Audio-assisted Extensive Reading: Learners' Experience and Attitudes

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ABSTRACT

The COVID-19 pandemic and remote lessons changed extensive reading (ER) implementation because online libraries became the only way for educators to continue ER assignments. Online libraries with audio narration make audio-assisted reading easily available to L2 learners. Research on audio-assisted extensive reading has shown that there are potential benefits; however, the benefits will only be experienced if learners choose to listen to audio while they read. What causes a student to choose to use audio while reading? This study aimed to learn from students' experience of audio-assisted reading. Japanese university freshman (N = 148) who were doing extensive reading for an academic year had an assignment to listen to audio while reading. After the assignment students could choose to read-only or do reading while listening. Data were gathered on students' listening time, on students' attitudes toward online reading in a questionnaire, and in interviews. Results showed that 47% of students chose to listen while reading when given a choice. Students agreed that audio-assisted reading was valuable language practice, although some aspects were bothersome. This study offers a method for increasing student use of audio in online extensive reading.

INTRODUCTION

The COVID-19 pandemic has influenced the implementation of extensive reading. Before the pandemic, interest in extensive reading (ER) and research on its effectiveness grew, particularly among English as a Foreign Language (EFL) educators in Asia Pacific countries (Jeon & Day, 2016). Advantages of providing large amounts of comprehensible input to learners were being found through research (Nation & Waring, 2020). Sun observed a "shift of research focus from testing the efficacy of ER to effective ER implementation" (2021). Implementing ER with online books, rather than paper, became an option as technology and internet connectivity increased (Cote & Milliner, 2015). Online book libraries have the benefit of a large volume of books, readability level information, comprehension quizzes, and audio narration (Zhou & Day, 2021). During the pandemic, remote lessons made online libraries the only way for educators to continue ER assignments. This study investigated learners' responses to experiencing audio-assisted extensive reading.

Audio-assisted Extensive Reading

Adding audio narration to reading gives learners a more comprehensive experience of the language. Audio-assisted reading provides a new learning environment that helps learners "recognize the letter-sound relationship" (Asrimawati & Margana, 2020, 217). Correct pronunciation and prosody in audio, act as scaffolding for learners' reading comprehension (Taguchi, Gorsuch, Lems, & Rozell, 2016). Prosody elements are demonstrated to learners in the audio which lifts their comprehension from a word-to-word level to meaningful phrases separated by pauses. In addition, variation in voices and sound effects help learners to concentrate on reading. Simultaneous reading and listening is called *audio-assisted reading* or *reading while listening* (RWL). L1 studies distinguish *listening while reading* (LWR) which focuses on reading, from reading while listening (RWL) which focuses on listening (Chang, 2011). However, descriptions of L2 extensive reading with listening commonly use *reading while listening* (Brown, Waring, & Donkaewbua, 2008; Gobel 2011; Milliner, 2019). Research on audio-assisted extensive reading has focused on its influence on second language learning. Gobel (2011) conducted a pilot study on the influence of reading while listening on general English proficiency as reflected in Test of English as a Foreign Language (TOEFL IP) scores. 162 Japanese university freshmen did RWL with at least 10 graded readers over ten months. Pre and post TOEFL IP tests showed gains over a year. Although the amount of RWL was not large, the amount of RWL correlated to gains in TOEFL IP scores. Gobel and Kano (2014) enlarged the study to 230 students, with additional measurements, questionnaires, and audio available on a learning management system (LMS). Results showed significant increases in reading rate and vocabulary recognition; yet no significant increase in TOEFL IP scores. The amount of RWL again predicted gains in reading rate and vocabulary recognition. However, these positive effects were dimmed by students' negative opinion of RWL due to the time burden and inconvenient LMS.

Chang and her co-researchers have experimented with audio-assisted reading on second language learners in a highly controlled version of extensive reading. Chang and Millett (2015) compared reading rates and comprehension of two groups: an audio-assisted group and a silent-reading group. The participants, 64 Taiwanese secondary students, read graded readers in class. The instructor selected the readers and led the reading time, including explanations of story content. After reading, students talked about the stories with classmates. Pre, post, and delayed post-tests showed increases in reading speed and comprehension for both groups; however, the audio-assisted group was significantly higher in both measurements. Chang and Millet explained reasons for the results; audio assisted reading led students to read at a consistent speed of 100 word-per-minute, whereas the silent-reading group "read at their own pace instead of being pulled faster by the audio recording" (100). They also suggested that audio-assisted reading may help students stay focused on a text. Lastly, interesting audio voices and sound effects may help students to concentrate. Research under similar conditions found that audio-assisted reading yielded superior gains in vocabulary learning as well (Webb & Chang, 2014).

Milliner (2019) also compared the effect of audio-assisted reading and silent reading on second language learners; however, with Japanese university students. Milliner's implementation of ER, compared to Chang's, more closely followed variable elements of extensive reading, including reading outside the classroom and students self-selecting books. His beginner-level university students used Xreading (xreading.com) to access books and audio at their level. At the end of a 15-week semester, the audio-assisted group performed better than the silent reading group in measurements of reading and listening.

Extensive reading, as practiced in many universities, is a means of engaging L2 learners in the target language outside the classroom. Gobel and Milliner comment that reading (with or without audio) done outside the classroom cannot be controlled or monitored by instructors. Thus, to increase the probability that students will choose to listen to audio while reading, students need to understand the benefits of audio-assisted reading and how to use audio functions. The writers teach a course which includes online extensive reading for Japanese university freshman. In the second quarter they introduced the audio option and the value of reading-while-listening; however, only 17% of students chose to listen to audio when reading, and only 3% listened to audio for at least one hour.

Learners who choose to use audio while reading report many benefits. Instructors in a large ER program at a Japanese university looked at students who did RWL voluntarily (Campbell, Calman & Campbell, 2021). The top 20% did an average of 9 hours of listening during a year-long extensive reading program. A questionnaire asked these students to describe reasons for listening to audio while reading. The two most common reasons were, "I like to listen and read at the same time", and "I want to improve my listening skill". Students wrote that audio-assisted reading was "more fun", "easier", "more active" and "more important" than reading-only.

The Current Study

The above review of audio-assisted extensive reading shows that there are potential benefits; however, the benefits will only be experienced if learners choose to listen to audio narration while they read. What causes a student to choose to use audio while reading? Learners need to be convinced of the value of audio-assisted reading, and they need to know how to use audio functions. This study aimed to learn from students' experience of audio-assisted reading and their evaluation of it in hopes of learning ways to implement RWL broadly. Students would be required to listen while reading for the first half of the quarter, and in the second half, have a choice to read-only or listen while reading. This study addressed the following research questions:

RQ1: Will students who have experienced audio-assisted reading choose to continue to listen to audio even when not required to listen to audio? Why or why not?

RQ2: Does the experience of audio-assisted reading influence students' sense of enjoyment of online extensive reading?

RQ3: Does the experience of audio-assisted reading influence students' evaluation of the value of extensive reading in language learning?

RQ4: Does audio-assisted reading influence students' ability to concentrate on reading?

METHODOLOGY

Participants

The participants were 143 Japanese university freshmen (ages of 18 to 20) who were studying Global Management, Food and Health or Child Development at a public university in regional Japan. This study was conducted as part of a required English course aiming to develop fluency in the four skills of language learning. The university has a quarter system in which one quarter is 7 weeks of lessons. Before the academic year began, freshmen were placed in classes

by English level. Shortly after lessons began, participants took the TOEIC IP (online) test, and their scores ranged from 250 to 860 with a mean of 476. The students were in 7 classes taught by the authors of the study.

In the first quarter, the English course introduced extensive reading, and students began reading digital books on Xreading. Xreading, is a digital library created for extensive reading which includes over 1,200 graded readers, narrative audio, comprehension quizzes, and a learning management system (Zhou & Day, 2021). In the second quarter students had two reading assignments, one in the first half of the quarter and one in the second half. The two assignments limit students from doing all their reading at the end of a term. Each assignment had a target to read 20,000 words each for 5% of the grade. The third and fourth quarter also had two assignments to read 30,000 words each. Thus, in the academic year students were asked to read 160,000 words. In the year of this research, 52% of students read 160,000 words or more. The current study was conducted in the third quarter.

Treatment

At the start of the third quarter, students were given an assignment to view an instructor-made web page that explained audio-assisted reading (https://sway.office.com/pLrz964i1Ud04jkt?ref=Link) The materials included Japanese (L1) video and written explanations of audio-assisted reading. Also, brief Japanese summaries of English research on audio-assisted extensive reading explained benefits of RWL (Chang, 2011; Woodall, 2010). Student comments about RWL from Campbell, Calman and Campbell's research (2021) were also included. In addition, a video demonstrated how to use the Xreading audio controls, including audio speed adjustment. Students were required to complete questions to demonstrate that they understood the materials.

The third quarter reading assignment for the first half (26 days) was to read 30,000 words while listening to the audio narration. The assignment for the second half of the quarter (26 days) was also 30,000 words; however, students could choose to read-only or listen to audio while reading. Each assignment was 5% of the quarter final grade.

Data Collection

Data were gathered on students' time spent reading while listening, from a questionnaire on students' attitudes toward online reading, and from interviews. Data from Xreading were analyzed to find the number of words students' read, the amount of reading time, and the amount of listening time in the first half and the second half of third quarter.

The questionnaire sought to gather information on students' evaluation of ER and audio-assisted reading. In the beginning of the third quarter, a pre-treatment questionnaire asked students about liking or disliking extensive reading, their evaluation of its value to language learning, and about concentrating on reading. At the end of the quarter, a post-treatment questionnaire included the above questions along with similar questions about audio-assisted reading (see Appendix A). The questionnaires were in Japanese. Responses were 4-point Likert scale style responses "disagree" (1), "somewhat disagree" (2), "somewhat agree" (3), and "agree" (4). A neutral option was omitted because survey participants tend to choose a midpoint option as a "dumping ground" for answers they are uncertain about (Nadler, Weston &Voyles, 2015, p.3). By eliminating the midpoint answer, survey respondents are forced to choose either a

disagreement or agreement option (Chyung, Roberts, Swanson & Hankinson, 2017). Participants were informed that their responses would be used for research in a confidential manner and asked for permission to use their data. The data of 16 students was removed because they did 0~50% of the audio-assisted reading in the first half of the quarter and thus did not have the experience to evaluate reading with listening. The surveys were conducted during class time, so absences resulted in a different number of responses in the first and second half of the quarter.

Interviews with 8 students sought to get a fuller picture of learners' experience of audio-assisted reading. Selection of interviewees was based on their amount of listening: four interviewees continued doing audio-assisted reading in the second half of the quarter, and four chose to do reading-only. The semi-structured interviews were conducted online in Japanese by the author that was not their current instructor. The average interview time was 20 minutes, and all the interviews were recorded and later transcribed.

RESULTS & DISCUSSION

RQ1 Will students who have experienced audio-assisted reading choose to continue to listen to audio even when not required to listen to audio? Why or why not?

Listening time data calculated from Xreading shows the average amount of audio-assisted reading that participants chose to do when listening was required in the first half of the quarter, and when it was not required in the second half of the quarter (Table 1). In the first half, the average reading amount was 29,149 words read in 4 hours and 24 minutes with 2 hours and 33 minutes of audio-assisted reading. In the second half, the average number of words read, and time spent reading fell slightly, and listening time dropped to 1 hour and 28 minutes.

Table. 1 Average amount of words read, reading time and listening time

		Number of students	Average number of words read	Average reading time	Average listening time
Quarter 3	First half	143	29,149	4:24:27	2:33:27
	Second half	138	28,135	4:04:00	1:28:19

The first half assignment, requiring audio-assisted reading, had the intended effect of causing the students to experience the audio. In the first-half assignment 48% of students did audio-assisted reading for over 3 hours. In the second half assignment, there was a drop-in average listening time yet, 47% of students chose to listen for at least 1 hour. In comparison to Quarter 2, when listening to audio was recommended, just 3% of students listened for at least an hour. Thus, the experience of RWL resulted in more students choosing to do RWL when not required to do it. In the 4th quarter, the average amount of listening time dropped further to an average of 51 minutes; however, 38% of the students chose RWL for at least 1 hour showing continued effect of the treatment.

During the interviews, students were asked to explain the reasons why they chose reading only or audio-assisted reading. Students who chose reading only felt stress in reading at the pace of audio, as seen in the following comments,
"I felt rushed to keep up (reading) with the audio and it became exhausting"

"I would get frustrated when I saw words I didn't understand and wanted to look them up (in a dictionary). So, I had to stop and start quite often."
"It felt too chaotic to listen and read at the same time. I preferred to read only or listen only, but never both."
Students who preferred audio-assisted reading cited enjoyment and benefits from listening, as seen in the following comments,
"I found it easier to understand the story. I could tell when different characters were talking and feel the emotional expressions."
"I enjoyed listening to the performative English – it felt like watching a movie"
"It was good practice to listen to various English accents"
   Pre-treatment and post-treatment questionnaire results and descriptive statistics show attitudes toward extensive reading (Table 2a). Cohen's *d* calculation (Table 2b) shows that there was a less than small effect for questions 2 and 6 and a minimal effect from questions 1 and 3 (Plonsky, 2015). Question 4 and 5 although exhibiting a low value, cross zero from lower to upper cases and can be considered a noticeable effect.
 Table 3 shows the mean scores for the post-treatment questionnaire about attitudes toward audio-assisted reading.

Table. 2a Pre-treatment and post-treatment questionnaire evaluation of online extensive reading

	Mean (Pre)	*SD*	Mean (Post)	*SD*	*t*	*df*	*p*
1. I can enjoy reading English books on Xreading.	2.92	.86	2.91	.79	1.82	138	.965
2. I think reading English books on Xreading is a waste of time.	1.84	.89	1.86	.75	-4.62	138	<.001
3. I don't enjoy reading English books on Xreading.	2.08	.81	2.17	.89	-2.99	138	.002
4. I sometimes find myself absorbed in reading English books when I read on Xreading.	3.08	.93	3.37	.80	-1.48	140	.071
5. I think reading English books on Xreading is good English practice.	3.15	1.02	3.54	.68	1.52	137	.934
6. I have a hard time concentrating when I read English books on Xreading.	2.30	.87	2.59	.89	-4.27	137	<.001

Table. 2b Cohen's *d* for questions 1-6

	Cohen's d	Lower	Upper
1.	.154	-∞	.295
2.	-.392	-∞	-.246
3.	-.253	-∞	-.111
4.	-.124	-∞	.015
5.	.129	-∞	.269
6.	-.363	-∞	-.218

Table. 3 Post-treatment questionnaire evaluation of audio-assisted extensive reading

	Mean (Post)	SD
1. Using the audio function in Xreading is smooth and easy.	3.06	.88
2. I don't enjoy reading and listening to English books on Xreading.	1.91	.85
3. Using the audio function in Xreading is awkward.	2.14	.91
4. I enjoy reading and listening to English books on Xreading.	3.01	.80
5. I sometimes find myself absorbed in reading and listening on Xreading.	2.98	.89
6. I think reading and listening to English books on Xreading is a waste of time.	1.84	.78
7. When reading and listening, I can understand the book better than when reading only.	3.18	.83
8. I think reading and listening to English books on Xreading is good English practice.	3.47	.67
9. I can understand an English book better with reading only.	2.35	.95
10. I have a hard time concentrating when I read and listen to books on Xreading.	2.30	.93
11. Reading and listening did not change my reading speed.	2.59	1.09
12. Reading and listening helps me to read faster than reading only.	2.42	1.00

RQ2 Does the experience of audio-assisted reading influence students' sense of enjoyment of online extensive reading?

The pre-treatment questionnaire in which students reflected on their previous experience of online extensive reading found mild agreement with the statement "I enjoy reading English books" (M = 2.92) and a similar response after the audio-assisted reading treatment (M = 2.91). When asked specifically about enjoying audio-assisted reading, the response showed a slight improvement (M = 3.01). The p value of .965 indicates that there was no significant change, and students still enjoyed extensive reading after the RWL assignment.

The interviewers asked, "What part of audio-assisted reading do you like or dislike?" Students liked hearing voice variation, sounds, and music which made reading "feel fun". The audio helped them to "imagine the story" and made reading "feel like a movie". They also liked hearing various accents and correct pronunciation which helped them to notice their mispronunciation.

"With audio I can hear the background noises like the main character, so I feel like I become the character. Reading becomes fun."

"My ear became used to (listening to) English."

Students noticed that audio-assisted reading improved their reading skills.

"I can notice pronunciation that I have been taught before."

"(Audio-assisted reading) helped me understand character distinctions and emotions." Interviewees disliked some of the practical elements of listening. It was a bother to adjust audio speed or experience a problem with the audio. Also, audio-assisted reading "takes more time" because you cannot skip pages when in a hurry to complete an assignment.

RQ3 Does the experience of audio-assisted reading influence students' evaluation of the value of extensive reading in language learning?

Questions targeting students' evaluation of extensive reading asked if extensive reading was "a waste of time" (Question 2 and 12) or "good English practice" (Question 5 and 14). In the pre-treatment questionnaire there was agreement that ER was good English practice (M = 3.15); this had a significant increase in the post-questionnaire (M = 3.54). Referring to audio-assisted reading there was also strong agreement (M = 3.47) that it was good English practice with few students evaluating it as a "waste of time" (M = 1.84). Therefore, students seem to understand that extensive reading, whether reading-only or audio-assisted reading, has value for language learners. The experience of listening while reading did have a noticeable effect on students' perceived value of extensive reading for their language learning.

When interviewees were asked about the value of audio-assisted reading, they repeated reasons for liking it and explained improvements in their language skills. Keeping pace with the audio caused several students to notice that their speed increased. Two students noticed that they had stopped re-reading, because "it (audio) helps me understand in one reading". One ambitious student explained that she increased the audio speed to push herself to read faster.

RQ4 Does audio-assisted reading influence students' ability to concentrate on reading?

Inquiring about the ability to concentrate while reading was approached with two questions, one asking if the learner experienced times of being "absorbed in reading" (Questions 4 and 11), and the other, if the learner had a "hard time concentrating" when reading (Questions 6 and 16). Pre-treatment, many students agreed that they had experienced being absorbed in reading (M = 3.08), and in the post-treatment questionnaire (M = 3.37) there was slightly higher agreement, a noticeable effect of the treatment. When asked about being absorbed in audio-assisted reading the response was slightly lower (M = 2.98). In the post-treatment questionnaire, some students agreed that it was hard to concentrate on reading (M = 2.59) and with audio-assisted reading (M = 2.30). Although these items were intended as opposites, "having a hard time concentrating" probably brought to mind distractions of friends, family, and other activities, whereas being "absorbed in reading" focuses on the quality of reading. Also, the second half of the quarter has more assignments and tests that could have made concentrating difficult. Audio-assisted reading did not seem to influence students' ability to concentrate on reading.

When interviewees were asked if listening to audio helped them to concentrate on book content, there were two types of answers. Listening to audio supported some students in concentrating for longer periods of time. However, several students explained that keeping pace with the audio requires more concentration than reading-only and is exhausting. "The audio continues to play, so if I don't concentrate hard, I cannot continue to understand." "Audio-assisted reading requires concentration, so at the end of a book I felt exhausted. I could only read one book a day."

Although students acknowledged the benefits of audio-assisted reading, the multi-modal nature of reading and listening at the same time may increase cognitive load and exhaust some students.

LIMITATIONS

A limitation of this study is that it took place in 2021 when most of the participants' courses were taught remotely. Days filled with online lessons may have influenced participants' desire to read and attitudes toward reading assignments online. Another limitation is that pre- and post-questionnaires relied on self-reported data, which can lack reliability due to participant's feelings toward instructors and other factors. In addition, questionnaire responses were reported on a Likert scale that used only a four-point range. It is possible that students who were initially content with extensive reading found merits in audio-assisted reading yet could not accurately express an improvement with a four-point scale. Lastly, the timing of the post-treatment questionnaire coincided with the end of the quarter when every course has evaluation questionnaires. Students may have felt 'survey fatigue' and not evaluated their experience of audio-assisted reading carefully.

IMPLICATIONS

An implication of this study is that experiencing audio-assisted reading may improve learners' evaluation of online extensive reading which could support their motivation to read. Nation and Waring summarize factors that influence learner's motivation to read as, 1) pleasure in reading, 2) reward from successful reading, 3) satisfaction in reading progress, 4) satisfaction in doing something worthwhile, and 5) enjoying autonomy in reading (2020). Learners in this study seemed to grow in agreement that extensive reading and RWL are worthwhile language learning practices. Also, audio-assisted reading may increase pleasure for some learners through the movie-like experience. As audio-assisted reading scaffolds listening skills, learners may feel success and satisfaction with reading and listening improvement. Thus, an experience of audio-assisted online extensive reading may increase motivation to read.

This study demonstrated that students benefit from a thorough introduction to audio-assisted reading. Many students need a demonstration of audio functions and an L1 explanation of benefits. By making listening while reading a requirement, students gained familiarity with the way to use audio and thus, continued to listen when listening was optional. Although the questionnaire only showed a noticeable improvement in student's evaluation of RWL as effective English practice, the reading amount data and interview responses showed that students generally enjoyed RWL, and many continued to listen even into the fourth quarter.
Audio-assisted reading may not suit some students' preferences for extensive reading. Reading and 'keeping up' with audio narration restrict students' freedom to read at their own pace, look up words they didn't understand or take short pauses with ease. This also implies that there were students who misinterpreted the aims of extensive reading and were not reading books at their reading level. Practical aspects of using audio may hinder students, such as requiring earphones when in a public place or with other people. Compared to reading-only, RWL requires a suitable learning environment.

CONCLUSION

Online digital libraries have influenced the way extensive reading is implemented by allowing learners to do audio-assisted reading. Adding listening to reading has benefits for second language learners including hearing correct pronunciation, prosody and intonation. Because extensive reading assignments are commonly done independently, learners must choose to listen while reading instead of reading only. Providing learners with detailed and easy-to-understand explanations of the value of listening while reading and how to use the audio functions can result in more students choosing to listen while reading. The subjects of this study did not choose to listen to audio narration until they were required to listen while reading as an assignment. Yet, after experiencing audio-assisted reading, 47% of students chose to use audio for some of their reading. A pre- post-treatment questionnaire showed that the experience of audio-assisted reading may have increased students' confidence that RWL is a valuable way to practice language learning and may have increased occurrences of being "absorbed in reading".

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Appendix A

Pre-treatment Questionnaire
1. I can enjoy reading English books on Xreading.
2. I think reading English books on Xreading is a waste of time.
3. I don't enjoy reading English books on Xreading.
4. I sometimes find myself absorbed in reading English books when I read on Xreading.
5. I think reading English books on Xreading is good English practice.
6. I have a hard time concentrating when I read English books on Xreading.
7. In Quarter 2 I did reading-while-listening.

Post-treatment Questionnaire included 1~6 above and the following questions,
7. Using the audio function in Xreading is smooth and easy.
8. I don't enjoy reading and listening to English books on Xreading.
9. Using the audio function in Xreading is awkward.
10. I enjoy reading and listening to English books on Xreading.
11. I sometimes find myself absorbed in reading and listening on Xreading.
12. I think reading and listening to English books on Xreading is a waste of time.

13. When reading <u>and</u> listening, I can understand the book better than when reading <u>only</u>.
14. I think reading <u>and</u> listening to English books on Xreading is good English practice.
15. I can understand an English book better with reading <u>only</u>.
16. I have a hard time concentrating when I read <u>and</u> listen to books on Xreading.
17. Reading <u>and</u> listening doesn't change my reading speed.
18. Reading <u>and</u> listening helps me to read faster than reading <u>only</u>.

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