Connecting extensive reading to TOEIC performance

Paul A. Lyddon[1] and Brandon Kramer[2]

Abstract. Although Extensive Reading (ER) has been shown to increase reading fluency and comprehension, such benefits are generally slow to appear. The present study investigated the possible contribution of ER to single-semester Test of English for International Communication (TOEIC) reading gains. The participants were 497 first-year students from two annual cohorts at a tertiary institution in Japan. All took a preliminary TOEIC before enrolling in the online ER system *Xreading*, which awarded them a word count for successfully completing a short quiz on each book they read for homework. Hierarchical linear regression analyses of end-of-semester ER words read and TOEIC reading scores showed a consistent positive relationship between the two. However, semester increases in the former were not reflected by proportional gains in the latter, a finding possibly explained by greater consistency in ER's implementation across course sections over time. In short, ER words read might in fact be a proxy for general compliance in homework completion rather than a direct cause of TOEIC reading score improvement.

Keywords: extensive reading, reading fluency, reading comprehension, TOEIC.

1. Introduction

Though long-term benefits of ER, such as greater reading speeds and comprehension, are well established, its short-term effectiveness has been far less obvious (see Nakanishi, 2015). Moreover, as the researchers in the present study discovered within the context of an all-female private tertiary institution in Japan, even program-level adoption of ER is no guarantee of individual teachers' and students' valuation of it without clear evidence of its immediate worth. Consequently, this

1. University of Shizuoka, Shizuoka, Japan; palyddon@u-shizuoka-ken.ac.jp; https://orcid.org/0000-0002-1782-9769
2. Osaka Jogakuin University & Junior College, Osaka, Japan; Brandon.L.Kramer+eurocall@gmail.com; https://orcid.org/0000-0003-3910-0810

investigation sought to correlate ER with short-term standardized reading score gains.

One popular standardized measure of English proficiency in Japan is the TOEIC. Its most commonly administered form is the Listening and Reading Test, on which the average reading section scores are comparatively much lower for test takers not only in Japan but worldwide (Educational Testing Service, 2019). Arguably contributing to this discrepancy are the demands this section places on sufficient fluency to read the many required text passages, much less fully comprehend them. Given the relevant attested benefits of ER, the present study sought to link it positively with TOEIC reading performance.

Researchers previously investigating a possible connection between ER and TOEIC have reported mixed results. Whereas studies such as Nishizawa, Yoshioka, and Fukada (2010) and Rutson-Griffiths and Rutson-Griffiths (2018) concluded a positive relationship between them, Carney (2016) and O'Neill (2011), for example, found no support for such conclusions. Complicating matters further, these and similarly motivated studies generally evince either limitations in sample size or shortcomings in methodology, diminishing their claims. Thus, the aim of the present study was to rigorously analyze a sufficiently large dataset to statistically verify the existence of even a small correlation between the two target variables.

2. Method and results

Two semesters' worth of data were collected from separate cohorts of first-year Japanese university students in 2017 (N=360) and 2018 (N=370). Each student had taken a TOEIC Institutional Program (IP) pre-test and enrolled in an online ER system known as *Xreading* (xreading.com). Though participation in the ER program was compulsory, the ER software allowed the learners to individually select digital books according to their comfort level and awarded them a word count for scoring 60% or above on a short multiple-choice quiz at the end of each book they read. With the exception of a brief initial in-class demonstration of the system, all ER was treated as homework, with evaluation points (i.e. grades) assigned for final numbers of words read.

Only non-repeating students who successfully completed the academic year and sat for all three compulsory TOEIC administrations were included in the data analysis. Table 1 shows the relevant descriptive statistics.

Table 1. Means, standard deviations, and intercorrelations for TOEIC reading scores and predictor variables

Year	Semester	Variable	M	SD	1	2
2017	Spring	Post-semester TOEIC Reading	156.71	65.82	.79***	.52***
		Predictor Variable				
		1. TOEIC Reading Pre-test	137.34	60.28	---	.45***
		2. Current Semester ER Words Read	42,273	51,429	---	---
	Fall	Post-semester TOEIC Reading	171.39	69.33	.84***	.31***
		Predictor Variable				
		1. Pre-semester TOEIC Reading	156.71	65.82	---	.30***
		2. Current Semester ER Words Read	32,744	41,386	---	---
2018	Spring	Post-semester TOEIC Reading	156.69	64.23	.82***	.19**
		Predictor Variable				
		1. TOEIC Reading Pre-test	137.07	61.58	---	.12*
		2. Current Semester ER Words Read	90,150	72,797	---	---
	Fall	Post-semester TOEIC Reading	167.29	69.08	.84***	.16**
		Predictor Variable				
		1. Pre-semester TOEIC Reading	156.69	64.23	---	.05
		2. Current Semester ER Words Read	80,035	86,093	---	---

*p<.05. **p<.01. ***p<.001.

A hierarchical linear regression analysis was conducted for each semester. For the first half of each year, post-semester (i.e. end-of-spring) TOEIC reading scores were regressed on reading pre-test scores and spring semester words read. For the second half, post-semester (i.e. end-of-fall) TOEIC reading scores were regressed on pre-semester (i.e. end-of-spring) reading scores and fall semester words read.

Despite a decrease from .0003 in spring of 2017 to .0001 in every semester thereafter, in each analysis ER accounted for a statistically significant proportion of the shared variance equivalent to at least one TOEIC point per 10,000 words read (see Table 2).

Table 2. Hierarchical regression analysis summary for variables predicting post-semester TOEIC reading scores in 2017 (N=248) and 2018 (N=249)

Year	Semester	Variable	Model 1 B	Model 1 SE B	Model 1 β	Model 2 B	Model 2 SE B	Model 2 β
2017	Spring	y-intercept	39.90***	6.46		41.59***	6.21	
		TOEIC Reading Pre-test	.86	.04	.76***	.76	.05	.69***
		Current Semester ER Words Read				.0003	.00005	.20***
		R^2		.62			.65	
		F for ΔR^2		396.77***			22.96***	
	Fall	y-intercept	33.19***	6.24		32.82***	6.21	
		Pre-semester TOEIC Reading	.88	.04	.84***	.86	.04	.82***
		Current Semester ER Words Read				.0001	.00006	.07
		R^2		.70			.71	
		F for ΔR^2		576.66***			3.33	
2018	Spring	y-intercept	39.83***	5.7		33.71***	6.12	
		TOEIC Reading Pre-test	.85	.04	.82***	.84	.04	.81***
		Current Semester ER Words Read				.0001	.00003	.10**
		R^2		.67			.68	
		F for ΔR^2		497.18***			7.17**	
	Fall	y-intercept	26.69***	6.39		20.27**	6.55	
		Pre-semester TOEIC Reading	.90	.04	.83***	.89	.04	.83***
		Current Semester ER Words Read				.0001	.00003	.11**
		R^2		.70			.71	
		F for ΔR^2		565.83***			11.10**	

*$p < .05$. **$p < .01$. ***$p < .001$.

3. Discussion

The best predictor of TOEIC reading scores in every analysis was prior performance, which accounted for 48% to 69% of the variance. Even with that portion removed, the number of ER words read showed a small but consistent positive contribution. However, this relationship should be interpreted with caution.

As seen in Table 1, the mean number of words read from spring 2017 to spring 2018 more than doubled, but mean TOEIC reading scores remained nearly identical. The fall semester disparity was even greater, with reading scores slightly decreasing. In Table 2, however, the explanatory power of the regression equation (i.e. R^2) is virtually the same in corresponding semesters of each year. The difference is expressed as a drop in the y-intercept, indicating a downward shift of the regression line: a student with a TOEIC reading score of 100 and zero words read in the fall of 2018 would be expected to earn approximately ten points fewer than an analogous student in the same semester of 2017.

One possible explanation for this finding is increasingly consistent ER implementation across the institution. As Table 1 shows, the correlation between ER words read and prior TOEIC scores steadily decreased semester by semester, from a statistically significant $r=.45$ in the first half of 2017 to a non-significant $r=.05$ at the end of 2018. Students were streamed into their course sections on the basis of a placement test, and instructors in the higher tiers, perhaps more invested in ER from the start, might have therefore held their students more strictly accountable for it. Industrious students in the lower tiers at that time, on the other hand, might have been engaged in other kinds of out-of-class efforts (e.g. work with TOEIC practice materials) to improve their reading. Now that ER is being more uniformly implemented across all course sections, ER words read can still serve as a predictor of TOEIC reading performance – students who read more will almost certainly outperform those who read less – but it might have more to do with general diligence in completing homework assignments than with numbers of words read.

4. Conclusion

This study found a small but statistically significant relationship between ER words read and TOEIC reading scores. However, a lack of proportional increase in these two variables over time suggests mediation by a third variable, such as relative out-of-class diligence. Thus, while ER might have other valuable

short-term benefits, improving TOEIC reading gains does not appear to be one of them.

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