1) reading proficiency, L1 orthography, L2 reading motivation, and learning context. Given the results of this and several previous studies, we tentatively propose a minimum yearly reading target of 200,000 standard words of highly comprehensible texts for EFL students at a similar proficiency level as those in this study. Achieving this minimum target would plausibly result in substantial reading rate gains for such learners.

The justification for this minimum reading goal is twofold. First, the top quintile, who gained an average of 32.99 wpm, read an average of 208,607 standard words over the academic year. Second, a goal of reading 200,000 standard words in one year has been shown to be feasible in a variety of educational contexts. For instance, the Japanese participants in Burrows’ (2012) study read an average of 195,620 standard words over one academic year, the Hong Kong Chinese university participants in Lao and Krashen’s (2000) study read an average of 388,000 words (i.e., approximately 329,800 standard words) over one academic semester, and the Vietnamese government officials in Renandya, Rajan, and Jacob’s (1999) study read an average of 728.68 pages (i.e., approximately 145,000 standard words) over two months.

One way to illustrate what reading 200,000 standard words per year entails is to examine how the goal breaks down on a daily, weekly, and academic semester basis for individuals with different reading rates (see Table 5).

Table 5. Amounts of yearly reading for eight reading rates

Reading rate (wpm)	Number of standard words read in 20 minutes per day	Number of standard words read per five-day week	Number of standard words read in one academic year
60	1,200	6,000	168,000
80	1,600	8,000	224,000
100	2,000	10,000	280,000
120	2,400	12,000	336,000
140	2,800	14,000	392,000
160	3,200	16,000	448,000

Note. One academic year is defined as two fourteen-week semesters (i.e., 28 weeks)

Although Table 5 simplifies a complex situation, it highlights two important aspects of a reading curriculum: the approximate amount of time needed to achieve a specific reading goal and the fact that less fluent readers need to read more than 20 minutes per day to achieve the minimum target of 200,000 standard words per year. In situations where learners, for reasons of proficiency or curricular time constraints, are unable to read daily, it might take several years to attain the goal of reading 200,000 standard words or more per year. For instance, Nishizawa et al. (2010) reported that after three years 75% of the students had read more than 300,000 words (255,000 standard words), which they concluded was the necessary “threshold for the subjects to feel at ease while reading English texts” (p. 632). Feeling at ease with L2 texts likely entails a degree of fluency development, given that a sense of effortlessness is commonly listed as an aspect of automatic processing (see Logan [1997] for a discussion of the property-list approach to defining automaticity).

Extensive reading should be emphasized with students at both lower and intermediate reading proficiency levels because simplified texts provide them with more opportunities to meet high and mid-frequency vocabulary than do unsimplified texts. Cobb's (2007) results indicate that (a) graded readers are well designed for second language readers who have yet to automatize the basic syntactic patterns, the high frequency affixes of English, and the high frequency 2,000 words of English; and (b) intermediate learners need to read considerably greater amounts of more difficult text to automatize less frequent syntactic patterns and lexis. We believe it is best to include a substantial fluency development strand in foreign language reading programs until learners are able to read unsimplified texts with a degree of ease.

Optimal Text Type for Reading Fluency Development

The group analysis indicated that, for EFL learners at this proficiency level, reading simplified texts was more effective for fluency development than reading unsimplified texts because learners who read the highest ratio of simplified to unsimplified standard words also made the greatest reading rate gains (see the fourth column in Table 2). Particularly for Group 1, greater reading rate gains were associated with reading lower rather than higher levels of simplified readers (i.e., 1,600 headwords and below) and reading fewer upper-level simplified texts (2,800 headwords and above) and fewer unsimplified texts (see Table 4). The importance of reading simplified texts is further supported by the analysis of the 14 matched pairs who read a similar number of standard words. In 12 out of the 14 pairs, those who read only simplified texts achieved greater reading rate gains than those who read both simplified and unsimplified texts.

There are several possible reasons why lower-level texts are advantageous for reading fluency development. The first reason concerns the opportunity cost associated with reading higher-level texts. Given the added lexical and syntactic complexity of more difficult texts, individuals' reading rates are likely slower when reading those texts. Thus, they read smaller amounts of text in a given amount of time and have fewer opportunities to repeatedly process linguistic features (e.g., letter combinations, lexis, collocations, and morpho-syntax).

The second reason is that automaticity develops with practice in consistent environments (i.e., those in which repetition occurs more frequently). Consistency is important when we consider that the probability of repetition is lower as the level of processing becomes higher; that is, letter combinations repeat more often than single words, which repeat more often than phrasal units, which repeat more often than complex grammatical constructions. Thus, automatization occurs more slowly at higher levels of processing. This is important if, as noted above, higher level processes partly determine reading fluency (See Logan [1997] for a discussion of this possibility). The large amount of recycling found in lower-level graded readers might be particularly beneficial for lower proficiency learners, such as those in this study, because it might allow them to gain control over linguistic forms and coordinate multiple types of processing more quickly than if they were reading more difficult texts. Evidence for this possibility was provided by Horst (2009), who found that even modest amounts of extensive reading (three graded readers) produced lower lexical response times for high frequency vocabulary, particularly for words with 15 or more occurrences in the texts.

An additional reason for using easier texts is based on Perfetti's (1985) verbal efficiency theory, which states that the multitude of cognitive activities that occur in reading take place within a limited-capacity working memory system. Lower-level texts place relatively few demands on orthographic, lexical, and syntactic processing, leaving more cognitive capacity available for automatizing top-down processes, such as creating an interpretative situation model of the text (Grabe, 2009). This is important if we conceptualize bottom-up and top-down processing as being complementary and reciprocal aspects of fluency development. In this view texts that are more comprehensible facilitate fluent reading (Hudson, Pullen, Lance, & Torgesen, 2009), in part because familiarity with genre organization and the concepts embedded in the text are important aspects of reading fluency.

This paper has attempted to set a benchmark for future research by empirically measuring the amounts, types, and levels of texts read and their effects on reading rate gains. These data are a necessary starting point for tracking the effect of extensive reading on L2 learners reading rate development over multi-year periods. It will also give educators, researchers, and administrators a more precise understanding of the task faced by L2 learners and how best to design curricula to address the on-going failure of many educational institutions to provide learners with opportunities for reading rate and fluency development.

Conclusion

This study has produced three main findings: (a) the most successful participants read 200,000 standard words or more over the academic year; (b) simplified graded readers provided significantly better results than unsimplified texts; and (c) lower-level simplified texts were more effective than higher-level simplified texts. The first finding provides a goal for the annual minimum amount to be read by EFL learners at this proficiency level. The last two findings provide empirical support for the widely held belief that reading easy texts is optimal for reading fluency development.

The results raise a number of issues in need of further investigation.

1. Longitudinal studies spanning three or more years are needed to gain an understanding of reading rate growth curves.
2. The assumption that L2 learners read higher-level books more slowly is in need of empirical verification.
3. Studies in which extensive reading is compared to or combined with other approaches to fluency development, such as speed reading (Macalister, 2008) or repeated reading (Nation, 2009b) need to be conducted to determine the relative effectiveness of extensive reading and these approaches.
4. The specific sources of second language reading fluency are still unknown. Researchers need to investigate how the components and processes of reading develop and interact as learners become increasingly fluent.

We believe that answers to these questions will help illuminate the ways in which second language reading fluency develops.

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Notes

1. The term pleasure reading, instead of extensive reading, is used to describe the type of reading in this study because many of the participants chose to read both simplified and unsimplified texts (e.g., Harry Potter), which were likely too difficult to have been read fluently with full comprehension. In this paper, extensive reading refers to the reading of simplified materials.
2. Grabe (2009) defined automaticity as "...processing operations that are rapid, relatively resource-free, not subject to interference, unconscious, and hard to suppress" (p. 291). We agree with Kuhn and Stahl (2003) that automaticity, along with accuracy and reading rate, is a sub-component of reading fluency. Automaticity is generally applied to sub-lexical and lexical processing, whereas fluency also includes efficient processing beyond the lexical level (e.g., multi-word units, morpho-syntax, and discourse organization).
3. Rauding (Carver, 1977), which occurs when a person comprehends while reading, is another option for operationalizing fluency; however, it was not used in this study because it requires data for both reading and aural processing. Aural processing data were not collected in this study.
4. Carver (1982, 1990) defined one standard word as six character spaces (i.e., letters, punctuation, and spaces). The use of standard words as a unit of measurement is more accurate than counts of words, pages, or books because the number of words on one page and the number of pages in one book can vary significantly. The use of standard words also allows for precise comparisons across studies. The conversion ratio of running words from graded readers to a standard word unit in this study was determined by randomly selecting one 500-token passage from five books at each of the six levels in the Oxford Bookworms series. We then determined the number of standard words in the 30 passages. We concluded that the conversion of running words to standard words in these graded readers could be estimated by reducing the number of running words by 15%.
5. Of the 97 participants in the Beglar, Hunt, and Kite (2012) study 17 participants in the intensive reading (control) group and four additional participants who did little or no independent reading outside of teacher-selected texts were omitted from this study.
6. The 5,000 word figure was arrived at by calculating the lexical composition of the three unsimplified books read most frequently by the participants in this study and by using Table 6 in Nation (2006), which indicated that 4,000 headwords and proper nouns accounted for an average of 94–95% of the words in five unsimplified novels. Knowledge of 5,000 headwords represents

95-98% coverage of the lexis in the unsimplified books used in this study.

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