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## **IMPLEMENTING AND MANAGING ONLINE EXTENSIVE READING: STUDENT PERFORMANCE AND PERCEPTIONS**

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### **ABSTRACT**

*Smartphones, tablets, and today's touch screen laptops are powerful tools capable of serving hundreds of specialized, complex operations and applications to anyone, seemingly anywhere in the world. For second language learners and those who teach them, these tools suddenly have the potential to recast the reading experience for 21st century students and invigorate Extensive Reading (ER) research. Exploration into digital ER exclusively through the medium of mobile devices is only an emerging area of study in the English as a Lingua Franca (ELF) classroom. This study reports on the implementation of a 15 week (one semester) pilot test of Xreading® ([www.xreading.com](http://www.xreading.com)), an online Graded Reader (GR) library and learning management system (LMS) devoted specifically to the implementation and operation of extensive reading at a private university in Tokyo, Japan. Participants in this study have access to a vast virtual library of graded readers and are being instructed to read outside of class using a mobile device. This paper reports on student engagement with this platform exclusively for 15 weeks in regards to changes in reading speeds, volume of reading, and correlations between these numbers and TOEIC® IP test scores. The authors will reflect on student attitudes and perceptions of reading digitally and lastly, present some considerations for teachers and administrators who recognize the benefits of ER and who, for various reasons, envisage implementing extensive reading into their classroom syllabus or program curriculum.*

## INTRODUCTION

To develop language students' reading skills and fluency, a large body of research not only supports the implementation of extensive reading (ER) but also highlights increasing interest among language educators (Brown, 2012). In most tertiary-level English language classrooms in Japan, an increasing proportion of language learners' reading experience now consists of their interactions with graded readers (GR) - simplified stories of varying lexical and grammatical levels of difficulty intended for English language learners or anyone learning to read. While the benefits and positive influence extensive reading can have on language acquisition are well documented, research exploring electronic extensive reading, specifically using a mobile device, is still in its infancy. This paper introduces a pilot study at a private university in Tokyo of Xreading (<[www.xreading.com](http://www.xreading.com)>), a virtual library of graded readers and learning management system (LMS) devoted especially to extensive reading. In this study, students were instructed to read graded readers over the duration of one semester (15 weeks), and this report will present their perceptions and experiences as well as report on their learning progress, as represented by growth in reading skills: words per-minute (WPM) analysis, reading volume (word counts) and changes in TOEIC IP test scores.

For the sake of clarity and consistency, the authors' use of the term "online book" throughout this paper refers specifically to books that are accessed from a remote server and read on a mobile platform (e.g., Xreading). Online books, in the authors' opinion, are not books which are downloaded and stored on a personal electronic device. Dedicated book-storing devices, like the Amazon Kindle, will be referred to as an "e-reader". Any digital text stored on or saved to a device's hard drive, whether an iPhone or Kindle, will be referred to as an "e-book".

### *Xreading*

Launched in April 2014, Xreading and the idea for a virtual library of graded readers devoted solely to extensive reading began for very practical reasons. Paul Goldberg, founder and CEO of Xreading, has been using extensive reading in his English classes in Japan for the past eleven years, and despite many successes with this approach and the enjoyment his students expressed, he encountered many obstacles running an ER program. Key among those challenges was the issue of accountability. Mr. Goldberg wanted to know if his students were

reading, and if so, how much were they reading over one semester or year-long course? Other hurdles stemmed from library-related concerns: availability of both popular and level-appropriate books, a lack of class sets (multiple copies of a single title), and inconvenient hours of operation at the university library.

As of this writing, there are approximately 500 books in the Xreading library, 1500 registered users, and 30 registered institutions. An individual, one-year license (US \$19.40, July 2015 rate) grants access to all books in the library and the post-reading quizzes. Answers to the quizzes are scored and recorded by a learning management system (LMS). The Xreading site is accessible via mobile device or PC and since it is a virtual system of online books, multiple users can read the same book. Additionally, for teachers and administrators, the LMS functionality allows monitoring of students' reading progress, including words-per-minute counts, total words read, total number of books read, total reading time, and reading comprehension quiz results.

## **LITERATURE REVIEW**

### ***Benefits of ER***

Among second language research communities, extensive reading is widely acknowledged for its many contributions to language development. Some of the key benefits include: site recognition of vocabulary (Day & Bamford, 1998; Nation, 1997), development of vocabulary knowledge (Chen, Chen, Chen & Wey, 2013; Day & Bamford, 1998; Krashen, 2004; Nation & Wang, 1999), development in reading proficiency (Mason & Krashen, 1997; Nation, 2009, Robb & Kano, 2013), improved writing skills (Krashen, 2004; Mason & Krashen, 1997), and gains in oral skills (Cho & Krashen, 1994). While these rewards have been observed in a variety of English language classrooms, the practical implementation of ER has not been without a struggle. Some of these challenges will be explained in the next section.

### ***Challenges implementing ER***

A language teacher or curriculum coordinator who chooses to adopt an extensive reading component faces a number of logistical challenges. First and foremost among those is cost (Day & Bamford, 1998). A single graded reader costs approximately US\$10.00, and as Hinkelman (2013) notes, the cost for an

institution to provide a wide selection of graded readers of varying genres and ability levels, requires a substantial monetary investment. Furthermore, institutions might also need to consider staffing a moderately sized library collection for day-to-day operation and management.

A second concern addresses how teachers can effectively evaluate and hold students accountable for their reading (Campbell & Weatherford, 2013; Robb & Kano, 2013). Extensive reading is seldom a major element in any language curriculum and teachers are often busy addressing more immediate curricular responsibilities such as textbook requirements, revising essays and preparing for standardized tests. As a result, many teachers do not have time to carefully plan and evaluate student's reading effort or provide constructive feedback and support.

### ***E-book reading***

The rapid rise and spread of powerful mobile computing technology has meant that people are accessing and reading more information electronically wherever they may be. However, it was not until Amazon released the Kindle e-book reader in 2007 that the concept of accessing and reading books digitally became popular (Huang, 2013). Ever since, sales in e-reader devices and e-books have continued to grow exponentially (Doiron, 2011; Gerlich, Browning & Westermann, 2011; Huang, 2013; Lai & Chang, 2011). Due to the lower costs of e-books (Doiron, 2011), the ability to share e-books through online libraries (Chu, 2003), and the need for schools and students to engage with new technology, many universities are exploring the incorporation of electronic reading into their teaching programs (Gerlich, Browning & Westermann, 2011). Indeed, tertiary-level learners around the globe are not just expected to make sense of print and digital text in English, but must also possess sufficient abilities to operate these digital tools and manipulate them for educational or professional purposes. As a result, language teachers are taking steps to train students how to read effectively in this new medium (Huang, 2013; Mesureur, 2013). In the next section, we comment on a number of studies into the impact of e-books on language learners.

### ***Benefits to student and teacher***

Doiron (2011) argued that by broadening students' access to reading materials and increasing the opportunities to interact with other learners about their reading, teachers can nurture more skillful and motivated readers. The effect of e-book reading on language learners' motivation to read has been explored by a number of scholars. Chen et al. (2013) investigated the effects of reading e-books on tertiary-level EFL learners and concluded that e-books boost EFL learners' motivation, reading comprehension and vocabulary learning. In Mesureur's (2013) study of Japanese university EFL students who read extensively on mobile devices, over three-quarters of the students reported that they would engage with ER if they had the option of e-books or access to an online library.

This factor of portability and being able to archive numerous e-books across a variety of genres on a single mobile device, is obviously a big advantage over the practical limitations imposed by multiple, physical, paperback books. Providing a reliable Internet connection, perhaps the biggest influence on students' preference for reading electronically is the fact that they are free to read when they choose. A handful of researchers (Huang, 2013; Lai & Chang, 2011; Mesureur, 2013) have noted that today's students are able to purchase and download a new book in minutes. And, as with many mobile devices, customizing font style, font size and screen layout (Chiang, 2013; Huang, 2013; Lai & Chang, 2012) of e-books and e-readers allows students to personalize their reading experience. Furthermore, when considering one of the key tenets of extensive reading, "that students read as much as possible" (Day & Bamford, 1998, p.7), leveraging fundamental features of personal, mobile devices could make the modern reading experience more convenient, efficient and attractive. For language students, all of this has the potential to create a more positive and distinctive extensive reading experience.

Another key tenet of ER is that it fosters students' love for reading (Day & Bamford, 1998) and pairing students with the appropriate level and genre book is crucial if one hopes to hook and sustain their motivation to read (Doiron, 2011). Students browsing through the Xreading online library can apply filters to their search query. Students can, for example, disqualify books of a certain length, peruse book reviews (written by other students), and search for a certain level of difficulty or even a favorite genre. To that end, about half of the students in this pilot study were required to submit a review for the books they read.

Doiron (2011) noted that early research into digital reading suggested that it could motivate learners to read more. Easy access to multimedia features such as hyperlinks, glossaries, audio narration and links to online dictionaries (Chen et al., 2013; Doiron, 2011; Huang, 2013) is one factor. Additionally, the availability of these tools could potentially make the task of reading in a second language seem more sustainable. In a study of Taiwanese university students, Lei and Chang (2011) found that the multimedia capabilities of an e-book strongly influenced the decision to choose an e-book over a paper book. Tertiary-level English as a foreign language (EFL) students in an e-book study by Huang (2013) felt that the availability of online dictionaries enabled them to read more. Additionally, some e-book systems provide the user with a range of feedback on their reading progress (Brown, 2012; Huang, 2013). The more sophisticated online reading systems or programs chronicle numerous details about the book and reading process, including reading speeds, the levels of books read, the total words read and reading times. With this feedback, students are able to effectively track their reading progress and, if teachers have access to the data, identifying those who need extra support with their reading development is precise and prompt (Brown, 2012).

Although testing is controversial and some would argue contrary to extensive reading principles, the growing popularity of online tests and quizzes, such as M-Reader® (<[www.mreader.org](http://www.mreader.org)>), provide an acute means for teachers to confirm not simply whether a student actually read the material or not, but if they also comprehend to some degree the text they read. Studies by Campbell and Weatherford (2013) and McBride and Milliner (2014) into the application of the M-Reader® software at a few Japanese universities, found that students appreciated being able to determine - through instant quiz results - whether they sufficiently comprehended a chapter or story. Similarly, another e-book study by Huang (2013) on EFL students in Taiwan found that the participants welcomed the comprehension questions embedded at the end of e-books because they were able to gauge their reading progress through quiz questions. Furthermore, participants in the M-Reader® studies also valued tracking their reading history and progress, noting that the software records the total number of books read, personal overall word counts and a record of the levels of books read. These examples suggest that learners and teachers alike stand to benefit from the flexibility, customization, feedback, and in some cases, tracking history, contemporary online reading systems, e-books and e-readers afford.

To conclude, studies into the application of e-book reading in language classrooms suggest that learners appear to value not only the convenience,

accessibility and diversity of an online reading system or e-book, but also the portability and flexibility that mobile devices offer. What's more, reading teachers should take notice of research which points to the positive effect e-books can have on motivation. All of these factors can be exploited to spark, and possibly sustain, student interest in reading extensively.

### ***E-book reading challenges***

A number of studies into e-book reading in EFL teaching contexts have revealed that reading for long periods of time on an electronic screen, including mobile devices, can be more fatiguing and slower than reading on paper and potentially more distracting. Research uncovered by Mangen, Walgermo and Brønnick (2013), show that light-emitting screens, such as those used in the majority of mobile computing devices, are known to cause visual fatigue and, specifically, computer vision syndrome. In Huang's (2013, p.274) study of Taiwanese university students, participants complained of "tired eyes." Similarly, Taiwanese senior high school students in Huang and Lin's (2011, p.69) research complained of "eyestrain" when they read long texts on their mobile phones. In a study of Japanese university English learners' reading efficiency using e-books, Mesureur's (2013) students perceived their reading speed to be slower when they read text on a screen or monitor as opposed to text on paper. Additionally, the participants in Mesureur's study (2013) also complained that interruptions from email banners and push notifications prevented them from being able to focus for long periods on an e-book. Although eye fatigue, slower reading speeds and unwarranted disruptions may be valid e-reading critiques, these consequences were not noted in a number of other studies.

In his review of paper versus screen reading research, Dillon (1992) concluded that readers generally do not feel reading from screens to be fatiguing, and that reading quality was only compromised when the screen quality was poor. The eyestrain issue, however, was not observed in a number of other studies. Respondents in Chu's (2003) investigation into American graduate students' perceptions of e-books did not complain of either eyestrain or tiredness. Furthermore, many students around the world currently spend large amounts of time daily on their personal mobile devices without such grievances. Indeed, Japanese university students participating in a study on mobile assisted language learning (MALL) admitted spending numerous hours reading on and interacting with their smartphones daily (Cote, Milliner, Flowers & Ferreira, 2014), all without complaint. Huang and Lin (2011) went on to question whether these

complaints about eye-strain were more a result of slow reading speeds or cognitive investment in reading in a second language, because, as the authors observed, students were happy reading books in their native language on their mobile devices.

Perhaps engaging in a task like extensive reading, when a student must focus on a device's screen for ample amounts of time, may not be an exercise well suited to this medium (Doiron, 2011; Huang & Lin, 2011; Popat & Stead, 2004; Runnels & Rutson-Griffiths, 2013; Stockwell, 2008). In fact, students in Huang and Lin's study (2011) generally preferred to read shorter English messages on their mobile phones. In an analysis of Japanese university students' use of mobile phones for vocabulary practice, Stockwell (2008) questioned whether studying on a mobile device may be more appropriate for learning tasks which are short or require a lower cognitive investment. Huang and Lin (2011) on the other hand, posited that a smaller screen might in fact enhance the reading experience for some learners because it requires the reader to focus more carefully on the limited amounts of text being displayed. These reflections on using mobile devices for learning not only suggest a potential for lowering a reader's anxiety, but also a focusing of one's attention on the immediate task, particularly when compared to cases where students are asked to read longer pieces of paper text.

Most studies into electronic reading in tertiary EFL contexts have discovered, not surprisingly, that students are still very attached to the habit of reading traditional paper books (Chiang, 2012; Chu, 2003; Dillon, 1997; Huang & Lin, 2011; Mesureur, 2013). Doiron (2011) noted that e-readers are designed for leisure reading, and they are not necessarily designed for academic reading purposes. Dillon (1997) noted that paper documents are normal, easy to use, flexible, personal, cheap, and portable. Mesureur (2013) cited the feeling of satisfaction a reader experiences when reaching the final page of a book, like a tactile reward. Mesureur also reported that his students felt that they were able to evaluate their reading progress more effectively when reading a paper book, because they were able to physically identify how much they had read.

Although extensive reading is neither a new field in language acquisition research nor a rare component in the English language classroom, digital extensive reading is, and requiring students to read exclusively on their smartphone via a remote, online graded reader library and management platform is particularly contemporary. This pilot study is attempting to evaluate the efficacy of reading on smartphones and whether this virtual approach to an extensive reading component amounted to any added learning outcomes for



students. Furthermore, the authors of this study are interested in collecting user perceptions and reactions to the digital ER experience and the ability to participate in the process entirely online.

## **RESEARCH QUESTIONS & RESEARCH METHODS**

This study aimed to evaluate whether it is worthwhile for the authors' university English program to adopt an online, digital format for graded reader delivery and ER component management. In particular, this study set out to address the following:

1. Did students have a positive attitude towards reading digitally at the end of the semester?
2. Did the online book format amount to a change in reading performance?
3. Did student's reading performance results correlate with any changes in students' language skills as indicated by changes in their TOEIC scores?

### ***Research context***

This study was initiated in five ELF classes taught by the authors (three classes taught by one author, two by the other) at a private university in Tokyo, Japan. All students had been studying English for at least five years prior to the research. A total of 27 male students and 68 female students took part in this study, creating an overall sample size of 95 students. Based on TOEIC IP or TOEIC Bridge test scores, students were streamed into the appropriate class. The average TOEIC score for the participant sample was 416. Despite the fact that all teachers in this ELF program are encouraged to incorporate an ER component in their classes, there are no specific guidelines teachers must adhere to. In the case of the classes concerned in this study, ER accounts for 10% of the students' final grade. This score is a reflection of the total number of words read (students must read in excess of 50,000 words to receive the full 10%), reading comprehension scores (tallied within the Xreading LMS) and quantity of student engagement with the software as reflected in usage log data. Although the extensive reading component was originally considered additive ER (extensive reading done outside of class), the authors of this study allowed 10 minutes of silent reading during each class meeting as previous studies (Dillon, 1992; Gjedde & Bo-

Kristensen, 2012; Huang, 2013; Stockwell, 2008) indicated that students need in-class time adjusting to this new approach to reading books.

### ***Research methods***

In order to collect students' perceptions of digital reading and their attitude towards it, an online questionnaire was created with SurveyMonkey ([www.surveymonkey.com](http://www.surveymonkey.com)) and distributed to the students during the first and last classes of the semester. These reports were then analyzed with a focus on identifying any changes and/or trends in student perception and attitude towards the adoption and use of this approach to ER in the language classroom. In order to examine any changes in reading performance or improvement in language skills, individual student Xreading data (books read, total words read and changes in reading speed), along with end-of-semester TOEIC test scores, were analyzed.

Of the participants in this pilot study, 70% claimed they had never read a book on their smartphone, and almost the same number preferred to read a graded reader in paper form. Considering the students' lack of e-book experience, and attitudes towards reading in general, the authors carefully trained the students how to set up, access and use their Xreading account on their mobile device during the early stages of the pilot. Research by Huang (2013) concluded that it was only after students were carefully trained to use their e-book reading software did their attitudes towards reading e-books change. A separate study by Stockwell (2008) also noted that students need time familiarizing themselves with new technology and adjusting to reading on a small screen; and in the case of follow-up comprehension questions, modifying their typing suitable to mobile device keypads. Moreover, although participants in this study appear to be using their smartphones frequently (77% reported using more than 2 hours every day), they may not be motivated to use their device for academic purposes, nor be very skillful at manipulating software and applications. A study on student preferences for mobile learning, again conducted by Stockwell (2008), just over two-thirds of respondents (70.8%) reported having very positive perceptions using their mobile device for language learning, but after analysing the respondents' access logs, Stockwell found that a little over 60% did not make use of the mobile applications, preferring instead to complete the learning tasks on a personal computer. Stockwell (2008) concluded that the design of the software or program ultimately has the largest influence on the adoption of a mobile learning approach, and it was clear from the initial pre-pilot student feedback that the

teachers, and their efforts to train students to read using a mobile medium, was crucial in fostering beneficial student interactions with the application.

## RESULTS

### *Students' attitudes towards extensive reading*

It was learned from the pre-pilot questionnaire that respondents generally did not have a very favorable perception of ER or reading in English (see Table 1). A total of only 13 (22%) students strongly agreed or agreed that they enjoyed reading graded readers, and only a third of respondents agreed or strongly agreed that they liked reading in English. These poor results suggest that further effort must be made by teachers to encourage reading and enhance their students' ER experiences in the ELF classroom. Indeed, if Day and Bamford are correct in saying that "reading is its own reward" (1998, p. 8), these current student perceptions imply that reading in general is a long way from being seen as a rewarding experience in and of itself. Many students are also unsure or appear to question the benefits of ER in their English classes. A little over half of respondents (53%) agreed or strongly agreed that reading graded readers could improve their English skills, 36% were unsure, and 12% disagreed or strongly disagreed. This gap in understanding suggests that again, teachers need to be explicit in their justification of requiring students to engage with graded reader books.

**Table 1.** Student perceptions of ER

Questionnaire item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I enjoy reading graded readers. (n=59)	1	12	29	15	2
2. Reading graded readers will help me improve my English skills. (n=59)	1	30	21	6	1
3. I like reading in English. (n=92)	6	25	43	16	2

*Note.* Respondents skipped some questionnaire items, hence n-values do not match the overall sample n=95.

***Students' digital book reading experience***

It was reported earlier that 77% of students reported spending more than two hours every day using their smartphones, however 70% of students had never read a book on their smartphone before. Furthermore, after investigating the experiences of the 28 students who have read a book on their smartphone, only five of those students had read more than ten books on this device. According to Sun, Flores and Tanguma (2012), the concept of e-books is still very new to most people, and as a result, the authors cautioned that respondents' preferences might not be based on their actual experiences, but rather their preconceived conceptions of paperbacks and e-books.

***Students' e-book reading attitudes***

Very few students have ever read an e-book and Table 2 illustrates that, unsurprisingly, this inexperience influenced their reading preferences prior to the pilot study. The majority of students noted that they would prefer to read a book (72%) or a GR (68%) in paperback form. In the post-pilot questionnaire however, preferences were completely reversed. Approximately 77% of students stated they would prefer to read an e-book, and an overwhelming 91% chose an e-book as their preferred format when reading GRs.

**Table 2.** Student preferences for reading online books and GRs

Question	Pre-Pilot (n=93)		Post-Pilot (n=90)	
	Online book	Paperback	Online book	Paperback
<b>How do you prefer to read a book, as a paperback or reading on your smartphone?</b>	26 (28%)	67 (72%)	69 (77%)	21 (23%)
<b>How would you like to read a GR?</b>	30 (32%)	63 (68%)	80 (89%)	10 (11%)

*Note. Some students were absent on the days these questionnaires were conducted. Therefore, there are some discrepancies between n-values.*

To explain why this study was able to observe such a dramatic shift in reading preferences, students' responses to an item asking them to list what they liked about the Xreading software provide some clues (see Table 3). A key theme to emerge was that students enjoyed the convenience of accessing an online library. They could read anywhere and at any time. It was easy for them to access the library, and they could browse and borrow books without visiting a physical, campus library. One significant concern was that only three respondents reported enjoying, or having interest in, reading itself. Some students, however, may have appreciated being able to manage their ER more efficiently. Three students noted that they liked the ease at which they could search for books (e.g., genre, level or number of headwords), two noted that being able to observe their reading progress was useful, while another noted that the platform enabled them to focus on their reading more.

**Table 3.** What students liked about Xreading (ranked by frequency)

Frequency	Comment Category
16	Can read anywhere
13	Can read anytime
13	Easy to use
8	Large library of books
4	Easy to search for books
3	Easy to borrow books
3	Interesting
2	Can access reading data
1	Can focus on reading
1	Can read on my smartphone

When students were asked to list features of the Xreading system they disliked, no negative comments were noted about the content of the books or their reading enjoyment; rather, students noted a variety of frustrating technical issues they experienced while either logging in or reading. Table 4 sums up these concerns in order of frequency.

**Table 4.** What students disliked about Xreading (ranked by frequency)

Frequency	Concerns & dislikes about Xreading
22	System errors
6	Login time
4	Slow loading
3	Difficult to use
3	Eyestrain
2	Waste of battery life
1	Small library

As with any digital or online system, the risk of delays and software freezing will always be an issue, and since this pilot study was undertaken during the first months of Xreading's official launch, certain technical issues were inevitable. A second point to emerge was that system errors and perceptions of lengthy login times, or delayed loading, might discourage students from continuing to read. Although this study did not attempt to measure how much of an affect these issues had on reading, it is a worthwhile issue for investigation in future reviews of online book reading and the implementation of online reading systems.

### *Students' reading performance*

Student reading performance logs were investigated to identify student engagement and the effectiveness of this approach to ER. Table 5 provides a summary of student engagement with the Xreading platform, and it is clear that a large majority were able to reach the target of 50,000 words, and in many cases some students reading in excess of the target. Although the absence of log data for students' traditional, paperback reading in the previous semester prevents the authors from making a more definitive judgment on shifts in student engagement, a questionnaire item asked students to note how many paperback GRs they read in the previous semester. Although thirteen students noted that they read more than 10 paperback GRs, a comparison between the average amount of books read in the previous semester of paperback reading (6.63) and the mean score for online books (11.2), suggest on the surface that the online book approach enabled students to read more. Even though a number of authors caution against the use

of “books read” as a useful measurement of ER engagement (Extensive Reading Foundation, 2011; Robb & Kano, 2013), the authors were nonetheless encouraged by this achievement.

**Table 5.** Summary of students’ Xreading log data (n=95)

Measure	Mean	Range	SD
Total books read	11.2	0~33	8.09
Total words read	62010	1344~ 166939	45309
Total reading time	13:04	0:00 ~ 7:23	0.60

### *Language learning outcomes*

As stated earlier, prior to the pilot program the average TOEIC score for participants was 417 out of a possible 990. After engaging with the online ER component for approximately four months, the students’ average TOEIC score at the end of the semester increased to 445 (a 7% rise). To identify whether the ER component had any significant influence on the TOEIC score increase, a regression analysis (see Table 4) was undertaken. Two measures from students’ Xreading data were correlated with their TOEIC score changes: total words read; and, a comparison between WPM at both the start and end of the pilot study. The results from this analysis (see Table 6) suggested that while both measures had a positive correlation with increased TOEIC scores, those students who were able to enjoy a larger increase in reading speed during the pilot were also able to achieve a higher increase in TOEIC score.

**Table 6.** Regression analysis for total words read and changes in reading speeds

	Constant	SE	t	p
Intercept	-0.404	0.236	-1.709	0.091
TWRR	0.0408	0.021	1.966	0.052
WPMIR	0.0803	0.021	3.761	0.000
TD	0.120	0.055	2.168	0.033

Notes. \*TWRR: Total words read ratio

WPMIR: Words per-minute increase ratio

TD: TOEIC dummy

F-value: 7.474

Sig. 0.000

TSIR:  $-0.4+0.041TWR+0.08WPMIR+0.12TD$

## DISCUSSION AND LIMITATIONS

To summarize, the authors were bolstered by the results of this study. Most students appeared to have a positive perception towards this approach to extensive reading. Students also appreciated the convenience and access to feedback on their reading progress. Increases in reading performance and engagement with the ER component were evidenced as a positive shift in reading speed and overall volume of reading that the students were able to achieve. Lastly, some positive language learning gains were observed. A regression analysis suggested that greater increases in TOEIC scores were obtained by those students who read more and by those who were able to significantly increase their reading speed.

As noted earlier, there were some limitations to this study. The formatting of the pre-pilot online survey allowed students to skip questionnaire items which prevented the researchers from learning from the entire student group. This issue was noted and the post-pilot survey's formatting was edited accordingly, hence a better response rate was achieved for all survey items. Next, it was difficult to control for the influence each teacher and possibly other learning tasks had on students' engagement with the software and overall learning outcomes. For example, software training, the teacher's use of motivational devices, and ER management style may have influenced students' performance differently.



Moreover, the other learning activities conducted in each of the classes (e.g., specific TOEIC test related study, vocabulary drills or intensive reading tasks) may have had a stronger influence on TOEIC test scores. A final concern was that some students did not reach the reading requirement at the end of the semester. In fact, twenty students (21%) read less than 10,000 words. The existence of reluctant readers may suggest that ER in this medium may not be appropriate for some students, and as a result, the authors decided to evaluate this group of students in a future research study.

## CONCLUSION

This post-pilot evaluation has provided the authors with a number of useful insights as they move forward with their investigation into the implementation of an online, mobile approach to extensive reading in their English classes. Although the majority of the participants had never read a book on their smartphones prior to this pilot study, a large portion of the cohort were able to read much more in this medium than they did when the extensive reading material was entirely paperback-based during the previous academic year. What's more, this study recognized that those students who read more and increased their reading speeds, were most likely to achieve significant increases in their TOEIC test scores.

## ABOUT THE AUTHORS

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