

The multidimensional effects of extensive listening on EFL learners

Anna C-S Chang¹, Willy A. Renandya^{2*}

¹The Department of Applied English, Hsing Wu University, Taiwan, ²English Language and Literature Department, National Institute of Education, Nanyang Technological University, Singapore

*) Corresponding Author, email: willy.renandya@nie.edu.sg

ABSTRACT

This study investigated the multidimensional effects of extensive listening (EL) on learners' actual language gains, selection of study materials, and practice styles. Language gains were measured through a pre- and a post-test on students' aural vocabulary test (Listening Vocabulary Levels Test, LVLT) and general listening comprehension (TOEIC), administered before and after the intervention. Fifty-five university student participants took part in the four-month experiment; they were entirely free to select their favorite study materials online or off-line. The results showed that each student spent an average of 1,387 minutes (approximately 87 minutes per week) doing EL practice. The three most popular study materials were the following: Songs (63.64%), movies (49.09%), and talks (43.46%); materials were mainly from YouTube (74.55%), Netflix (49.09%), and other miscellaneous sources (43.63%). Their practice style was unanimously a combination of viewing and listening. From the pre-tests to the post-tests, students made significant gains in both LVLT and TOEIC, but the effect sizes were small. Some suggestions are made for implementing EL.

Keywords: ELT; extensive listening; listening and viewing; second language listening

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INTRODUCTION

Extensive listening (EL) refers to exposure to massive amounts of aural input by means of varying sources such as TV programs, audiobooks, and online learning resources. Its main purpose is to improve automaticity in recognizing spoken text and developing listening fluency. EL began to gain attention from L2 researchers and language practitioners after a substantial amount of research evidence showing that extensive reading (ER), the twin sister of EL, plays a key role in improving language proficiency (see <http://erfoundation.org/bib/bibliocats.php>). The number of studies on EL, though growing steadily, has been far less than ER. Although the input processing of listening is more challenging than reading for its nature being fleeting and ephemeral, listening and reading skills share more similarities than differences. As with the principles of ER, EL has the following features:

1. A massive amount of aural input: Listeners are exposed to a large amount of the target language spoken texts.

2. Meaning-focus input: Listeners focus on the meanings of the aural input, not to intentionally learn certain linguistic elements.
3. Comprehensible input: The spoken texts should be easy for listeners to reach a reasonable degree of comprehension, e.g., a minimum of 70% (by reading fluency standard), and contain at least 90% to 95% known words (van Zeeland & Schmitt, 2013).
4. Self-selected spoken texts: Listeners select materials that suit their language proficiency level, their interests, relevance, etc., and practice at their own pace.
5. Learner accountability: Listeners should demonstrate their accountability for what materials they select and how they listen to them.
6. Teacher role: Teachers give their students guidance on how to select materials and how to practice and monitor students' progress in suitable ways.

LITERATURE REVIEW

L2 language gains from EL

EL has been found to be beneficial to improve L2 learners' listening comprehension, vocabulary knowledge, pronunciation, reading comprehension, motivation, etc. This study focuses on the first two dimensions; research into the two areas is briefly reviewed and discussed in the following section.

Improved listening fluency and comprehension

Research into the effectiveness of EL on improving listening comprehension has been relatively consistent and positive (e.g., Chang et al., 2019; Gavenila et al., 2021; Masrai, 2020). In their recent study, Chang et al. (2019) conducted a 39-week teaching experiment with 69 college students who were exposed to 28 (audio) graded readers in one of three learning conditions: (1) listening only (LO), (2) reading only (RO), and (3) reading while listening (RWL). The effect sizes in score changes were compared from the pre-test to each of the post-tests in each group on their comprehension of familiar and unfamiliar texts. The results show an immense effect size for the RWL group, i.e., students in this group were able to comprehend both familiar and unfamiliar texts delivered at faster speech rates and maintain higher levels of comprehension. The performance of the LO group straddled between the RWL group and the RO group. As predicted, the RO group did not show any improvement on the tests. The findings not only support that L2 students preferred simultaneous reading and listening input mode to listening only (Brown et al., 2007) but also that improving listening skills must be practiced through listening instead of reading only. Comparable results were reported by Masrai (2020), who conducted an EL program with 78 university students. Students extensively watched L2 TV programs with L1 subtitles for five weeks. Their listening comprehension, measured by the listening section of the IELTS test, improved significantly from the pre-test to the post-test.

Another study by Yonezawa et al. (2013) examined how much Japanese university students' listening skills changed over the course of a year and also explored the impact of using audio graded readers as listening activities on students' attitudes toward English in general. In contrast to the positive findings of the two studies mentioned above, they found that using audio graded readers had little effect on students' listening test scores. The authors explained that the insignificant improvement was due to the fact that most students were not reading or listening extensively enough. The majority of the students (75 out of the 93 students) read/listen to fewer than 9 books over a semester period. In short, the quantity of listening input was not sufficient to produce any meaningful effect. Another reason could be that the students did EL outside the class time, and it was difficult for teachers to closely monitor students' work. Research has shown that ER and EL do not work simply by teachers' encouragement. As Robb (2002) put it "...in institutionalized settings in many parts of Asia, where the priorities of the students favor extra-curricular activities, such as part-time jobs, clubs and social life, over learning, simple encouragement will not be effective with a large number, and perhaps the majority, of one's students" (p. 146). Perhaps the two aforementioned conditions explained why the effect of EL is minimal. This study hence tried to overcome this difficulty by holding weekly oral reports to check whether students did the listening practice regularly as required.

Improving vocabulary knowledge through EL

Compared to improving listening competence, the effect of EL on improving L2 learners' vocabulary knowledge is relatively scarce. This is because in L2 learning, vocabulary is thought to be mainly acquired through reading, but for L1 learners, listening plays as an important role as reading in increasing their vocabulary knowledge. Can L2 learners also improve their high-frequency vocabulary knowledge through EL? After reading and listening to an average of 35 audiobooks, [Chang's \(2011\)](#) students improved by approximately 266 to 733 individual words as measured by the Vocabulary Levels Test (VLT). Similarly, [Masrai \(2020\)](#) measured students' aural vocabulary knowledge using AuralLex ([Milton & Hopkins, 2005](#)), which is a yes/no test based on the most frequent 5,000 English words. The results showed that students improved by 100 to 800 individual words. Another 12-week EL study was conducted by [Ly and Nga \(2020\)](#) with 80 Vietnamese students. The participants listened to materials recommended by the instructor, and students submitted a weekly EL report. Results, based on the pre- and post-tests on LVLIT, showed that students gained 4.43-word families (52.45/72 → 56.88/72) from the first 3,000 words. Though different instruments were used in the above three studies, they all measured the 5,000 most frequently used words, and results confirmed that L2 learners could acquire vocabulary knowledge through EL. The studies reviewed above seem to suggest that extensive exposure to the high-frequency words through EL can improve not only listening comprehension but also vocabulary size ([Nation, 2006; Du et al, 2022](#)). We now turn to the kinds of materials considered to be optimal for EL practice.

Materials used for EL

One of the ultimate goals of EL is to encourage and assist learners to select their study materials according to their preferences and language proficiency (c.f. [Renandya, 2011](#)). Materials used in many EL studies, however, were determined by the instructor. For example, [Verdugo and Belmonte \(2007\)](#) and [Ivone and Renandya \(2019\)](#) selected digital stories for their student participants; [Chang et al. \(2019\)](#) selected interesting audio-graded readers for their students, and [Yonezawa et al. \(2013\)](#) required students to listen to different audio-graded readers, and [Mayora \(2017\)](#) limited his students to watch only English news report videos. [Bozan \(2015\)](#) used mixed resources, such as movies, TV shows, and documentaries as her students' study materials, and the study showed 61% of the students chose movies as the study materials, 22% chose TV shows, and 8% chose documentaries and audiobooks. All studies showed consistent and positive results from EL intervention. One common characteristic of these studies was that the researchers determined the listening materials for their students. According to [Chang et al. \(2019\)](#), one reason for doing so was that their students' language proficiency was low, and they had little knowledge about how to select their own study materials.

Some researchers allowed their students to freely select their listening materials and recorded the time and the materials they practiced ([Chen, 2016; Milliner, 2017](#)). For example, [Milliner \(2017\)](#) asked his students (n= 20) to listen to six listening texts online and keep listening diaries and logs for the materials that they listened to. After a 15-week period, students submitted 595 entries, an average of 30 entries per student. The most selected websites were ELLO (34%), and ESL Fast (26.6%). In [Chen's \(2016\)](#) study, students (n = 14) submitted only 42 entries during a 9-week period, and 30/42 entries were about TED talks on VoiceTube, YouTube, or TED website rather than from those websites selected by Milliner's students. The two studies, however, did not measure how much students gained from doing EL.

Input modes in EL practice

The effectiveness of EL appears to be closely tied to the input modes used. A variety of input modes have been used in the studies reviewed above. Some studies indicate that L2 learners prefer bimodal input, which combines pictures and prints for better comprehension ([Brown et al., 2007; Chang, 2009](#)). Simultaneous reading and listening mode (also known as reading while listening mode) has been adopted in some studies ([Çakır, 2018; Chang, 2011; Chang et al., 2019; Tragant & Vallbona, 2018](#)). With the advent of the internet, listening combined with viewing has become increasingly

popular (Bozan, 2015; Ly & Nga, 2020; Verdugo & Belmonte, 2007). Bozan (2015) reported that video materials were used by nearly all her students. Indeed, many studies suggest that combining listening with reading print or viewing with subtitles can enhance comprehension, especially for struggling L2 learners (Chang et al., 2019; Singh & Alexander, 2022). However, it should be noted that an excessive reliance on subtitles, particularly L1 subtitles, may diminish the benefits of EL. To counter this, Chang and Millett (2014) suggested that listening should be done solely through listening. Regardless of the input mode used during practice, L2 students should finish the listening task with listening alone (Chang et al., 2019; Tsang, 2022).

The present study

The literature reviewed in the above studies suggests that researchers usually determine or restrict the listening materials used in EL. It is hence unclear what materials students would choose, how frequently they would engage in EL, and how they would practice with their own chosen materials. Some studies simply described what students did but failed to report what students gained from EL altogether. Therefore, it is crucial that researchers monitor students' EL activities and evaluate their language development. To address the gaps in the existing literature, this study aims to address these limitations by allowing students to choose their own listening materials and examining any gains made. The study is guided by three research questions:

1. From what sources (YouTube, Netflix, VoiceTube, etc.) did students select their study materials? How many times and minutes did students practice from the sources?
2. What types of study materials (talks, songs, audiobooks, etc.) did students select for their extensive listening practice?
3. Were there any significant differences in the listening scores of TOEIC and LVLT from the pre-tests to the post-tests?

METHOD

Participants

Fifty-five student participants were recruited from a university of technology from northern Taiwan, among whom 29 were female and 26 were male students. They were sophomore and junior students from various departments. They enrolled in an English listening course, which met 100 minutes per week. The pre-tests on listening comprehension and aural vocabulary (see the instruments section for details) showed that their English proficiency levels were in general at high beginning to low intermediate levels. Before the intervention, the participants were informed that the teaching approach would be EL, and were provided with instruction on the approach. One advantage for selecting these technological students was that English listening was a required course for all of them and they had to take the TOEIC test to meet the graduation requirements.

Research design

All the students received no formal listening instruction, but they were instructed how to do extensive listening on their own, how to select proper listening materials that suited their language proficiency. They were also guided as to how to keep an EL log (in an Excel file), in which they had to record the website links and indicate the materials they had selected for practice (title, time length, times of practice, practice style, their reasons for selecting the materials, and 3-5 keywords they learned from the input). Each week, on the night prior to the class meeting, all students had to upload their Excel files to the TronClass (the university learning platform). At the weekly meeting, each student reported to their instructor about the content they had practiced during the week using either English or Chinese or a combination of both. This measure was taken to ensure accountability on the part of the learners. The summary of the research design is shown below:

Table 1
Summary of the research design

| | |
|--|---|
| Listening conditions | <ul style="list-style-type: none"> • Extensive listening |
| Learning materials | <ul style="list-style-type: none"> • Students selected their favorite audio or audiovisual materials |
| Practice style | <ul style="list-style-type: none"> • Any practice styles that suit them (e.g., listening only, listening plus read scripts, listening plus viewing) |
| Assessment of learning outcome | <ul style="list-style-type: none"> • Test of English for International Communication (TOEIC, 100 items of listening comprehension); • Listening Vocabulary Levels Test (LVLT; 150 items); • A 32-item questionnaire on the perceived effectiveness of EL (not reported in this article due to the space limit) |
| Learning journal information | <ul style="list-style-type: none"> • Materials selected for study; • Practice frequency per week; • Practice styles (listening only; listening plus viewing; reading aloud; shadowing, etc.) • Duration of the selected materials |
| Weekly oral report about study content | <ul style="list-style-type: none"> • Being held weekly |

Dependent measures

The language gains from EL were measured through two tests: TOEIC for general listening comprehension, and LVLT for aural vocabulary knowledge. The perceived effectiveness of EL program was assessed through a 32-item questionnaire (not included in this article but available upon request).

1. General listening comprehension

To assess students' gain in general listening comprehension from the four-month extensive listening, the listening part of a TOEIC test was used. The test contained 100 multiple-choice items divided into four parts. The question difficulty level was gradual: Part A contained 10 items which asked students to select a statement that best described a picture; Part B had 30 items, and questions and options were not presented on the paper. Students had to listen to a question and then select a correct answer to the question asked. Part C had 30 items related to dialogues between two people. Part D contained 30 items, and questions were based on several monologic spoken texts, e.g., announcements or weather reports.

2. General aural vocabulary test (form-meaning connection)

The aural vocabulary test adopted the Chinese version of LVLT (McClean et al., 2015), which contains 150 multiple-choice items: 24 items for each vocabulary level (levels 1-5) plus 30 items for Academic word list. As an example, students may hear a sentence: I have a lot of money. In this case, "money" is the target word and is repeated once. Subsequently, students are required to choose the correct meaning of the word from a set of four. The purpose of the test was to determine whether students acquired new high-frequency words from the listening practice.

Marking and data analysis

The general listening comprehension tests (TOEIC) and LVLT were in multiple-choice format. Each correct answer was awarded one point. There were 100 items and 150 items on TOEIC and LVLT respectively. The data collected from learning journals were mainly frequency counts (e.g., how many times they did EL) and categories (which websites they visited; the type of program they viewed or to which they listened). The SPSS version 27 for Windows was used to analyze the data. To answer the first and second research questions, frequencies were tallied up and then converted into percentages.

To answer the third question, regarding students' learning gains, t-tests were used to compare students' change between the pre-tests and the post-test.

RESULTS AND DISCUSSION

Overall results

Table 2 shows that the total practice time by 55 students (counted by one view or one listening) is 76,259 minutes, and an average of 1,387 minutes per student, which led to approximately 87 minutes per week per student. The total practice times for all the student participants were 1,556 counts, a total of 28 times per student and 1.75 times (28 times/16 weeks) per week.

Table 2

Mean of total time (counted only once per practice) and the number of times each student practiced

| | N | Mean | SD | Sum |
|----------------------------------|----|-------|-------|--------|
| Total practice time (by minutes) | 55 | 1,387 | 2,009 | 76,259 |
| Total times (by frequency) | 55 | 28 | 25 | 1,556 |

From what sources (YouTube, Netflix, VoiceTube, etc.) did students select their study materials? How many times and minutes did students practice from the sources?

Table 3 shows the sources used by students for selecting study materials. The data shows that the most frequently visited site was YouTube, with 41 out of 55 (74.5%) students having selected materials from it. The next most popular site was Netflix, with almost half (49.09%) of the students having visited it. Some students (43.63%) also visited other sites such as Bilibili.com, Soundcloud.com, Music.apple.com, MyVideo, LiTV, and B-Station. However, three students expressed dislike for online materials and instead opted to listen to audio graded readers borrowed from the library.

Students visited YouTube 742 times and Netflix 350 times, but in terms of the total time spent on each site, they spent 33,522 minutes on Netflix, 13,843 minutes on YouTube, and 11,038 minutes on other websites. Although students watched programs on YouTube more often than on Netflix, the total time spent on Netflix surpassed that of YouTube. This is because some programs (mostly songs) on YouTube lasted only a few minutes, but movies or drama series on Netflix were much longer.

Compared to previous studies, the students in the present study did much more practice in terms of total time and frequencies. One of the main reasons could be that their practice time and frequency counted 50% for the listening course grade. Other researchers also gave credits for their students' efforts in doing EL practice, but the weight of EL activity may not be significant enough to affect their course grade. For example, Chen gave 20% to students' final grades if they completed three listening diaries, but only 14/24 of the students completed the requirement. Milliner (2017) counted only 10% toward students' course grades for their EL practice, and each student uploaded 2 listening logs per week, but the total time was unknown. Mayora (2017) also gave credit for students' EL practice, but each student watched an average of only 4 minutes of new videos per week. It is apparent that the weight of EL counted for students' final grade plays an important role. For students who are satisfied with just passing their course, the time-consuming nature of EL practice may not be a top priority.

Another probable reason for students doing more practice was the required weekly report on what they had studied. This requirement may have motivated the students to work harder on their EL practice. Because no formal listening instruction was given to the students, the allocated class time was used to listen to students' weekly reports. Students could also finish part of their work in the class. In their report, students had to describe the content and also provide a few key words they had heard from the practice. Listening to students' individual reports is very time consuming, so in other studies, researchers asked students to answer a few questions to confirm their practice (e.g., Mayora, 2017). Regardless of which approach researchers adopt (e.g., submitting listening diaries; answering questions, or doing oral reports), instances of cheating by students are inevitable (see Tagane et al.,

2018). Researchers can only minimize dishonesty by emphasizing to learners that they are engaging in activities that benefit themselves, and not to waste their time by submitting fraudulent listening diaries just to fulfill course requirements.

Table 3

The sources students selected their study materials (by times and minutes)

| Websites | Total times that students visited each website | Total time spent on each website (by minutes) | Total number and percentages of students who visited the websites (n =55) |
|--------------------|--|---|---|
| VoiceTube | 21 | 117 | 5 (9.09%) |
| YouTube | 742 | 13,843 | 41 (74.55%) |
| Gimy | 9 | 4,170 | 3 (5.45%) |
| Netflix | 350 | 33,522 | 27 (49.09%) |
| Disney | 12 | 648 | 2 (3.64%) |
| Disney + | 24 | 6,124 | 3 (5.45%) |
| Imaple | 3 | 345 | 3 (5.45%) |
| Spotify | 4 | 34 | 3 (5.45%) |
| TED | 131 | 1,453 | 5 (9.09%) |
| Off-line materials | 91 | 2,764 | 3 (5.45%) |
| Others | 146 | 11,038 | 24 (43.63%) |
| PPiPlay | 12 | 1,482 | 2 (3.64%) |
| 777tv | 11 | 719 | 2 (3.64%) |
| | 1,556 | 76,259 | |

What types of study materials (talks, songs, audiobooks, etc.) did students select for their extensive listening practice?

The second research question explored the types of study materials students practiced. Table 4 shows that 63.64% (or 35/55) of the students listened to songs at least once, 49.09% watched movies, and 43.46% watched formal talk shows, e.g., TED. About one-third (34.55%) practiced listening to other types of talk shows, such as video game strategies or fixing a flat tire, and 30.91% watched online English teaching programs. Despite there being a large proportion of students listening to songs, the total time for listening to songs was much less than the time spent on watching drama series and movies. The calculation of total practice time assumed that each student practiced only once, and this assumption is valid for students who watched complete episodes of a drama series or movies, which can last for more than 90 minutes or even several hours, and students normally could not afford the time to watch them twice. Listening to songs seemed to be an enjoyable supplementary activity in their learning practice because songs usually last only 3-5 minutes or even less, and many of the students usually included listening to one song in their weekly practice for entertainment, but they did not keep track of the number of times they had practiced.

Students' selections were very diverse. Most students selected three or four types of study materials. Some students, however, stuck to only one type. For example, two students watched movies throughout because they loved movies. Another student watched only TED talks on YouTube. In the weekly report, this student reflected that it was easier to stick to the same learning materials because Google often recommended materials related to the one the student had previously viewed earlier, so she did not have to spend time looking for new materials. The other student listened to only songs because he majored in pop music. Some students, however, selected the materials based on their interests. For example, one male student was interested in playing video games, and he watched shows on how to win video games. Another student wanted to become a pilot, so he watched numerous programs related to aviation mechanics.

There were five students who seemed to show no interest in anything. Their goal was to fulfill the teacher's requirement: to practice English for two hours per week. This type of students usually switched from one program to another every week without a focus. In their weekly oral report, they often reflected that they did not know what to do, so they just watched any online English teaching programs, cartoons or whatever that came to mind. In general, the language level of this type of

students tended to be lower than those who knew what they wanted to listen or those who enjoyed doing narrow viewing (i.e., watching programs on the same topic or genre).

Compared to previous studies, this study revealed a broader picture of students' preferences in listening. Many previous studies indicated that the researchers restricted their students to selecting study materials from a set of recommended websites. For example, the study by Milliner (2017) showed that his students selected listening materials only from the websites for learning English, but in this study, online teaching programs designed for L2 learners accounted for only 3% (2,289/76,259) of the total practice time, whereas movies constituted 33%. Thus, while online English teaching programs have their utility, they may not be as appealing to the students as other materials (e.g., movies and talk shows). The results of the present study corroborated Bozan (2015) that movies were the most favorite material if students had choices. This however does not mean that movies are the most optimal materials for English language learning. The presentation format of the programs also influenced how students selected their materials. With modern online programs, they can be viewed with different language subtitles. Since many students in this study had lower language proficiency, they preferred programs with subtitles.

Table 4
Descriptive statistics for the total time, total times and practice types of EL

| Types of study materials | Total number of students who did the types of practice | Total time that students spent practicing the types (by minute) | Total times that students did the types of practice (by frequency) |
|---|--|---|--|
| Drama series, e.g., <i>Breaking Bad</i> . | 16 (29.09%) | 29,752 | 302 |
| movies | 27 (49.09%) | 25,441 | 248 |
| Off-line materials | 3 (5.45%) | 2,728 | 88 |
| Cartoons | 5 (9.09%) | 1,542 | 20 |
| Formal talks | 24 (43.46%) | 4,770 | 283 |
| Songs | 35 (63.64%) | 6,769 | 326 |
| TV serial shows (sit-coms) | 5 (9.09%) | 718 | 15 |
| Online English teaching program | 17 (30.91%) | 2,289 | 133 |
| Show talks | 20 (34.55%) | 2,250 | 141 |
| Total | | 76,259 | 1,556 |

Were there any significant differences in the listening scores of TOEIC and LVLT from the pre-tests to the post-tests?

The third research question examined the language gains (if any) students made after a period of 4-month intervention. As shown in Table 5, in the pre-test of TOEIC, students answered 48/100 items correctly and 53/100 items in the post-test; the difference was statistically significant. Similar gain was found in the LVLTs; on average, students gained 5 points in the post-test (90→95), and the difference in the pre-test to the post-test was also statistically significant. Although p values on both tests were statistically significant; the effect sizes for TOEIC and LVLT improvement through EL were small, $d = 0.32$, and $d = 0.27$ for TOEIC and LVLT respectively (see Plonsky & Oswald, 2014).

The minimal improvements in both post-tests may be due to some students experiencing regression. The TOEIC test in Table 6 shows that 12 students regressed, and 5 scored the same, and only 38 students showed progress between pre- and post-tests. As for the LVLT, 20 students regressed and 35 students progressed. The decline in the performance of some students may have offset the average progress points. Despite the deterioration of some students' performance, two thirds of the students managed to improve their listening comprehension and aural vocabulary knowledge. During the four-month intervention, it should be expected that there will be some improvement in the students' listening comprehension and aural vocabulary, or at the very least, that they will maintain their current levels.

However, we feel that rather than focusing on the reasons for progress, it is perhaps more important to investigate the reasons for any deterioration in performance among certain students. Based on their weekly oral report of their practice, we found the following reasons for their regression or little improvement. Firstly, some students did not choose appropriate materials to study. They selected some materials that were far above their levels, so they had to overly rely on Chinese subtitles. This was confirmed from their weekly oral report because all the proper nouns were spoken in Chinese, and students could not mention even a few key English words or phrases they had picked up from the practice. Secondly, some students were unable to determine what topic areas they were interested in or recall what they had listened, leading them to randomly listen to anything they came across. Thirdly, some failed to engage in genuine practice and instead resorted to plagiarizing content from the internet to complete their listening logs. Finally, some students watched video clips in Chinese, Japanese, or Korean instead of English, which hindered their progress.

Compared to some previous studies that had also investigated the language gains from EL, we found that the gain of LVLTT corroborated Ly and Nga (2020), whose students gained an average of 4.43 family words after a three-month EL intervention. Although both studies used LVLTT as a measurement, Ly and Nga measured only the first 3,000 words, whereas the present study made use of the complete test. In addition, students in Ly and Nga's (2020) study had many English hours every day; it is, therefore, difficult to determine the pure gain from EL. The students in the present study received little additional English instruction, so any learning gain made could be largely attributed to their exposure to English via EL than through other means.

For the listening comprehension gain in the TOEIC, if the raw scores are converted to real scores (one item is equal to approximately 5 points), students in the study gained an average of 25 points. Compared to students who listened to audio graded readers in the Chang and Millett's (2016) study, the students in the present study made smaller learning gains. The students in the Chang and Millett (2016) study listened to 10 audio graded readers and finished 10 sets of extended fluency questions gained an average of 45 point in their TOEIC whereas those who finished 15 audio graded readers and 15 sets of listening fluency questions gained an average of 80 points. The substantial differences in listening gains between the two studies may imply the importance of students finishing listening tasks by actually listening to materials that have been carefully graded according to their proficiency levels.

Table 5

Students' performance in the pre-tests and post-tests of TOEIC (Max Score=100) and LVLTT (max score=150)

| Tests | Mean | SD | Minimum | Maximum | t-test |
|------------|-------|-------|---------|---------|------------|
| pre-TOEIC | 48.13 | 14.94 | 26 | 82 | $p < .001$ |
| post-TOEIC | 53.04 | 15.49 | 29 | 84 | |
| pre-LVLTT | 90.04 | 18.40 | 56 | 139 | $p < .01$ |
| post-LVLTT | 95.20 | 20.38 | 49 | 142 | |

Table 6

Students' progress and regress points between pre-tests and post-tests of TOEIC and LVLTT

| | TOEIC | LVLTT |
|------------|-------|-------|
| > +20 | 2 | 4 |
| + 16 — +20 | 4 | 4 |
| + 11— +15 | 6 | 5 |
| + 6 — +10 | 11 | 13 |
| + 1 — + 5 | 15 | 9 |
| + 0 | 5 | 0 |

| | | |
|----------|---|----|
| -1— -5 | 9 | 11 |
| -6 — -10 | 0 | 5 |
| > -10 | 3 | 3 |
| > -20 | 0 | 1 |

Pedagogical implications and suggestions

The results presented above show that most of the students (38/55) made statistically significant improvement after a four-month intervention of EL; but the overall effect sizes for both aural vocabulary and listening comprehension were very small. From students' language gains, practice time, practice frequency and the materials selected, the results may have some implications for implementing EL in an L2 context.

1. Although the EL study lasted for a period of four months, it did not mean that students did the practice every day or many times a week. Students spent only an average of 87 minutes per week (or 11 minutes per day and 1.75 times per week) doing EL practice. While doing EL practice, not only the total time but also the frequency of practice is of importance. If students could divide 87 minutes into four times, each time students spent 22 minutes, the language gains might have been different. To improve the effect the EL, increasing the frequency of practice is essential; that is, students should practice EL many times a week instead of doing an hour-long practice once a week.
2. Although students preferred to select their own learning materials, many of their selected materials, such as movies, were far beyond their language proficiency level and, as such, they had to overly rely on L1 subtitles to comprehend the input. Because of this, the students in our study were unable to enjoy the benefits of listening extensively to interesting and comprehensible materials. A three-stage implementation of EL is therefore suggested. Instead of asking students to determine their own materials right in the beginning of the intervention, perhaps it would be more appropriate to start with the materials or websites determined by the teachers, then gradually integrate teachers' and students' suggested materials, and finally students can fully decide their own study materials.
3. To enhance learning gains from EL, it is suggested that EL can be integrated with other courses such as writing and speaking. Encouraging students to produce language based on what they listen to and watch, may lead to increased focus on comprehending the content and language being used. By reproducing what they have heard or seen, students get the chance to practice using newly acquired language in appropriate contexts and reinforce their understanding of it.

CONCLUSION

The four-month EL intervention painted a broad picture of students' preferred websites, learning sources and materials. The two most popular websites that students visited were YouTube and Netflix, from which students listened to songs and talks, and watched movies. Due to students' relatively low listening proficiency, nearly all the students had to rely on both Chinese and English subtitles. The small effect sizes in TOEIC and LVLIT show that EL, like ER, takes a long time for one to see their effects. A period of four months, with less than 1.5 hours and fewer than 1.75 times per week of intervention is not sufficient to see a large effect of their language advancement.

Despite the modest improvements observed in the TOEIC and LVLIT scores, there were likely other unmeasured benefits of the intervention, such as enhanced pronunciation and speaking skills among students. In the weekly report, for example, one student showed a great deal of improvement in their pronunciation from the first week to the last week; in addition, many students became more confident in speaking English during their weekly oral reports. These potentially important benefits

of EL are worth investigating in future studies that examine the impact of EL in second language learning, in particular for lower proficiency students.

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CONFLICT OF INTEREST STATEMENT: The authors declare that the research was conducted in the absence of any potential conflict of interest.

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