



Untie Their Hands: Using Self-paced Reading-Listening for L2 Reading Proficiency Gains

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ABSTRACT

Benefits for L2 reading through offering learners extensive reading with listening have been found in empirical studies, but those findings may be under-utilized in academic English preparation settings, due to prioritized test practice in response to high-stakes testing for university matriculation. Self-paced extensive reading with listening outside class might present an option, however, outside reading with adjustable listening support remains little-investigated for transferable benefits to academic English preparation. This gap is a concern for learners navigating present-day learning environments, characterized by turbulence and the need for self-reliance. This preliminary study was designed, therefore, to investigate for possible effects of self-paced reading with adjustable audiobooks online, outside the classrooms of an academic English preparation program. Questionnaires and reflections suggested progress towards greater ease and competence with near-academic reading. Standardized testing (TOEFL ITP) scores showed a slight gain in 6 – 8 weeks, with averages compared to a control, and without statistical significance. Evaluations also suggested a majority of the participants felt improvements in their vocabulary.

INTRODUCTION

Many language learners, and indeed, language teachers, might recall being directed in language classes to “Listen to the cassette and read, then answer the following questions” or, “Read along while listening to the recording” (Sakurai, 2018). The pace was usually wrong, whether too fast or too slow, and some researchers suggest that mis-paced input might contribute more to foreign language-learning anxiety than to foreign language learning (Renandya & Farrell, 2011; Sakurai, 2018).

Yet second and foreign language learners still struggle in reaching fluency and reading proficiency, especially in environments where little of the language is heard except when intentionally sought out (Lin, 2012; Renandya & Jacobs, 2016; Walter, 2008). Writing about attempts to silently read a foreign language without having heard it enough, Teng (2016) observes, “learners tend to break sentences into incoherent parts while reading, which not only breaks the integrity of the written texts, but may also lead to a failure in understanding” (p. 3).

What’s been missing? Aural input, phonological processing, and L2 reading

Though the method with mistimed cassettes backfired, a crucial, but often missing piece for second and foreign language literacy is listening. Progress in cognitive research has since clarified that sufficient listening to assist building print connections to aural memory precedes smooth reading (Stephens, 2016; Wagner et al., 2019; Walter, 2008; Wolf, 2018). Recent studies have, furthermore, found this basic cognitive building plan holds true across diverse writing systems, for both initial literacy and biliteracy (Bolger, 2007; Geva et al., 2019; Hanford, 2019; Kilpatrick, 2015; Masuhara, 2007; Perfetti, 2003; Wagner et al., 2019; Verhoeven & Perfetti, 2021). Moreover, investigations indicate that beyond the necessity for the two modes to be provided, phonological and print input provided together may integrate to greater effect in the brain, “creating more efficient and effective language learners” (Cheetham, 2017, p. 180).

Literacy-building, autonomy, and MALL for language learners on the move

While cognitive research into reading development has made gains, learning conditions for language students have been undergoing dramatic changes characterized by the need for strong self-reliance in sometimes difficult situations; access and language education challenges undeniably grew during pandemic lockdowns (Maican & Cocoradă, 2021; Çakmak, 2022a). Whether circumstances allow classroom meetings or not, researchers have found that supporting effective autonomous learning involves customizing challenges to learners’ abilities and needs, then balancing student-managed learning with opportunities for interaction, discussion, and collaboration (Maican & Cocoradă, 2021; Ruegg, 2018). One positive, concurrent development is the variety of learning technologies being created. Sometimes called MALL (mobile assisted language learning), their content, flexibility, and control for students are being improved (Çakmak, 2022b; Praditsorn & Ulla, 2022). Mobile online programs devised for L2 reading, which consider current research in their development and both instructor and student needs, are also appearing, with some generating a number of positive reviews and further research, such as Xreading.com (Nation & Macalister, 2021; Nation & Waring, 2020; Robb 2018; Wilkins, 2019; Zhou & Day, 2021).

High-stakes exams

Though learning conditions have transformed (Çakmak, 2022a), high-stakes standardized tests are still prominent requirements for mobility, playing a role in applications to universities in English-speaking countries and for visa, immigration, and other needs (ETS, 2021; IELTS, 2022). Generally mimicking a range of university-related activities to test proficiency with academic English, target scores (often 500 points on the TOEFL ITP) are often also set, in practice, for study abroad programs, scholarships, English-medium university courses in home countries, and sometimes as exit requirements for stages of undergraduate programs. Within the range of tests, the TOEFL exam is one of keen interest to researchers, due to both its prevalence and influence on future academic participation for English learners (Golubovich et al., 2018; Kawachi-Furlan et al., 2017; Wang, Y., 2019; Wang & Huang, 2020).

Independent studies showing improvement on the TOEFL via test-focused instruction in EFL contexts are difficult to find. Moreover, Lanteigne and Sulieman (2021), recently documented score rises to be found with greater spacing between TOEFL tests, and inverse results – scores dropping – with frequent testing. Valuable research on test washback from intensive preparation for the TOEFL ITP has been carried out in the U.S., however, by Wang and Huang (2020) and Wang (2019). Evidence in their investigations showed that commercial exam preparation materials and practice drills for receptive content and grammar items offered

very mixed results, with scores falling as well as rising, despite student effort and motivation (Wang & Huang, 2020). Of further concern, these studies documented declines in both communication practice and enjoyment (Wang, 2019).

Extensive reading with listening, and vocabulary learning

Another route toward greater proficiency being explored by a number of researchers is extensive reading interventions making temporary use of audiobook support (bimodal input). Recent extensive reading research carried out with students provided reading with listening paced appropriately to their levels, or with the pace controlled by the students, found that learners could significantly improve reading on a variety of measures, such as reading comprehension, reading rates, vocabulary, and motivation (Chang & Millett, 2015; Isozaki, 2022; Sakurai, 2018; Teng, 2016; Tuzmagambet, 2020). Questions regarding transferability to unsupported reading have been voiced (Aka, 2019b), and though delayed post-test results have been strong (Chang & Millett, 2015), further study may be valuable.

Other concerns may involve the gaps separating graded reading materials from the academic vocabulary necessary to grapple with high-stakes exams or to participate in university courses, since beginning at the lower graded reading levels may be necessary, initially, for ease and comprehensibility (Day, 2015; Nation & Waring, 2020). Recently, Green (2020), citing findings which indicate extensive reading may have considerable potential to help students raise their vocabulary knowledge, carried out a corpus investigation of vocabulary in extensive reading and viewing materials, focused on possibilities to improve academic vocabulary through extensive reading and viewing. His analysis found that a great proportion of the vocabulary required for comprehension of high school academic texts, across subjects, is made available via extensive pleasure reading and viewing, though attention to specialized vocabulary is still needed (Green, 2020). Green (2020) and others researching possibilities for vocabulary improvement through extensive reading emphasize, however, that providing enough levels and interest areas for reading is an issue to consider carefully (Bui & Macalister, 2021; Krashen, 2011; Nation & Waring, 2020).

Unanswered questions and the present study

Considering the long-observed issues for learning to read in a second or foreign language without adequate listening opportunities, ongoing disruption and transformation in learning environments, and the continued need for students to demonstrate language proficiencies on internationally accepted exams, recent research progress may offer some routes for exploration. The above studies have suggested that L2 reading with listening support, incorporating mobility and learner control, and providing extensive reading and listening over many levels and interest areas may benefit L2 readers. That it is unknown whether combining these elements might also be helpful, leaves a gap in the literature. The present mixed methods study therefore was designed with these integrated elements, to explore for possible influences for foreign language learners' reading as they prepared for English university coursework.

Although studies to date discussed above focused on a variety of reading-related skills, the present study sought to investigate toward the most pressing concerns for learners in the context of the present study. These were skills with pre-academic reading, TOEFL ITP testing, and vocabulary. The questions in the present short-term intervention, using online extensive reading and self-paced listening, were therefore:

1 a: Will participants find improvements in unsupported English reading, after a short-term

intervention with extensive reading and self-paced listening?

1 b: What changes, if any, will be noticed in reading skills relevant to academic reading and testing needs?

2: What differences in TOEFL scores may be found by comparing the score changes of a control group preceding the intervention, with the intervention participants' score changes?

3: Will vocabulary growth be perceptible to participants?

METHOD

Participants and Context

Students participating in this study were enrolled in an intensive English university preparation program (academic English), in an urban setting in central Japan, with English classes each weekday. Almost all were recently graduated from high school, and needed to reach 500 points on the TOEFL ITP exam as a prerequisite to joining the English-medium courses of the university (based in the U.S. with a branch campus in Japan). The curriculum was designed to build overall academic English skills so students could participate successfully in the university's English-medium subject classes; most students hoped also to study abroad or work internationally in the future. Aspects of the curriculum such as textbooks, testing, assignment types and frequency, and homework time were standard across all courses.

The present research took place during four university terms (near-15 weeks each term) as part of a larger study focused on various aspects of reading fluency development, with application submitted to the Institutional Review Board and permission received, and with identities and personal information strictly protected. The interventions were incorporated within the terms October 2018 – December 2019, and participation in the research or not had no influence on grades. Each term's intervention began and was carried out with identical procedures, beginning with full explanations, and voluntary consents requested and received from all participants, who were kept informed of the research underway and were able to withdraw at any time.

Materials

Extensive reading books and audiobooks were available to the students through an online platform which offered over a thousand books from multiple publishers, from beginner through advanced levels (Xreading.com: see Appendix A). The instructor could assign shared or independent reading, and the platform functions facilitated both student and instructor verification of time spent reading, time spent listening, and titles read. Audio was enabled by a mouse click and could be played at a range of speeds to suit each student.

Intervention procedure

The proposed short-term intervention, pairing extensive reading with self-paced listening, was introduced and explained in depth to the students. Most students had previously heard that extensive reading was useful and that they should put efforts into, typically, silent reading of graded readers (Day, 2015). Most had tried at least a little. The suggestion to do reading while listening to the matching audiobooks and to change audio playback speeds to suit

their individual comfort was new, and the instructor summarized relevant studies to clarify the reasoning behind this unexpected suggestion.

Considering the students' pressured daily schedules, however, and the requirements of a set curriculum to meet, the instructor asked students if they thought it might be of interest to see if they could also find benefits by carrying out reading and listening in locations and at times they wished. The fact that, to date, it was unknown whether this would offer the benefits found in previous studies' supervised, on-site research was discussed directly as well. This summarizing of the relevant research, and sharing what questions had not yet been answered, was undertaken for fully informed consent and for student autonomy.

Listening to audiobooks while reading was begun by accessing the Xreading site and logging in, with a brief demonstration and troubleshooting on the variety of devices the students preferred to use. Care was taken to ensure that students both knew how to set audio pace to match their individual needs, whether slower or faster, or could separate their bimodal input; listening or reading first, following with the complementary mode. A short and easy book was selected online and the opening audio – adjusted slower and faster – played; students then completed the book independently, on their own devices.

Initially, shared books were introduced for outside class reading and listening. This was to make sure the first books were from manageable levels and could be completed smoothly by all, such as the popular Cengage Page Turner stories with university student characters, which could be completed (estimating time requirements with audio at normal speeds) in less than thirty minutes. Previous studies in the literature with both empirical improvements and positive perceptions reported by learners about their reading and listening experience involved completing between 10 and 30 graded readers, depending on the length of the books chosen (Chang & Millett, 2015; Sakurai, 2018). The instructor encouraged students to complete books in a similar range, allowing for autonomy and recognizing that the students had a range of skills and feelings regarding reading. As the students began to feel changes in their reading, there were also short consultations to help match their genre preferences, suit higher reading levels, or further fine-tune their bimodal input in response to their reading development.

As seen in Table 1, in the ninth or tenth week of each term, students took the TOEFL ITP exam. This fell within the sixth to eighth week of the reading and listening interventions. Self-paced bimodal reading continued for approximately two weeks after the exam. Participants were then asked to complete short questionnaires about changes they may have observed in their reading and vocabulary (Appendix B).

Table 1. Procedure and Schedule Summary

Procedure and Schedule: repeated, four terms
1. TOEFL ITP exam as placement test (new students) or post-midterm assessment (continuing students).
2. University break (approximately one month).
3. Term commencement, course work begun (term durations: approximately 15 weeks each).
4. Second or third week into term: self-paced bimodal reading interventions introduced, permissions requested, and reading and listening with graded readers (via Xreading, online) begun.
5. Reading and listening with notetaking, etc. (outside class, as part of the homework time recommended across the curriculum): continued in cycles and in increasing levels of challenge. Troubleshooting, peer discussions and instructor support through term.

6. TOEFL ITP exam (6 – 8 weeks into the interventions, ninth or tenth week of term).
7. Self-paced bimodal reading interventions continued (one or two more weeks).
8. Reading and listening intervention “project” wrap-ups, post-intervention questionnaire and reflections – week 9 or 10 of interventions (Appendix B).
9. Preparation for and carrying out program courses’ final exams.
Intervention Length: (Number of weeks from introduction to completion) Term 1: 9 weeks, Term 2: 10 weeks, Term 3: 9 weeks, Term 4: 10 weeks.

Measurements and analysis

End of term questionnaires and reflections

All questionnaire responses and reflections were collected on paper and first counted by hand. The total collected ($n = 126$), differed from participant TOEFL score sets by one, due to an absence on the questionnaire response day; participation in all aspects of the present study was voluntary. The collected responses were next input into digital files (password protected) exactly as written, and counts were reconfirmed. Manual, digital, and keyword searches were conducted with a variety of spellings to cross-check responses to specific items.

Test comparison groups

Score changes found on the TOEFL ITP exams in the present study were compared with TOEFL ITP score sets in the same program predating the present study. With participant permissions, score sets (pre-term and during the intervention) were received, anonymized ($n = 127$), and point changes were found and averaged together. Anonymous score sets from the same program and course levels in the years immediately predating the intervention were also averaged ($n = 674$, from exams held 2014 – 2018). The score sets were compared and analyzed with Excel.

With the planned curriculum and the matched levels, consistency between the comparison groups could be expected. Extensive reading was available (paper or online) in the setting as an optional but encouraged supplement through both the years of control and interventions. Audiobooks paired with extensive reading and with adjustable playback rates, as had become available on the Xreading site, had not been actively used previous to the present study. This was confirmed with participants and further verified through the records of previous reading work, online.

Testing (TOEFL ITP) was conducted at regular intervals due to the standardized exam scheduling. The present study’s comparison score sets could therefore show matched durations of program participation by students between the tests.

The decision to compare score sets from the years immediately previous to the interventions with score sets from the current study was also intended to fulfill some important conditions. As discussed by Aka (2019a), “Creating a control group is one of the challenges faced when conducting a study in an authentic classroom setting due to the ethical issue of providing students with different instructional contents” (p. 5). In the present study, the time-divided sets helped ensure that the present study would not be influenced or cause influence while it was underway, and second, that all students experienced the best teaching of their instructors while following the set curriculum guidelines.

RESULTS

1. Other English reading, and changes noticed in skills related to pre-academic reading

Through each of the four terms the average number of graded readers completed was between 17 and 24 books, reflecting the wide range of levels and book word counts but reaching the encouraged range. However, the question: “Do you think the project helped with any of your other English reading?” was intended to seek changes noticed in academic English preparation. Counted among affirmative replies (ex: “yes” and “better”) some participants described their changes with other English reading skills: “Skimming the text was improved,” or, “I can understand what I am reading deeply.” Some replies to this questionnaire item were positive about the intervention or about their changes in reading skills but were not addressing reading *other* than the extensive reading, and were, along with blanks, therefore not counted in the affirmative category. Examples of such positive but excluded responses had wordings such as “reading with audio is comfortable for me.”

Affirmatives to the questionnaire item regarding *other* English reading totaled 82.5% ($n = 104$ from 126 collected questionnaires). Additional statistical analysis was not conducted on this research question because with the small sample, and the high motivation of the students in the present study, these exploratory results were not expected to be more than correlative and limited to the present setting.

Further reflections in addition to the “yes” and “no” replies, regarding changes noticed in reading skills, were re-examined and grouped by theme. Among these, comments found specifically relevant to their academic reading and testing needs were: Confidence and efficacy, Transfer to unsupported silent reading, and Concentration.

Confidence and efficacy

“I think I became different than before. It helped my TOEFL reading.”

“I feel more confident.”

“I could catch the Main Point. When how, where, what, why.”

Transfer to unsupported silent reading

Some students wrote that their increased skills carried over into other courses’ silent reading work:

“In [another] class, I can read whole papers without stopping”

“I can understand article easily more than before.”

“[I can] read a newspaper in English”

“[Another instructor’s] homework is [a print newspaper for ESL students]. I can more smoothly read.”

“I can read news more fluently.”

Concentration

Changes in reading concentration, relevant to both testing and academic reading expectations in university classes were mentioned by some students:

“I think my reading skill improved a lot because when I was in high school, I didn’t like reading books which have long story.”

“[Now I have] stamina to keep reading English”

“The last TOEFL day, I did not suffer reading section → can keep concentration.”

“Before entering [name] University, I had never read an English book ... I read about thirty books when I noticed it, I was surprised. ... I want to continue from now on.”

The high quantity of reading through the nine or ten weeks (possibly indicating sustained motivation), reflections on changes in their English reading, and comments regarding improvements transferring to silent reading with stronger concentration may tentatively suggest a number of perceived positive effects.

2. TOEFL ITP scores

What differences in TOEFL scores may be found by comparing the score changes of a control group preceding the intervention, with the intervention participants' score changes?

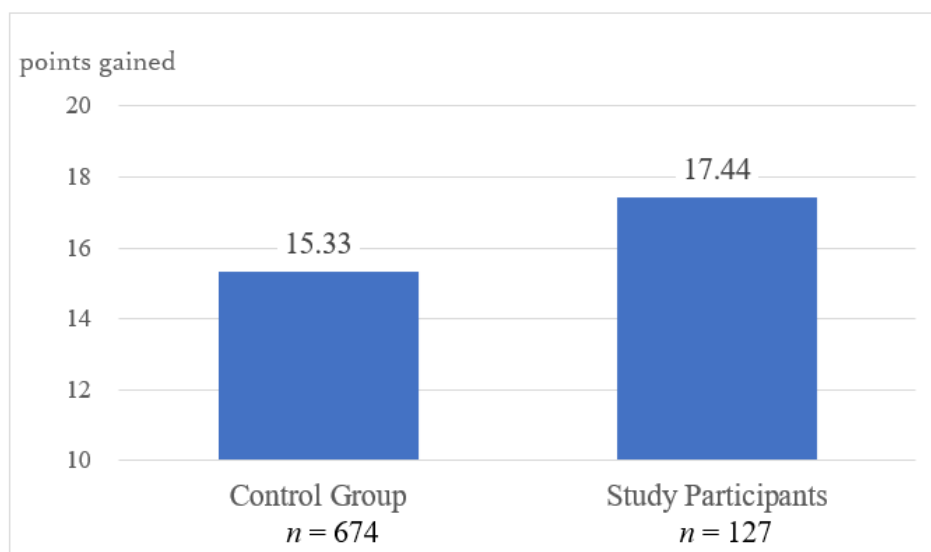
Score changes from matching levels of the program, preceding the present study, were averaged to find the typical point rise without the interventions. These were compared to the changes from the previous exam taken by the present study's participants with their exam results during the intervention.

As shown in Figure 1, the average score change for the control group was a 15.3 points gain ($n = 674$). The average score change of participants ($n = 127$) showed a gain of 17.4 points. The overall average score rises of both control and participant represented improvement beyond the standard error of measurement in reliability, according to the test maker, which is 13 points (ETS, n.d.).

Table 2, below, shows the mean and standard deviation (SD) of the control and the participant groups. The mean difference between the two groups for the change of scores in one term did not indicate significant difference between the comparison groups ($t(799) = -0.12$, $p < 0.45$). The effect size as measured by Cohen's d also indicated the difference between the two groups to be very small ($d = 0.12$).

Table 2. Control Score Changes, Compared to Participant Score Changes:
TOEFL ITP Exam

	Control Group			Study Participants			t	p	Cohen's d
	M	SD	n	M	SD	n			
Score changes	15.33	29.79	674	17.44	26.15	127	-0.12	0.45	0.12

Figure 1. TOEFL ITP Score Gains (averaged): Control and Participants

3. Vocabulary

Will vocabulary growth be perceptible to participants?

To learn if students may have perceived gains in their vocabulary, they were asked if they felt improvements, and if so, why. Positive answers (“Yes,” or “Maybe yes,” or, “Yes, because I learned so many new words”), were counted on the affirmative side. Negative, noncommittal (“No,” “No, actually,” or, “I’m not sure”), and all blanks as well, were counted together as negative responses. Due to the present study’s small size and the question investigating for perceptions, this was not expected to provide generalizable results, and was therefore not treated with further statistical analysis.

Eighty percent ($n=101$ of 126) wrote that they felt their vocabulary had improved. Some participants added observations, emphasis, or clarifications, for example:

“Yes! I could learn from readings!”

“...I read some kind of genre, so I could collect and understand more vocabulary.”

“...because I learned new vocabularies though the x-reading...”

“...I got many new words from books.”

“...because I could learn a lot of academic vocabulary.”

“...I learned many vocabulary from books.”

“...when I read English, vocabulary that I have seen is increase.”

“...because I got the words completely.”

Among the negative replies were:

“No. I skip difficult words when I read books.”

Reading and listening tied to developing vocabulary for writing

Some students who had less previous experience with using English before joining the program, and were completing a first term at the beginner level, noticed and commented on

connections they felt between their vocabulary development and greater ease in writing. In answer to whether they felt improvements in their vocabulary and why, these participants wrote, for example: “Yes, because I could read and make sentences more smoothly than before.” Others wrote: “At first, my reading and listening speed was very slow. I didn’t know enough vocabularies to read fluently. Now I can write many sentences,” and, “When I write English I feel less difficulty.” Though unexpected and not specifically investigated in the research, these responses may suggest that some learners found concentrated bimodal meaning-focused input (Nation & Yamamoto, 2012) helpful in building their store of vocabulary to draw upon, when writing.

DISCUSSION

Consolidation of reading skills and transfer to unsupported silent reading

One of the skills for which evidence was sought in this exploratory study of temporary audio support was transfer to unsupported silent reading. While improvements felt with extensive reading materials were expected and welcome, as found already in other investigations (Chang & Millett, 2015; Tuzmagambet, 2020), the first research question was intended to learn if participants might find changes in their other, non-extensive reading. As discussed in Padberg-Schmitt (2020), self-paced reading with audio input under learner control may offer an efficient route toward consolidation and competence with reading silently. Beyond testing, first-year university courses require large quantities and diversely-sourced reading for understanding and also for digesting, comparing, and critical evaluation (Karakoç, et al., 2022). Overall, a majority of the responses were positive (82.5%). A number of participant comments quoted above suggest that, though these interventions were only nine to ten weeks, they could notice improvements. Some also mentioned increased confidence with news reading in English; vital for global citizens as well as for university coursework. Other reflections touched on concentration when reading, tentatively concurring with previous extensive reading and listening research which found that audio-assisted reading had helped with stronger focus on the stories (Chang, 2009). The majority reporting that they found benefits also concurs with findings suggesting that concentrated reading or reading and listening may be more effective in raising skills than occasional reading (Aka, 2019a; Chang & Millett, 2015; Prowse, 2002; Suk, 2017).

Teng (2016) observed that in reading and listening with a well-leveled graded reader, the aural input aided EFL students to appropriately “chunk” passages while reading, and hypothesized that it “might allow the students to have more working memory space to comprehend the content more correctly and effectively” (p. 12). A participant wrote: “Reading is hard for me more than listening, but recently I can read with phrases. That make my reading faster. ... Listening taught me the stop points which are shown sentence phrases. It is useful for me,” perhaps indicating, as suggested by Teng, that aural input had been helpful for developing a stronger sense for noticing the salient phrases within passages when reading.

Potentially, by using options to match their reading with slowed or slightly faster audio, the range for students was extended, enabling longer periods of simultaneous bimodal input. This may have also increased the opportunity for students to develop the integrated and strengthened learning effects discussed by Cheetham (2017), and facilitate connection-building between printed and heard vocabulary and phrases, delivered with prosody, then remembered and recognized (Lin, 2012; Miles & Ehri, 2019; Kilpatrick & O’Brien, 2019; Stephens, 2017; Van Amelsvoort, 2020; Webb & Chang, 2020).

Closer focus in future investigations, however, will be essential to learn what alternative or further methods would better assist the nearly twenty percent who did not yet perceive transferred benefits to other academic reading tasks.

What differences in TOEFL scores may be found by comparing the score changes of a control group preceding the intervention, with the intervention participants' score changes?

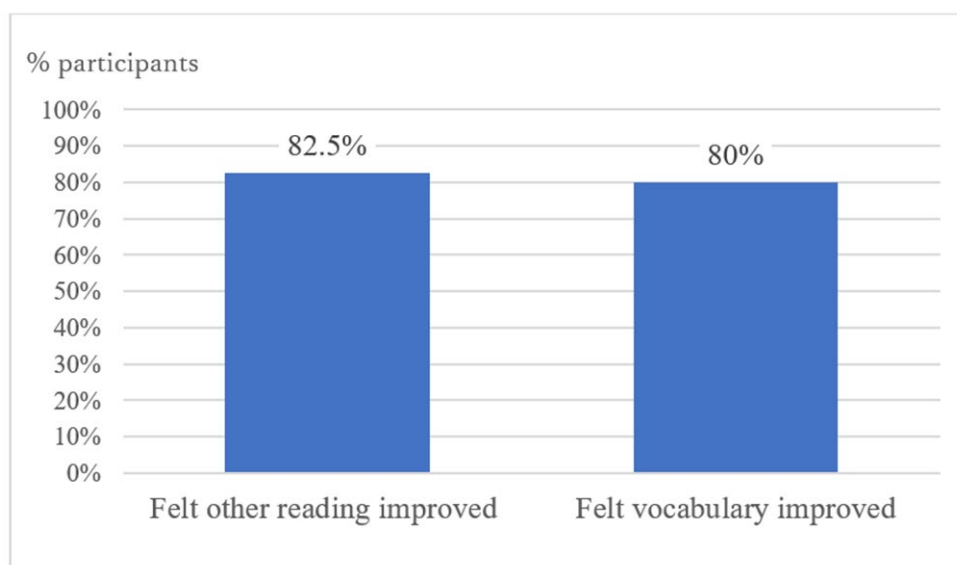
The second research question investigated for results with an outside, standardized exam compared with a matched control group, because of the importance of the exam for students in the study setting. The self-paced bimodal reading interventions commenced between six and eight weeks before the exam, and a small difference in overall averages could be found between the control and participants' TOEFL ITP score changes, without statistical significance.

Research regarding study time for improved scores is difficult to find, however, commercial sites offering test training caution that TOEFL score rises depend greatly on the individual, and students seeking meaningful point gains should plan to study in terms of many months, and possibly years (Fink, 2020; see also Appendix C). The measurable, though not statistically significant difference found despite this brevity, while therefore not generalizable, may tentatively suggest future research may be of interest.

Will vocabulary growth be perceptible to participants?

Participants made slightly fewer clear, confident responses in their self-assessment regarding vocabulary, with eighty percent reporting improvements (see Figure 2). Students preparing for high stakes academic exams and participation in English-medium university courses must learn a wide range of vocabulary. Though the corpus investigation by Green (2020) is promising, the materials in the analysis included general (un-adapted) fiction books and popular movies. Still, a participant's reply to the vocabulary question with: "Yes. TOEFL improved," may indicate perceptions of improvements with academic vocabulary could potentially be found. Significant vocabulary improvements through listening while reading with a single graded reader have been found in research by Teng (2016). According to Teng, "reading-while-listening helps learners retain the integrity of the original texts, which leads to better vocabulary gains" (p. 3), and this may be relevant to the vocabulary improvements noticed by eighty percent in the present study.

Differences in vocabulary gains may also be affected by the learner's strategy, for example, noticing and taking notes or letting new words pass by. Chang and Hu (2018) found effective vocabulary learners keeping notes of new words they encountered, though not required in their research investigation. In the present study, a response to the question about understanding more vocabulary: "No. I skip difficult words when I read books" contrasted with another student's strategy, feeling of improvement, and comment: "I read many story. Before this term I studied just vocab[ulary]...but now I study story and vocab[ulary], that's why." Considering these comments together with the findings in Chang and Hu, regarding the importance of learners' active attention to vocabulary learning, suggests future interventions should include proactive discussion of vocabulary learning strategies at the orientation stage.

Figure 2. Reading Development: Post-Intervention Perceptions (n = 126)

The self-assessment question for vocabulary gains may also have resulted in underestimation of improvements. Anderson (2012) discusses language learners' self-assessment and evidence of higher-level learners gauging their own abilities with, conversely, more self-criticism than accuracy. One participant, rather than "yes" for vocabulary improvements, wrote "It depends on category," which stands to reason and resonates with the experience of most second language learners. Depending on the context and the content, a learner will be encountering widely disparate vocabulary. This cautious self-evaluation, however, was written by a participant whose coursework success and gains on the TOEFL (demonstrating competence with varied academic categories) resulted in early, full matriculation to the parent university.

Concern and careful research investigating these points in the future will be a priority to ensure both measurable and felt vocabulary improvements, especially for the twenty percent who did not perceive gains.

LIMITATIONS

The present study had several serious limitations. First was the brevity of the interventions. As noted by Aka (2019a), discussing the fact that the vast majority of reading studies are shorter than three to six months:

Because it takes time for students to experience the enjoyment of reading or to realize how well they can read, a period of less than three months seems unlikely to be sufficient to improve English proficiency or develop a love for reading. (p. 3)

A second but very important limitation was that while control group comparisons were available for the TOEFL ITP scores, control groups were not available for comparison on other reading improvements, nor for vocabulary. While the tentative results found in the participants' perceptions and reflections were potentially encouraging, they could also simply reflect the students' strong motivation and consistent efforts. These limitations should be considered when interpreting all aspects of the present study.

Next, possibly also reflecting the brief (6–8 weeks) period of the bimodal interventions before testing, compared to the suggestions elsewhere for long preparation (Appendix C), the difference in TOEFL ITP scores between control and participants did not show statistical significance. This again restricts interpretation of the improvements found to the present setting and the determined efforts of the study's participants.

The third question asked for self-evaluations regarding vocabulary, and the present research would have been improved if further information had been gathered to clarify the less confident, negative or non-replies to the question. This information, moreover, will be important for future work toward improving the vocabulary-learning experience of learners, exemplified by the twenty percent who either left a blank, or did not reply with confident affirmatives. It is possible that vocabulary testing incorporated into the study might have shown informative results for the participants, and aided their self-evaluations.

Future research gathering hard data should examine for changes over six months or an academic year, with higher participant numbers, control groups for each research question, and more information sought in testing, questionnaires, and interviews.

CONCLUSIONS

The findings in this small-scale study, though preliminary, largely correlate with those in other recent research which found gains in reading skills through bimodal interventions. The present study, however, was carried out to learn if students using outside class online reading with adjustable audiobook listening might also experience improvements, as has been found in on-site research (Chang & Millett, 2015; Teng, 2016; Tuzmagambet, 2020). The interventions were short term and designed to fit within an otherwise set curriculum. A majority of the participants reported that their experience with self-paced extensive reading and listening carried over helpfully to other reading, and that they felt vocabulary gains. Measurable though not statistically significant improvement compared to a control group in TOEFL ITP testing provided very cautious support for these perceptions. In future research of longer duration, it would be of interest to investigate if learners carrying out self-paced reading and listening might find significant improvements in standardized testing as well as perceived gains in L2 reading skills and proficiency.

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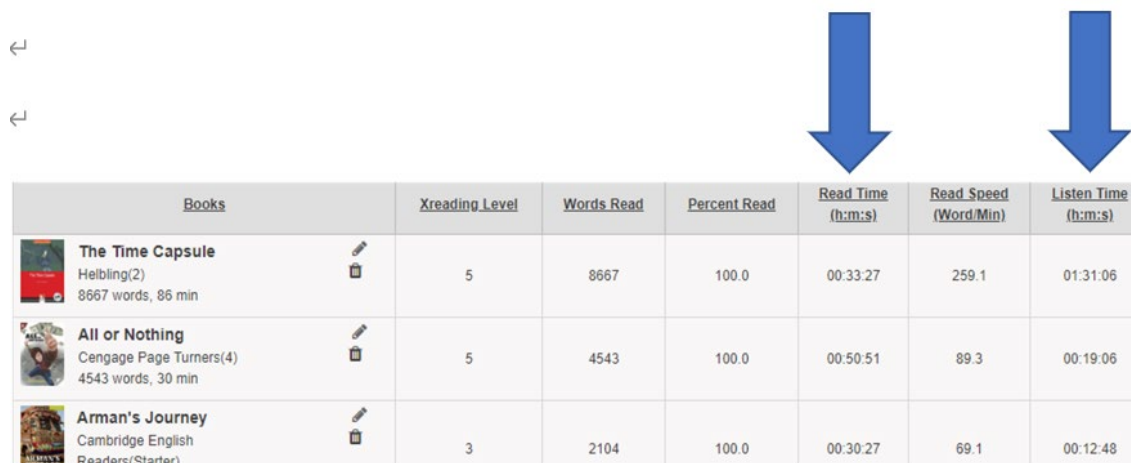
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Appendix A

Verifying books read, reading time, listening time and other details on Xreading (abridged):

Time (hours, minutes and seconds) spent reading and listening: see blue arrows.

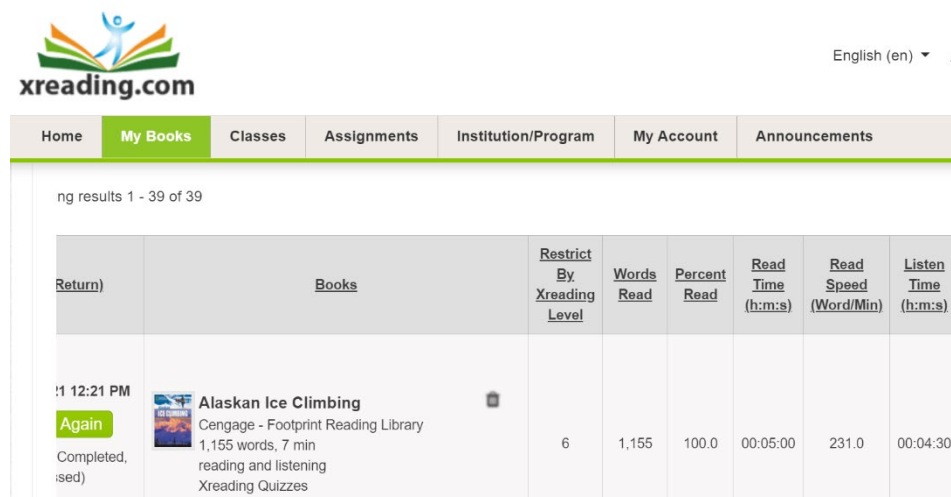


Books	Xreading Level	Words Read	Percent Read	Read Time (h:m:s)	Read Speed (Word/Min)	Listen Time (h:m:s)
 The Time Capsule Helbling(2) 8667 words, 86 min	5	8667	100.0	00:33:27	259.1	01:31:06
 All or Nothing Cengage Page Turners(4) 4543 words, 30 min	5	4543	100.0	00:50:51	89.3	00:19:06
 Arman's Journey Cambridge English Readers(Starter)	3	2104	100.0	00:30:27	69.1	00:12:48

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Time spent reading and listening: student's view



English (en) ▾

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Showing results 1 - 39 of 39

Return)	Books	Restrict By Xreading Level	Words Read	Percent Read	Read Time (h:m:s)	Read Speed (Word/Min)	Listen Time (h:m:s)
11:12:21 PM Again Completed, (used)	 Alaskan Ice Climbing Cengage - Footprint Reading Library 1,155 words, 7 min reading and listening Xreading Quizzes	6	1,155	100.0	00:05:00	231.0	00:04:30

Example image (abridged) from Xreading.com. Copyright XLearning Systems, 2023.

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Note: Content and functions found in Xreading.com have been reviewed, discussed, or utilized in research in the following publications: Milliner, 2017, 2019; Nation & Macalister, 2021; Nation & Waring, 2020; Ramonda, 2020; Robb, 2018; Walker, 2020; Wilkins, 2019; Zhou & Day, 2021.

Appendix B

Questionnaire Items Regarding Reading and Vocabulary

The questions below, for the present study, were excerpted from a longer questionnaire in a research project focused on a number of measures for reading fluency development.

1. Do you think the project helped with any of your other English reading?
2. At the end of this project do you feel you understand more vocabulary? If yes, why do you think so?

Appendix C

Advice to Potential TOEFL-Takers from an Online Test Preparation Company

“If you need 20 points, then simply studying the TOEFL and the skills that it rewards may not be enough. You may need to improve your general English abilities a lot, which can take time—sometimes years. Do not expect to see a 20 point improvement in just a couple months.”

Lucas Fink, TOEFL instructor, in “How Long to Study for the TOEFL.”

<https://magoosh.com/toefl/2015/toefl-tuesday-how-long-to-study-for-the-toefl/>

“And if you need even more general English improvement, that can take time, depending on what exactly you need and how much you need to improve. I have seen a few students work to improve their English communication for years in order to get a 20+ point increase on the TOEFL.”

Rossmann, P. (n.d.) “How much will my score increase?” Magoosh.com Blog post.

<https://magoosh.zendesk.com/hc/en-us/articles/218310483-How-Much-Will-My-Score-Increase-TOEFL->