

# The impact of a 4-year extensive reading program

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This study reports the impact of a long-term extensive reading (ER) program on reluctant EFL learners. The ER program consisted of sustained silent reading (SSR) classes, 45 minutes a week, for 120 weeks over 4 consecutive academic years. Thirty-seven students, ranging in age from 20 to 22 years old, finished the program. A comparison between three groups of students in the ER program showed a strong correlation between their TOEIC scores and the amount of reading. The most critical factor for success was reading at least 300,000 words, which was found to be the enabling threshold for the subjects to feel at ease while reading English texts. To ensure the students were reading this amount, the program needed scheduled reading time and easy English texts, especially in the first year. The readability levels of the English texts for our students were far easier than the ones recommended by the Edinburgh Project on Extensive Reading.

英語に苦手意識を持つ学習者に対する長期多読授業の成果を報告する。授業は毎週1回45分の授業時間内多読で、年間30週を4年間継続させた。全期間受講したのは、20～22歳の学生37名である。受講学生を読書量で三分割して比較したところ、群別読書量とTOEIC得点に明確な関係が認められた。多読授業の正否を分ける要因は、最低30万語以上の累積読書量であり、定期的な読書時間の確保と、特に初年度の図書はやさしさが大切である。本校学生に適した本は、エジンバラ・多読プロジェクトで推薦されるものよりも、かなりやさしいものであった。

## Background

### *Reading amount and readability of reading materials*

Day and Bamford (1998) described ten characteristics of successful extensive reading programs, two of which were “students read as much as possible” and “reading materials are well within the linguistic competence of the students in terms of vocabulary and grammar” (pp. 7-8). However, we felt that both the expected reading amount and the optimum readability of the materials were not stated clearly enough to design an effective ER program for Japanese EFL learners. In the late 1990s, Sakai (2002) proposed 1,000,000 words as a milestone for Japanese EFL learners to feel they can read independently. He also suggested using much easier books than those that were being used in contemporary ER programs. These proposals were supported and promoted by the Starting with Simple Stories (SSS) English Study Group and the Japan Extensive Reading Association (JERA).



These proposals led to numerous extensive reading studies within the Japanese context. Sakai and Kanda (2005) proposed a detailed methodology for conducting ER programs based on the proposals, and Kanda (2009) suggested focusing on the joy of reading, based on a case study of a university student who had taken a 3-year ER program. Takase (2008) confirmed the positive effect of reading very easy-to-read books, and pointed to it as one of the two most critical features of a successful ER program. Furukawa et al. (2010) compiled a list of 13,000 easy-to-read reading texts, and evaluated their readability as an index called the Yomiyasusa Levels (YL), specifically designed for Japanese EFL learners. Nishizawa, Yoshioka, and Itoh (2006) compared the readability levels proposed by the Edinburgh Project on Extensive Reading (EPER) (Hill, 1997, cited in Day & Bamford, 1998, pp. 173-194) with the YLs. They found that the easiest books recommended by Furukawa et al. were not in the EPER list, and the books in the EPER starter, beginner and elementary levels were very difficult for low-level Japanese EFL learners to read without translating the English texts into Japanese. They recommended that Japanese EFL learners should read far easier books than the EPER recommended.

The ER program described in this paper used the YL readability scale as its guide, and the subjects started their ER with books far easier-to-read than those indicated by the EPER scale.

### **English education at Toyota Kosen**

Toyota Kosen (a college of technology), where the ER program described in this paper was conducted, is a small but specialized institution for engineering education. In Japan, kosen typically accept graduates from junior high schools, and educate them in a 5-year foundation-course and a 2-year advanced course. Usually 20% of the 5-year course students go on to the advanced course. First-year (age 16) kosen students are usually excellent in mathematics and science, and are as good in English as aver-

age high school students of the same age (Kameyama, 2010). The kosen students in the fourth or higher grades however, have lower proficiency in English than university students of the same age, even though they are promising engineering students (Kameyama & Ozawa, 2002). For example, the national average TOEIC score of seventh grade kosen students was 373 in 2007, which was 40 points lower than the national average of fourth year university students majoring in engineering, science, and agriculture, in the same year (ETS, 2008, p. 9, 11).

The poor performance of kosen students in English is sometimes explained by them not needing to pass severe entrance examinations at the age of 18. Another reason is that they have fewer English lessons compared to high schools and 4-year universities (Kameyama, 2010). However, graduating students were dissatisfied with their low performance even after some kosen employed native English-speaking teachers, or were equipped with language laboratories, or even had set up computer-assisted language laboratories with cutting edge technology (Nishizawa et al., 2004).

Since 1995, the Department of Electrical and Electronic Engineering at Toyota Kosen has made several attempts to improve the situation for their engineering students. Both vocabulary building exercises and *ondoku-hisha*, a technique aimed at increasing the volume of reading and listening, were unsuccessful. The ER program described in this paper was the Department's third attempt to improve the English ability of the students.

### **Research questions**

#### **The research questions in this study were:**

1. How much reading do typical engineering students need to do to increase their TOEIC scores from 370 to 500, which is the national average of fourth grade university students in all majors? And how much ER should be included in our

- curriculum to achieve this amount of reading?
2. What are the other critical factors apart from the volume of reading?
  3. What are the possible obstacles for implementing and running an ER program?

### The ER program

The ER program started in April 2004 in six classes in the Department of Electrical and Electronic Engineering. The department has one class in each grade, and all the classes from second to seventh grades joined the program at the same time. The students also attended compulsory English lessons during the same years. In the 2007 academic year, 37 students completed their fourth year of the program.

Most of the lessons took place in the college library, which in March 2008 had about 15,000 easy-to-read English books and 2,000 audio CDs. There were three kinds of books: picture books for young English-speaking children; graded readers, which are reading materials for EFL learners; and story books for English-speaking children and young adults.

In the lessons, students selected their reading materials, with guidance from a teacher if needed. The teacher's main role was to help students select appropriate books and they avoided teaching about English so as to ensure as much reading time as possible during the ER lessons. Students were strongly recommended to do out-of-class reading as well. The students read at their own pace, without referring to dictionaries, and recorded their reading histories in logbooks. Some of them listened to the stories on audio CDs while reading because listening-while-reading helped them to avoid translating into Japanese (Sakai & Kanda, 2005). The logbooks were a valuable source of information for the teachers to know which books the students had already read and helped them to learn the student's favorite

genres. The logbooks were collected one or two days before the lessons, and then returned at the beginning of the lesson with advice from the teacher added to them. The logbook, designed by the SSS English Study Group (2005), has 320 slots for reading records, each of which stores the date of reading, serial number of the record, title and series-name of the book, its YL, the length of the text, the cumulative amount of reading, their personal evaluation of the story, and the reader's comments on each book. The data from the YL and accumulated words read, showed if the students had read easier or more difficult books relative to their peers. The evaluation and comments section allowed the students to tell us their favorite genre or type of books. Because the main role of the teachers was to introduce level and age appropriate books and genres, the teachers were expected to read the books themselves, and to know them well.

### Reading histories and examinations

After 3 years of the ER program, 50% of the students had read 450,000 words, and 75% of them had read more than 300,000 words. At this point, according to Nishizawa et al. (2006), students typically were comfortable reading easy English texts, had increased their reading speed, and reported that they mainly used English instead of Japanese to comprehend the stories. After 4 years, 50% of the students had read 690,000 or more words, and the percentage of the students who had read more than 300,000 words had increased to 84%.

From their reading logs, we analyzed the students' average YL by their reading amount, and confirmed that the students gradually increased the YL they were reading at as the amount of reading increased. Representative books they read by year are shown in Table 1.

Table 1. Typical books students read during the program

Time in the program	Reading amount	YL	Typical book series
The beginning of first year		0.3	Oxford Reading Tree Stage 3
The early months of second year	250,000 words	1.4	Cambridge English Readers Level 1
Third year	400,000 words	2.0	Oxford Bookworms Level 1
Fourth or fifth year	800,000 words	2.8	Macmillan Readers Level 3

As we had been expecting an increase in their reading levels over the long term due to the ER program, we set and modified the expected readability level of term-end examinations in light of this. For example, the target was YL 1.2 for the first year students, YL 1.8 for the second years, YL 2.2 for the third years, and YL 2.4 for the fourth year students, in the 2009 academic year. In the examinations, students were required to read an unfamiliar English text in a limited time. The time allowed was calculated assuming a reading speed of 100 words per minute. Students were not allowed to take any notes during the reading time. After the reading time, they had to answer ten questions about the story. They could easily answer 6 of the 10 questions if they read the whole story in the set time and were able to grasp the basic meaning of the story, but they needed to understand critical events and some details of the plot in order to answer the other four questions. In the first year of the program, they were required to read a 3,000-word YL 1.2 text in 30 minutes. From our past experience, we believe this would have been challenging for an average graduate from a Japanese engineering college.

## Increased TOEIC scores

We evaluated the effect of the ER program on their TOEIC scores because TOEIC measures the ability to comprehend spoken English, the ability to read quickly and the ability to concentrate in English and they all depend on an ability to process large amounts of language quickly and accurately (Graham-Marr, 2010).

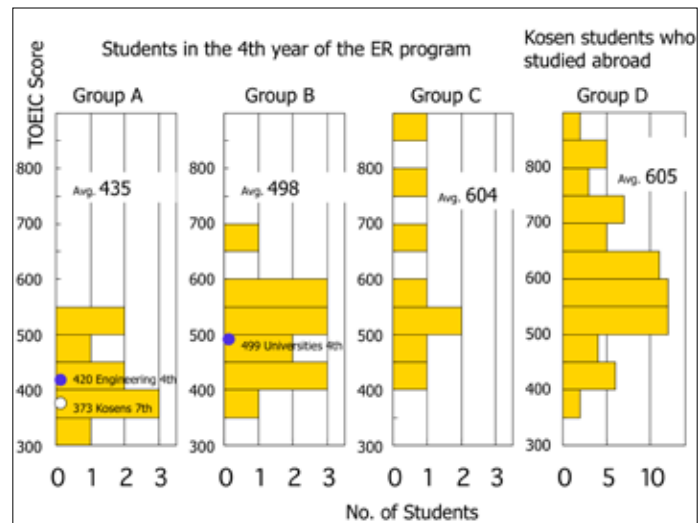


Figure 1. TOEIC score distributions of groups who read different amounts

In Figure 1, we compared the TOEIC score distributions of the four groups of students listed in Table 2. The students in the three groups (A, B, C) belonged to the ER program and were doing their fourth year of the program in 2007. Seven students, who had stayed in English-speaking countries for more than

3 months during the 4-year duration of the reading program, were excluded from the groups. The remaining 30 students were divided into three groups by their cumulative reading amount. Group A consisted of nine students whose median reading amount was 310,000 words, group B consisted of 13 students whose median reading amount was 660,000 words, and group C consisted of eight students whose median reading amount was 1,800,000 words. The 69 students in group D had not participated in the full ER program. They were third grade kosen students in the academic years 2006 to 2008 who had studied in English-speaking countries for 10 months. Some of them had ER lessons, some before and some after their studies abroad, but the duration was less than one and a half years.

**Table 2. The four groups of students shown in Figure 1**

Group	N	ER program	Students' grade and academic year	Reading amount (Median) Min.-Max.
A	9	Yes	5th to 7th grade in 2007	(310,000) 280,000-390,000
B	13			(660,000) 490,000-820,000
C	8			(1,800,000) 1,100,000-12,000,000
D	69	No	3rd grade in 2006-2008	Students who studied in English-speaking countries for 10 months

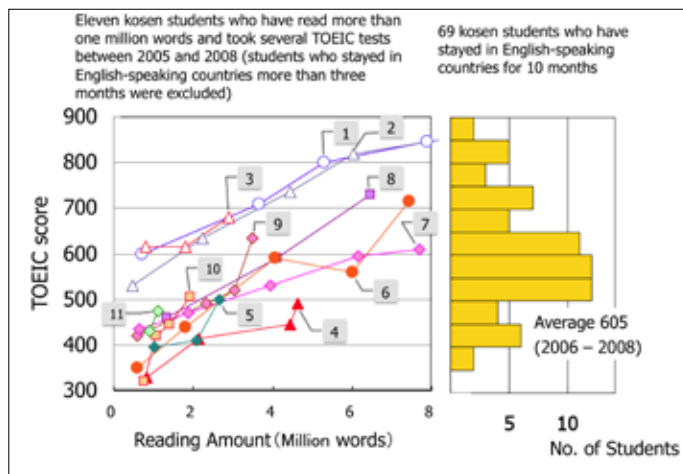
The mean TOEIC score of group A (435), was 15 points higher than the national average of fourth grade university students majoring in engineering, science, and agriculture in 2007 (420) and was 62 points higher than the national average of seventh

grade kosen students (373) (ETS, 2008, p. 9, 11). The mean TOEIC score of group B (498) was as high as the national average of fourth grade university students in all majors in 2007 (499). The TOEIC scores of group C (604) and D (605) were the same, and the score distributions of both groups were quite similar too. Even though the sample size is small, we can roughly estimate the increase in TOEIC scores from the amount read by comparing the average TOEIC scores and the median reading amount of three groups. These data show a gain of about 18 points per 100,000 words between groups A and B:  $(498-435) / (660,000-310,000)$ , and 9 points per 100,000 words between groups B and C:  $(604-498) / (1,800,000-660,000)$ .

The data show the potential of a 4-year ER program. Even Group A, who read only in class, showed significantly higher average TOEIC scores than their fellow kosen students. The mid-range readers (group B), who read about the same amount in and out of classes, achieved TOEIC scores equivalent to the national average of university students from all majors, including English. The top readers (group C), who read large amounts outside class on their own, reached TOEIC scores as high as students who had had their engineering education at kosen for two and half years, and then studied in English-speaking countries for 10 months. This means it is possible for engineering students, who are generally reluctant to learn English, to improve their proficiency in English by participating in a long-term ER program without sacrificing their engineering education.

To examine the effect of reading more than Sakai's (2002) suggested 1,000,000 words, we selected 19 students who read more than 1,000,000 words and who had taken several TOEIC tests in the academic years 2005 to 2008, and examined the relationship between their TOEIC scores and the cumulative reading amount (Figure 2). Students who had stayed in English-speaking countries for more than 3 months were excluded from the analysis. There were eight students whose TOEIC scores increased rap-

idly at around 1,000,000 words, although such rapid increases did not continue in the long term. The other students were divided into three groups, based on their TOEIC scores when they reached 1,000,000 words.



**Figure 2. TOEIC score and reading amount of selected students (see also larger version on final page)**

The most competent three students (1-3) scored 590 on average when they had read 1,000,000 words and increased their TOEIC scores by 4.6 points per 100,000 words. Two of them (1, 2) further increased their scores at the same rate until 800, by when they had read 6,000,000 words. The least competent three students (4-6) scored 375 at 1,000,000 words and had an increase in TOEIC score of about 4.0 points per 100,000 words. From the data, we estimate the least competent students need to read 4,000,000 words to score 500. The other five students (7-11), who were of middling competency, scored 460 at 1,000,000 words and

increased their TOEIC scores by 4.1 points per 100,000 words. They needed to read 2,000,000 words to score 500. Remarkably, the long-term gain rates for TOEIC scores were very close among the three groups, although the students' competency at the start differed widely. This shows the applicability of ER at various proficiency levels, including elementary levels, in EFL settings.

### Critical factors for success

The results show that the most critical factor for success in an ER program is the amount of reading. We could not find significant differences in mean TOEIC scores of classes when the students' reading amount was around, or less than, 100,000 words. A reading amount of 300,000 words was the threshold where many students started to show significant increases in TOEIC scores. To achieve this volume of reading, we need to have at least 2-3 consecutive years of SSR and a guaranteed scheduled reading time. Students will read from 100,000 to 200,000 words in a year if the length and frequency of SSR lessons are the same as our program.

The second factor that led to the success of the reading program was to start with simple stories: SSS. When students read very easy-to-read books, they can avoid concurrent translation from English to Japanese and comprehend directly from English texts. If they avoid translation, they can relax and enjoy the stories without loss of comprehension. If they have to translate, their reading changes into decoding. When they decode English text, students think hard in Japanese but they do not use English (Nishizawa et al., 2006). There is no joy of reading either. Because the joy of reading is the main motivating factor for the students to continue ER for a long period, it is important for them to avoid concurrent translation in the ER program.

Displaying the appropriate readability levels of books is another important factor, and our ER program uses far easier-

to-read books than the ones recommended by programs such as EPER. For example, we found in the first year of our trial ER program that Penguin Readers *Easystarts* (YL 0.8) were not easy enough for some of our fifth grade students. In our ER program, we suggest our students read about 1,000,000 words, or more, before they start to read *Macmillan Readers Level 3* (YL 2.8), which is set at EPER level D (lower intermediate) and is recommended for learners with a TOEIC score of 300. Our experience suggests that Japanese EFL learners with a TOEIC score of 300 are not able to read a book at this level without concurrent translation. The easy-to-read books for these students are the first seven stages of *Oxford Reading Tree* (YL 0.0-0.7), or the first three levels of Cengage's *Foundations Reading Library* (YL 0.6-0.8).

We found that if we could satisfy the above two critical factors: SSR and SSS, motivating reluctant students to read English books was not so difficult because the fun of reading motivated the students. Some teachers may think that easy-to-read books are too childish for college students, but the reading histories of our students contradict that claim. If they can avoid concurrent translation, even male students who play rugby are delighted to read the *Rainbow Magic* series: fairy stories that are popular among first grade school girls in the United Kingdom.

The third factor is the reading experience of the teachers. To aid the success of an ER program, we believe that teachers themselves have to read at least 1,000,000 words of the books that students are reading. Without this reading experience, the teachers could not share the joy of reading with the students, nor have the knowledge to recommend books at the right level and genre for each student, and recognize the improvement of their students. The teachers must have flexible minds to enjoy children's picture books and language learner literature.

## Possible obstacles

Short-term ER programs do not seem to demonstrate the effectiveness of ER to students. Even if students feel the joy of comprehending easy-to-read English texts at an early stage, they tend to lose confidence when they don't make significant gains in their English test score. According to our experience, typical Japanese teenage students need to read at least 300,000 words of comprehensible English texts before they reach the threshold when the average TOEIC score increases significantly. The frequency of reading in our program suggests it will take from 2 to 3 years of regular SSR lessons to do this. An ER program of one year or less may not overcome this threshold and may become an obstacle to both perceived and actual success.

Another possible obstacle is the lack of people who are experienced with extensive reading in foreign languages in Japan. Very few Japanese adults, including English teachers, have had the experience of reading English texts fluently without English-to-Japanese translation, and few native English teachers read non-English texts fluently. As a result, most students have no ER role model around them. It is therefore natural that curriculum designers hesitate to include ER in their curriculums when they have no experience of ER themselves. Promoting ER among adult EFL learners and trainee educators might be a necessary preparation for starting an ER program.

## Conclusion

This study reports the impact of a long-term ER program on reluctant engineering students learning English. The program was 45 minutes a week of sustained silent reading (SSR) in which students started reading simple stories (SSS). The students read a median 690,000 words of easy-to-read books and increased their average TOEIC score to 507 by their fourth year. These data suggest it may be wise to include 4 credits of ER lessons

into the English curriculum of any educational institution so as to improve the students' reading/listening fluency. We conclude that a successful ER program for Japanese EFL learners needs long-term SSR and SSS, built on the rich experiences in ER of their teachers and supporters.

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### Bio data

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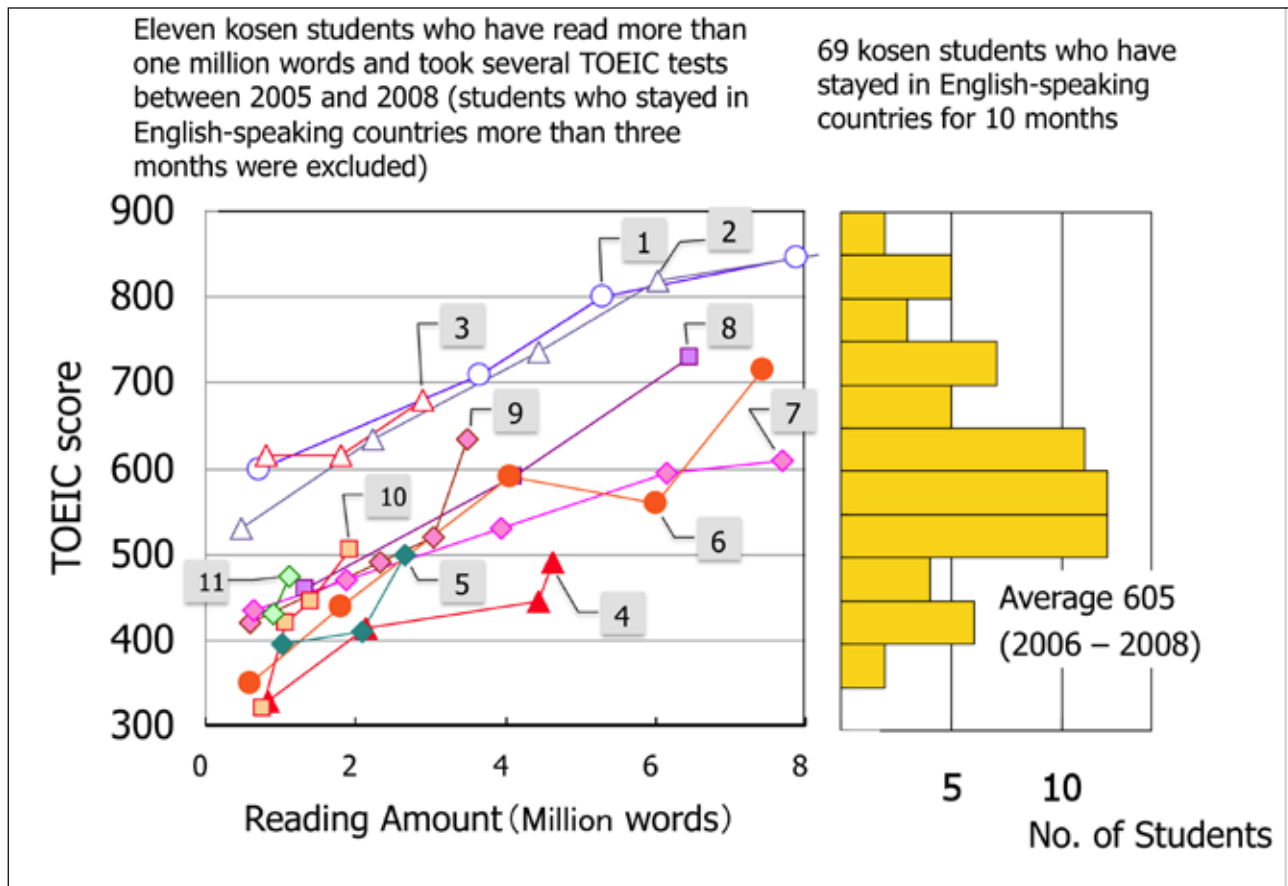


Figure 2. TOEIC score and reading amount of selected students