Extensive listening and how it affects reading speed

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This study investigated the effect of extensive listening on reading speed. Thirty-five Japanese university students volunteered for this investigation. The participants were randomly divided into three groups: control, extensive listening (EL), and extensive reading (ER). All participants were given a pre-test to determine reading speeds, and then the treatment groups engaged in eight weeks of extensive reading or listening. The ER group results were not subjected to statistical analysis because too few participants read the required amount of books (six books over the eight week treatment period). Though the ER group's data was not sufficient to draw statistical conclusions, we include it to allow for some preliminary comparisons to be drawn. A matched-pair ***t***-test was used to compare the results of the EL group's pre-test and post-test reading speeds. The EL group's reading speed did improve, and the ***t***-test showed statistical significance. The results also indicated the required amount of material for EL to be effective in regard to reading speed is about one 30-minute audio book per week.

本研究では、extensive listening がリーディング・スピードにおよぼす影響を調査した。日本人大学生３５名の志願者が本調査の被験者となった。被験者３５名を、無作為に、対照群 (control group)、extensive listening を課すグループ (EL)、extensive reading を課すグループ (ER) の３つのグループに分けた。まず、全員に事前テスト (pre-test) を受けてもらいリーディング・スピードを調べた後、ERグループおよびELグループには、８週間にわたってそれぞれの課題に従事させた。ERグループの結果は、課題として与えられた読書量 (８週間の実施期間中に６冊)をこなした学生が少なかったため、分析対象とはならなかった。しかし、ERグループのデータは、統計的な結論を導くには不十分ではあるものの、暫定的な比較を示す数値として報告しておく。ELグループに関しては、事前・事後テストにおける被験者のリーディング・スピードについて、その平均値を対照表に示した。ELグループのリーディング・スピードは明らかに向上しており、そのことは対照表の結果に如実に示されている。また、本調査結果は、ELによってリーディング・スピードを向上させるには、３０分のオーディオ・ブックを毎週約１本聴くことが必要であることも示唆している。

While extensive reading has been credited with learner improvements in reading comprehension and reading speed (Storey, Gibson, & Williamson, 2006) as well as in grammar and vocabulary acquisition (Nation, 2001; Krashen, 2004; Mason, 2006; Brown, Waring, & Donkaewbua, 2008), there has been considerably less research focused on extensive listening. The aim of this study was to discover if extensive listening helps learners improve in other skill areas, specifically, how using audio CDs of graded readers impacts reading speed as compared to extensive reading. The following paragraphs will give a brief literature review of extensive listening, a description of extensive reading, the benefits of extensive

reading, and why reading speed matters. This will be followed by a description of the methodology, results, and conclusions for this study.

Extensive listening

Extensive listening (EL) has not received the attention that its counterpart, extensive reading (ER) has; however, there are signs that this is changing. Most graded readers have an optional audio CD, and there are a growing number of extensive listening podcasts (CBC Radio, BBC podcasts etc.) dedicated to English language learning.

EL is similar to ER in that learners are exposed to large quantities of comprehensible input. For ER, they are encouraged to read material at a level slightly below their own (Krashen, 2004), and to set a goal of at least a book every two weeks if not more (Nation, 2001). Also, there is a need to offer a wide selection of materials across many genres (Day & Bamford, 1998). By offering a wide selection, students are able to self-select material they are interested in, which will maximize interest, motivation and autonomy. Brown (2007) and Ushioda (2008), among others, have asserted the importance of motivation and autonomy in language learning.

Where EL starts to differ from ER is in the speed of the input. A reader can go through the material at her or his own pace, whereas for EL, this is largely out of the listener's control. Another difference is that EL gives the student the opportunity to hear the speaker's intonation, stress and prosody. The actor who records the story can convey emotion and give life to the character (Prowse, 2005); this may help with comprehension.

For some language learners, EL is more desirable in that it offers comparable qualities to ER in an alternative form. Learning style differences are common among students; some students prefer, or find they are more comfortable with, listening as opposed to reading. EL also has the added advantage of flexibility in terms of where and when it can be done. Students can engage in EL while driving or walking, or in noisy locations (by using headphones) that might make ER difficult to do. In addition, students can do EL anywhere and at anytime they could do ER.

By engaging in EL, students can focus on the most common of the four language skills (listening, speaking, reading and writing). Listening accounts for more than forty percent of our daily communication (Burely-Allen, 1995). However, it has been neglected in SLA research and in the amount of class time dedicated to teaching this skill (Miller, 2003; Prowse, 2005; Ur, 2008).

The following two studies looked at extensive listening and its effect on vocabulary acquisition. Thirty-five Japanese university students participated in a study of incidental vocabulary acquisition that measured retention rates for newly encountered vocabulary. The researchers (Brown et al., 2008) found that after three months the extensive listening participants were unable to recall any of the new words. The results for extensive reading and reading-while-listening participants were only slightly better. However, a study of native speaking children (Elley, 1989) showed considerable vocabulary acquisition as a result of extensive listening. There was no explanation given by the researchers of the 2008 study for these differences. These two studies might indicate a fundamental difference between first and second language acquisition.

Extensive reading

To recap, extensive reading is a form of second-language reading where students read large quantities of material. The material should be easy to understand, enjoyable and of high interest to the student. The main goal of ER is to improve reading fluency, but there are also other benefits (described below). ER is different from intensive reading, which is commonly used in

second language reading classes. For intensive reading, students typically read shorter passages that are at a slightly higher level than their own. The goals are to learn new vocabulary, grammar and reading skills.

The benefits of extensive reading

For the purposes of this paper, we are going to assume that the benefits from EL are fundamentally the same as those from ER. As mentioned previously, extensive reading has been credited for development in other skill areas. Krashen (2004) states that ER leads to improvements in all aspects of literacy. Grammatical competence (Mason, 2006; Sheu, 2003) and vocabulary acquisition (Nation, 2001; Mason, 2006; Brown et al. 2008) have also been shown to progress as a result of ER. ER has also been shown to increase student confidence and motivation (Mason & Krashen, 1997). However, Nation (2001) warns that the number of unknown words should not exceed five percent of the text (and ideally should be closer to two percent), and that a learner needs to read a large quantity of material for progress to be seen. The amount of material and the time required for improvement to be seen are still largely unknown.

Reading speed and why it is important

The link between ER and reading speed has also been the subject of some studies. In one study, (Storey et al., 2006) an increased reading rate was seen after only eight weeks of ER; the participants' reading speed increased by an average of 71%. Other studies (Tanaka & Stapleton, 2007; Mason & Krashen, 1997) agreed with these results.

Learners can benefit from an increased reading speed, especially given the importance placed on standardized tests such as TOEFL and TOEIC for Japanese learners. These tests are demanding and require the students to read long texts in a relatively short period of time. It has been proposed that reading speed also contributes to comprehension in that learners are more able to follow the plot of a story when they can quickly read the text (Wilkins, 2009). In addition, improvements in reading speed make reading more enjoyable. This in turn will encourage students to read more and reap the benefits mentioned above. This process is cyclical and self-perpetuating (Hill, Lewis & Lewis, 2000).

Current study

This study aims to build upon the research mentioned above, but more specifically, to look at extensive listening as a possible approach to improving reading speed. The original belief behind this study was that by engaging in EL, students would be forced to process input at a quicker rate. It was hypothesized that this might have a carry-over effect into reading. For this study the participants were divided into three groups: ER, EL and control. The main research questions under investigation in this paper are as follows:

1. Do the participants show an increased reading speed after engaging in two months of extensive listening practice?
2. Assuming reading speed improves, within each group, what amount of material is required to show an improvement in reading speed over a two-month period?

With these questions in mind the following hypotheses were constructed:

- A null hypothesis (H_0): Two months of extensive reading or extensive listening practice will not affect the participants' reading speed.
- An alternative hypothesis (H_1): There will be a significant difference in the reading speed of at least one of the groups

(control, listening, reading) in comparison to any of the other groups.

Methodology

The following sections describe the rationale for the study design, the participants, the treatments that were used, and the measurement considerations.

Rationale

This study was hoping to find a relationship between extensive listening and reading speed improvements. Since reading speed can be measured in a numerical term (words per minute) quantitative methods were chosen for the analysis. Due to the fact there were two different experimental groups, Brown (1998) suggests that the ANOVA is the most appropriate way to analyze the results. However, only a small number of the students in the ER group read a sufficient quantity of material, so instead of the ANOVA, a *t*-test was used to compare the EL pre-test and post-test results. This will be expanded on below in the criticisms section of this paper.

Participants

The students who participated in this study were self-selected volunteers from a population of three hundred first-year university students in the faculty of life sciences at a medium-sized private university. These students were taking two ninety-minute English classes per week, one of which was a reading class taught by a Japanese instructor; the other class was a conversation class taught by a native speaking English teacher. The reading class did not focus on reading speed. This class focused on intensive reading where the students would spend considerable time translating scientific articles written at a much higher level than the level at which they could read fluently.

This study was done in the fall semester, so it was possible to look at their spring semester grades in both English classes. The grade distribution of the volunteers was similar to that of the entire first year student population in the two English classes. Therefore, the students who volunteered were considered to be representative of the entire population. Thirty-five students decided to join this research project. Students with similar spring semester grades were matched and then randomly assigned to one of the three groups: extensive reading, extensive listening and control. It was assumed that the students' grades reflected their overall English language proficiency. All of the students were then given a pre-test: a short reading passage (Quinn, Nation, & Millett, 2007) at the General Service List (West, 1953) one thousand word level. The students recorded their reading speed and then answered ten comprehension questions based on the passage. The students were not aware their reading times were the focus of this study. The comprehension questions were not particularly important for this study, but it was thought that the questions would ensure the students read the passage as opposed to quickly skimming through for gist.

Treatment

The extensive reading and extensive listening stage of this study lasted for eight weeks. All three groups continued with their normal class schedule; however, the ER and EL groups were given special instructions:

- The advantages of ER and EL were explained to the students, and a suggestion of trying to read/listen to at least one book a week was given.
- Students were told to choose books that they were interested in, and to not be afraid of exchanging a book that was too difficult or not interesting.

- The students were also instructed on how to use the graded reader library. This library is made up of over five hundred graded reader titles from major publishers. The newest and most popular graded readers were ordered to supplement what was already on hand. It should be noted though, that while the library has over five hundred titles, due to the students' level, only about one hundred graded readers were level appropriate (the first two levels offered by most publishers).
- The EL students only had access to the graded reader audio CDs while the ER students only had access to the graded readers. Brief descriptions for all the graded readers (in written form) were provided to the EL participants so they could choose stories that were of interest to them. Neither the EL nor the ER group could read while listening to a story because the EL students could only borrow audio CDs while the ER students could only borrow graded readers (audio CDs removed).
- Over the course of the eight-week treatment, the students in the ER and EL groups were encouraged to continue reading/listening to one book per week. This encouragement was not given in a forceful manner.
- ER and EL students often asked for help in choosing books over this eight-week period.

Measurement

The post-test consisted of another reading taken from the same collection of readings (Quinn et al. 2007) used for the pre-test. Since the readings contain the same number of words, and are all at the one thousand word level, reliability was considered to be high.

Some of the participants in both the ER and EL groups failed to read/listen to the target number of books. Because of this, a cut-off level of six books over the eight weeks was established. As a result, the results for five of the EL participants were not used in statistical analysis. Only three of the participants from the ER group reached this cut-off level, so it was decided to narrow the focus to just the EL group. The ANOVA was no longer suitable, so a *t*-test was used to analyze the results: a matched-pairs *t*-test using the pre-test and post-test results for the EL group.

Results

The reading speed of the ER group (3 participants) increased by 14%, while the reading speed for the EL (7 participants) group increased by 5.1%.

Table 1. Pre-test and Post-test reading speeds for groups

	N	Pre-test	Post-test	Change	Pre-test SD	Post-test SD
Control Average reading speed- wpm	12	90.25	91.33	+1.08 (1.2%)	28.27	22.05
Reading Average reading speed- wpm	3	84.33	96.33	+12.00 (14.2%)	14.01	27.23
Listening Average reading speed- wpm	7	90.00	94.57	+4.57 (5.1%)	44.70	36.90

SD – standard deviation

wpm – words per minute

Table 2. Pre-test and Post-test reading speeds for listening group members

	1	2	3	4	5	6	7
Pre-test reading speed (in seconds)	484	362	390	645	438	465	175
Post test - reading speed (in seconds)	407	335	395	543	388	435	189
Difference	-77	-27	+5	-102	-50	-30	+14
Number of audio books listened to	14	12	8	7	6	8	8

A one-tailed matched-pairs *t*-test was conducted to compare pre-test and post-test reading speeds for the listening group. There was a significant difference in the scores; $t(6)=2.4125$, $p=0.05$. There was an overall improvement. The results are significant enough to indicate that EL leads to improved reading speeds.

Discussion and conclusions

It was unfortunate that so few reading group participants completed the required number of books. This required a switch from the ANOVA test to a matched pairs *t*-test and also made it difficult to compare the ER group to the EL group in regard to reading speed. Originally, there was a third research question comparing the two treatment groups in regard to reading speed.

The result from the *t*-test was significant; this is somewhat surprising given the small group sizes and the relatively short duration of the treatment period (eight weeks). These results indicate that EL does lead to improvements in reading speed. However, it might be best to view this study as a pilot given the extremely small sample sizes.

In regard to the amount of material required (the second research question), the results indicate that for EL some improvement in reading speed can be seen with around one audio book per week. The participants in the EL group listened to between six and 14 (nine on average) audio books during the eight-week treatment with five of the seven participants showing an increased reading speed. This amount of material is similar to what Nation (2001) claims to be the absolute minimum for ER to be effective.

The number of different audio books each participant listened to is shown in Table 2. The students were instructed to choose audio books that were easy to comprehend with only one listening. However, it is possible some of the participants listened to a story (or part of a story) several times thus increasing the amount of EL they engaged in. For the EL participants, the majority of audio books listened to were Oxford Bookworm Starters, Penguin Readers Easystarts, and Cambridge English Readers Starters.

This study only focused on reading speed; it is still unknown whether this quantity of EL material would result in improvements in other areas of English proficiency such as vocabulary acquisition or listening comprehension. However, considering the lack of vocabulary improvement for the participants in the study done by Brown et al. (2008), and the increased reading speed seen in the Storey et al. (2006) study, there is evidence that one of the first skills to improve through ER or EL is reading speed, whereas vocabulary acquisition requires a greater amount of time and material.

An interesting observation was made when the results of the reading comprehension questions were graded. After completing the reading and recording their reading speeds, the participants answered ten comprehension questions about the passage. The control group's pre-test and post-test scores were very similar. The ER group also had very similar scores between the

2 tests. However, the EL group showed a ten percent improvement from their pre-test to post-test for reading comprehension. A matched pairs *t*-test was used for analysis, but the result was not statistically significant. A study focusing on reading comprehension with a longer treatment period would be a worthwhile follow-up to this study.

Another interesting observation that was made during the course of this investigation involves the level of the materials for the two experimental groups. The ER participants commonly asked for readers that were at a higher level than their initial choice, whereas, the EL participants commonly asked for materials at a lower level. While no measurement was taken, the EL students seemed to be comfortable listening to graded readers that were one or two levels lower than their ER counterparts despite the fact that the students' overall level was assumed to be quite similar.

As mentioned earlier, the participants in this study were all volunteers from a university population. Furthermore, this study was conducted during the fall semester when all of the participants had a full class schedule. As a result, some of the students in the ER and EL groups did not have enough free time to dedicate to this study and were unable to read or listen to the required amount of material. If this study were done in a classroom setting that had some form of student accountability, the number of students who reached the target of six (audio) books over the eight weeks would likely be higher.

Criticisms

In hindsight this investigation had a number of weaknesses, which are discussed below:

The reading rate of the ER group was substantially lower than that of the other two groups in the pre-test. The students should have been given the pre-test before being divided into groups. This would have allowed the researcher to account for initial reading speed when forming the groups.

Given the fact the reading and listening was done during the students' free time, the ER and EL participants spent more time on task in English than the control group. It is possible the improved reading speed is the result of simply being engaged in English for this extra amount of time as opposed to specifically being the result of extensive reading or listening.

By only including the results of participants who met a certain threshold in regards to books read/listened to, it is likely that the participants in the final ER and EL groups were more motivated than those in the control group. This might have influenced the results.

The participants were all volunteers. It is likely they were more motivated than the other university students.

This study lacked an aspect of student accountability. This resulted in many of the ER and EL group participants failing to read a sufficient quantity of material.

Future Research

Two similar studies are planned:

- An investigation looking at the effect of extensive listening on TOEIC test scores.
- A qualitative study, targeting low-level students, investigating student impressions of doing extensive listening activities in class.

Bio data

Joshua Brook Antle is a lecturer at Toyo University in Gunma. His research interests are extensive listening and collocations.

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