



## The Effect of Post-Shadowing on Listening Skills and Learner Attitudes

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In recent years, shadowing has seen a significant surge in popularity in the field of English language learning. While much of the existing research has centered on its influence on listening skills, there is a prevailing belief that its benefits are predominantly observed among learners with lower proficiency levels. This study aims to examine the effects of post-shadowing on the listening skills of three different levels of learners in Japan. Three groups, low-, intermediate-, and upper-intermediate-proficiency learners, participated in eight shadowing practices which consisted of 15 minutes over the course of a month. The pre-and post-tests included the Eiken listening test and the dictation cloze test to measure phoneme perception and listening comprehension skills, respectively. The results showed that shadowing improved phoneme perception in the intermediate-proficiency group, but its effects were limited in low- and upper-intermediate-proficiency groups. Listening comprehension did not improve, and the scores of the low-proficiency group decreased from pre- to post-tests. However, regardless of their levels, most learners showed positive attitudes toward the shadowing experience and felt that it benefited their listening and speaking skills. The results are discussed in terms of second language acquisition (SLA) theories and psychological perspectives.

シャドーイングは近年、英語学習の分野において広く認知されるようになってきた。これまでの研究の多くはシャドーイングがリスニングスキルに与える影響に焦点を当ててきたが、その効果は習熟度の低い学習者に主に見られるという考え方が一般的だ。本研究の目的は、ポストシャドーイングが3つの異なるレベルの学習者のリスニングスキルに与える影響を検証することである。初級、中級、中級上の3つのグループに分け、1ヶ月間15分のシャドーイングを8回実施した。事前・事後テストとして、英検リスニングテストとディクテーションテストを実施し、それぞれ音素知覚力とリスニング理解力を測定した。その結果、シャドーイングは、中級レベルのグループで音素知覚を向上させることが分かった。しかし、初級と中級上レベルのグループではその効果は限定的であった。リスニング理解力は向上せず、初級レベルのグループではテスト前からテスト後にかけて点数が低下した。しかし、レベルに関係なく、ほとんどの学習者がシャドーイングに対して肯定的な態度を示し、リスニングとスピーキングスキルが向上したと報告した。本稿では、第二言語習得 (SLA) 理論と心理学的観点から研究結果を考察する。

**Keywords:** shadowing, bottom-up, listening, phoneme perception

### Introduction

Shadowing was originally used in fields such as cognitive psychology as a form of therapy for stuttering and selective attention tests (Bovee & Stewart, 2009). In Japan, shadowing has been popular for training simultaneous interpreters and was later introduced into the EFL context by Tamai (1992, 1997) and rphye



(2001). Shadowing has been investigated for its effects on listening skills (e.g., Hamada, 2016, 2019; Kato, 2009), reproduction rate (e.g., Shiki et al., 2010), pronunciation (e.g., Bovee & Stewart, 2009; Karasawa, 2009), and learner psychology such as learners' perceptions toward shadowing (Hamada, 2011b, 2015; Omar & Umehara, 2010), detailed in later sections (see Learners' Perception and Attitudes Toward Shadowing).

Shadowing has recently gained popularity in East Asia (e.g., Hsieh et al., 2013; Saito et al., 2011) and has been recognized internationally (e.g., Foote & McDonough, 2017; Hamada, 2016). However, in other countries, shadowing is still relatively unknown. Furthermore, even within Japan, where shadowing is well-known, it is not well defined, nor integrated appropriately into classrooms, making it difficult to clearly understand the effectiveness of shadowing across different levels of learners. Moreover, misconception of shadowing persists; it is frequently associated with the mechanical drills of the audio-lingual method (Bovee & Stewart, 2009), which emphasizes the repetition of language patterns and structures. However, when appropriately incorporated and balanced with other meaning-focused activities, shadowing can be a valuable tool in language learning (Hamada, 2016).

To address these misconceptions, this paper first discusses the rationale and the roles of shadowing in an SLA framework. Second, the effects of post-shadowing on phoneme perception and listening comprehension skills were investigated for this paper. Third, this paper introduces steps for shadowing as part of a balanced communicative learning procedure. Recommendations are provided for ensuring the effectiveness of shadowing while addressing its limitations. This paper seeks to offer insights into integrating shadowing into English education practices to dispel the aforementioned misconceptions about shadowing.

## Literature Review

### Shadowing in SLA Framework

Shadowing is an online process that involves listening to a recording of a spoken text and simultaneously repeating it as accurately and immediately as possible without written scripts (Shiki et al., 2010). In contrast, oral reading or repetition is an offline process that allows silent pauses before reproducing the perceived sounds (Kadota, 2007).

Shadowing improves learners' speech perception and strengthens their phonological loop. The phonological loop is a cognitive mechanism responsible for processing and temporarily storing phonological information, such as speech sounds in the phonological short-term store. This component of working memory retains the information momentarily (Kadota & Tamai, 2005). This information is then repeated in subvocal rehearsal, a process of rehearsing the sounds internally. While oral reading and repeating are effective for phonological coding, shadowing requires learners to judge what they hear and transfer it to a phonological form (Kadota, 2007), training the phonological loop in the working memory. In this way, shadowing helps learners automatize speech perception, expand their short-term memory capacity, and reinforce the rehearsal process.

Shadowing is considered an effective way to proceduralize and automatize skills as it involves online processing and time pressure (DeKeyser, 2007). The use of shadowing in second language (L2) learning can be supported by the skill acquisition theory (DeKeyser, 2007), which claims that skill development progresses through three phases: declarative, procedural, and automatization. Learning in English as a foreign language (EFL) context often starts with developing declarative knowledge of linguistic examples and rules, which are utilized as a foundation to proceduralize through extensive practice. The final phase is automatization, characterized by the fast, efficient, and stable use of knowledge.

Automatization is also a cognitive process that helps listening. Two types of processing in listening, top-down and bottom-up processing, play crucial roles in comprehension. Top-down processing refers to the use of schematic, world, and discourse knowledge in comprehension. It contrasts with bottom-up

processing, where learners decode words to understand a text (Field, 2010). Shadowing requires learners to focus on decoding the sounds they hear rather than relying on top-down processing. This technique can be particularly useful for learners who struggle with bottom-up processing due to limited processing capacities. Low-listening proficiency learners tend to utilize top-down processing rather than bottom-up processing to extract meaning to compensate for their weak decoding skills by utilizing their schematic knowledge (Rost, 2011; Tsui & Fullilove, 1998). Shadowing requires learners to attend to what they listen to, blocking top-down processing. This improves phoneme and word recognition skills (Hamada, 2016). Strengthening bottom-up skills can help learners to free up memory resources for higher processing and other linguistic skills, eventually leading to richer communication.

## Shadowing Research for Listening

Previous studies have shown that shadowing is effective for improving listening comprehension skills in English learning contexts within a relatively short period. Some studies suggest that low-proficiency learners are likely to benefit more from shadowing than high-proficiency learners. For example, Tamai (2005), comparing shadowing with dictation training, found that shadowing training had a stronger influence on low-proficiency learners. Kato (2009) and Hamada (2016) also reported that low-proficiency learners improved more than high-proficiency learners after receiving 15-minute shadowing training sessions.

Combining shadowing with other techniques can enhance its effectiveness. According to Kuramoto et al. (2007), integrating written scripts into shadowing can significantly boost its efficacy, especially for learners who struggle to keep up with shadowing. In text-presented shadowing (i.e., parallel reading), learners can refer to the script while practicing, allowing them to read and check written words at their own pace. A combination of shadowing and text-presented shadowing is considered to help learners shadow more accurately and improve reading skills and possibly pronunciation (Kuramoto et al., 2007).

Another way to enhance the online nature of shadowing is by incorporating monitoring techniques. There are two options available: self-monitoring, using an electronic voice recorder and pair-monitoring. In self-recorded shadowing, learners tend to feel less anxious compared to being monitored by a partner, allowing them to concentrate better on self-study (Nakayama & Suzuki, 2012). A notable advantage of self-recorded shadowing is that learners can replay their recorded audio multiple times, which is impossible in pair-monitoring. On the other hand, pair-monitoring's strength lies in the effective collaboration that can arise when learners have questions or identify problems that the other may not notice. Research shows that the pair-monitoring group performed worse than the self-monitoring group (Hamada, 2015; Nakayama & Suzuki, 2012) or those who received instructor feedback (Sakoda et al., 2009). Learners in pair-monitoring need to be proficient enough to accurately and precisely monitor each other's performance; otherwise, their low proficiency might hinder their ability to check details and interfere with their noticing.

Many educators are unsure about how many shadowing repetitions are necessary. Shiki et al. (2010) compared the effects of shadowing with repetition on the reproduction rate on 48 university students. One group attempted shadowing, while the other repeated the model stimuli six times. The repetition group outperformed the shadowing group only at the first trial in terms of reproduction rate. Improvement ceased in both groups by the fourth or fifth trial due to unwillingness to improve and become accustomed with the material. Shiki et al. (2010) suggest that it takes at least five shadowing attempts to improve the rate of reproduction to a ceiling point.

The way shadowing is implemented can also affect its effectiveness. Hamada (2014), investigating the difference between pre-shadowing and post-shadowing, showed that post-shadowing was statistically more effective for low-proficiency learners' listening comprehension skills. Post-shadowing is where learners practice shadowing after they study the contents, structure, and vocabulary of the target passage, while pre-shadowing is where they practice shadowing before studying the target passage. The effectiveness of post-shadowing is due to the familiarity with the target passage, which helps learners to reinforce previously acquired knowledge (e.g., vocabulary and grammar) and complements their limited cognitive capacity or

weak listening skills. The familiarity with the target passage also seems to be beneficial for reducing the psychological costs of shadowing (Hamada, 2011b). The following section will explore the psychological factors that influence learners' perception of shadowing.

## Learners' Perception and Attitudes Toward Shadowing

There has been research conducted to examine learners' perceptions and attitudes toward shadowing for listening skills. Hamada (2011b) conducted a study involving 32 English learners participating in eight 25-minute shadowing training sessions over a month. Although the research demonstrated that shadowing training can enhance learners' listening self-efficacy and comprehension skills, the learners had mixed positive and negative feelings towards shadowing. Negative feedback included the high cognitive load, repetitiveness, and time-consuming nature of shadowing.

Hamada (2015) conducted a study with 80 Japanese sophomores for eight training sessions to explore how their initial motivation, attitudes, and perceptions towards shadowing influenced their listening comprehension skills. The results indicated that initial motivation was crucial for improving listening comprehension skills through shadowing. In other words, learners with higher initial attitudinal motivation towards shadowing were more likely to show positive attitudes throughout the training and achieve a productive outcome in listening performance. Learners who experienced frustration and negative attitudes towards shadowing tended to lack concentration and showed smaller improvement. These studies suggest that to enhance learners' motivation and attitudes towards shadowing, it is important to communicate the purpose of shadowing clearly, provide learners with opportunities to measure their improvement and success, and use materials that are more authentic to meet their needs.

In light of the issues and the previous studies reviewed above, this study aims to answer the following questions:

1. To what extent does shadowing practice improve L2 English speakers' speech perception?
2. To what extent does shadowing practice improve L2 English speakers' listening comprehension skills?
3. How do L2 learners feel about doing repeated shadowing activities?

## Methods

### Participants

Participants (N=35) from three proficiency levels (see Table 1) were recruited from a language institute in Japan in their first-term in 2023. Participants' proficiency levels were decided from their TOEIC scores (11 low-, 14 intermediate-, and 10 upper-intermediate). The initial study group consisted of 46 participants. However, 11 were withdrawn from the data set due to missing classes or dropping the course.

TABLE 1  
*Demographics of the Participants*

Student Group	CEFR Level	N	Age	Nationality	Major	Gender	
						Female	Male
Low	A2	10	19–21	All Japanese	English	3	7
Intermediate	B1	14	19–21	13 Japanese 1 Korean	English	5	9
Upper-intermediate	B2	11	19–21	7 Japanese 2 Filipino 1 Taiwanese 1 Pakistani	7 Airlines 3 Korean studies 1 Vietnam studies	11	0

This research adopted a quasi-experimental design that replicated earlier empirical research (Hamada, 2016). To provide validity, this empirical study had to find a balance between providing the best teaching approaches and controlling variables for reliability (Yamamori, 2004). Furthermore, design experiments like this do not typically necessitate the use of a control group (Brown, 1992) because the independent variable is the class, the method is usually replicated. Validity was reinforced by comparing the result in this study with previous research that has already justified the effectiveness of shadowing on improving listening. Although this quasi-experimental model may be specific and lack adaptability to other situations, three research conditions have been achieved: a) experimental procedure and analysis; b) valid interpretation based on the data and theory; and c) clear, practical implications for educational practice.

## Materials

As for the shadowing material, eight passages are taken from *Active Skills for Reading Introduction, 1*, and 2, (Anderson, 2013a, 2013b, 2013c) for low-, intermediate-, and upper-intermediate-proficiency groups, respectively. These textbooks were assigned to each class by the institute. The length of each passage ranged from approximately 48-59 words for the low-proficiency group, 55-65 words for the intermediate-proficiency group, and 64-73 words for the upper-intermediate-proficiency group. Each passage was given a Flesch Reading Ease score (the maximum is 100; the higher the score, the easier the passage is to read), with the passages having an Flesch Reading Ease score ranging from 75.24 to 90.09 for the low-proficiency group, from 52.78 to 72.63 for the intermediate-proficiency group, and from 53.44 to 78.44 for the upper-intermediate-proficiency group. The Flesch-Kincaid Index ranged from 3.18 to 5.82 for the low-proficiency groups, from 5.74 to 10.72 for the intermediate-proficiency group, and from 5.95 to 10.61 for the upper-intermediate-proficiency group.

Even though the Flesch-Kincaid Index was similar between the upper-intermediate and intermediate-proficiency groups, the word count was about 25% more for the upper-intermediate-proficiency group, and the context was more complex. In all cases, the teacher discussed the meaning and context of the passage before starting each shadowing activity, making the shadowing passage within learners' understanding. Based on the Flesch-Kincaid Index and CEFR level (see Appendix A, B, C), all shadowing passages posed a challenge for the students. However, this challenge did not hinder effective shadowing practice; previous research has shown that shadowing with difficult passages can effectively enhance listening skills (see Hamada, 2011a).

Pre-and post-tests consisted of the dictation cloze test and two types of listening tests. The 15-item dictation cloze test was used to measure the improvement of phoneme perception. Dictation cloze questions were previously used in shadowing studies such as Kuramoto et al. (2007) and Hamada (2016). The passage used in the dictation cloze test was taken from the Voice of America (VOA) Special (VOA Special, 2011) and read at approximately 127 words per minute since materials in the VOA Special are adapted to EFL learners. A total of 15 phrases consisting mostly of function words (e.g., articles, prepositions) were duplicated with blanks. The aim was to test students' phonological perception rather than word recognition without being influenced by the context or other knowledge, such as lexical, syntactic, and semantic features. Additionally, so as not to allow the students to predict the answers from the context, they listened to the audio once, and the moment they finished, they had to stop answering. The dictation cloze test took about 5 minutes.

To examine the students' listening comprehension skills, two types of listening tests were selected from Eiken grade pre-2 Part II (10 questions, Eiken, 2022a) and grade pre-1 Part I (12 questions, Eiken, 2022b) to assess improvement in listening comprehension skills. Eiken grade pre-2 is designed for the mid-level of high school, while grade pre-1 is the second highest test for the mid-university level. Students were supposed to select the best answer from among the choices written in the booklet after listening to a short dialogue or speech lasting 30-40 seconds (see Table 2). This question type was selected because it measures the ability to understand short speech with relatively easy expressions, which are likely to reflect an

improvement in listening comprehension skills through phoneme perception. The listening test took about 20 minutes in total.

TABLE 2  
*Learners' Tasks in Each Part of Eiken Tests*

Grade	Section	Description of the Task	What Learners Hear	No. of Questions	No. of Choices	What is Written in the Book
Pre 1	Part I	Answer questions about the content of the conversation.	Conversations between two people	12	4	4 options
Pre 2	Part II	Answer questions about the content of the conversation.	Conversations between two people	10	4	4 options

*Note.* Audio for all parts is played once.

## Procedures

This study incorporated a pre- and post-test design, and the experimental classes included all participants; there was no control group. Participants were given shadowing practices for about 15 minutes twice a week over a month (i.e., eight sessions in total) by following the procedures adjusted from Tamai (2005), Kadota and Tamai (2005), and Hamada (2016) (see Table 3). Students practiced shadowing after learning the content of the passage (i.e., post-shadowing) and practiced shadowing five times in each session (Steps 5 and 6 in Table 3) based on the previous studies; post-shadowing is more effective than pre-shadowing (Hamada, 2014), and Shiki et al. (2010) found that shadowing five times is adequate. Although the previous studies showed that self-monitoring is more effective than pair-monitoring, this study used the latter to make the shadowing practice more communicative. Steps 3 and 4 were added from Session-4 to allow learners to clarify the content and vocabulary of the passage.

TABLE 3  
*Shadowing Procedure Used in the Study*

Step	Instruction	Description
1	Listening for meaning	Listen to the audio without a text.
2	Parallel reading	Listen to the audio and read aloud the text. Twice.
3	Discussion (from Session 4)	Discuss the content of the passage or ask the teacher questions about unfamiliar vocabulary and grammar.
4	Parallel reading (from Session 4)	Listen to the audio and read aloud the text. Once.
5	Shadowing	Listen to the audio and speak with the audio (no text). Three times.
6	Recording and pair monitoring	Record shadowing (once) and check with a text. Use handouts to evaluate the partner's speech. Shadow one last time and submit the recording on Google Classroom.

The pretest was implemented prior to the experiment, with the posttest being held afterward. Although there remained the possibility of practice effects, the same tests were used in the pre-and post-tests to minimize the risk of reliability when using two different assessment materials. To minimize the influence of the pre-and post-test method, approximately one month elapsed between the pre-and post-tests; learners received no explanation about the test content after the pretest. At the end of the posttest, students answered the questionnaire provided through Google Forms. The aim was to collect their perceptions of the overall shadowing experience, its challenges, and benefits. The questions were adjusted from Tamai (2005) and Hamada (2011b, 2015).

## Data Analysis

The data of the listening and dictation cloze tests was analyzed quantitatively. The listening tests consisted of a total of 22 questions (10 questions of high-school level and 12 questions of university level),

and a one-point score was given for each question. As for the dictation cloze test (15-phrase), the scores were analyzed using the 10-scoring criteria to measure the phoneme-orthographic improvements in the student's written answers (Table 4).

The first step for analyzing data was describing the main features of the collected data using descriptive statistics. The next step was to compare the improvement of each group for high-school-level and university-level questions, and phoneme perception. Similar to Hamada (2016), a mixed-design of two-way analysis of variance (ANOVA) was employed to ensure methodological consistency and comparability between this study and existing research. Proficiency was the between-participants factor, and time was the within-participants factor. A post hoc test, employing the Bonferroni adjustment, was performed to identify any statistically significant effects. This adjustment was employed to avoid Type 1 error by controlling the  $\alpha$  level.

The questionnaire consisted of Likert-scale and open-ended questions. The Likert scale required students to answer using a five-point scale from "applicable" to "not applicable." Ranges and average scores were calculated for these questions. Student responses to the open-ended questions were analyzed using emergent coding.

TABLE 4  
*Scoring Criteria for the Dictation-Cloze Test*

Score	Description of Criteria
1	Either no attempt is made to write the phrase, or only a single letter is written.
2	Only one word is written with two or more spelling mistakes (minor or major).
3	Only one word is written with correct phonemes, but there is a major spelling mistake.
4	Only one word is written, with correct phonemes, but there is a minor spelling mistake.
5	Only one word is written, with correct phonemes and spelling.
6	Both words of the phrase have correct phonemes, with two or more major misspellings.
7	Both words of the phrase have correct phonemes, with one major misspelling.
8	Both words of the phrase have correct phonemes, with two or more minor misspellings.
9	Both words of the phrase have correct phonemes, with one minor misspelling.
10	Both words of the phrase have correct phonemes and spelling.

## Results

### Listening and Dictation Cloze Tests

Regarding phoneme perception, measured by the 15-item dictation cloze test, the intermediate-proficiency group showed an improvement, with the mean increasing by 9.00 from 97.07 to 106.1, but there was no major change in the other groups (Table 5). A mixed-design of two-way ANOVA showed a statistically significant difference for time [ $F(1,32) = 4.95, p < .05, \eta^2 = .13$ ] and proficiency [ $F(2,32) = 80.70, p < .01, \eta^2 = .83$ ] with the upper-intermediate-proficiency group over the other two groups (Table 6). However, no significant difference was observed for interaction [ $F(2,32) = 3.97, p > .05, \eta^2 = .20$ ]. There was a medium effect size for the intermediate-proficiency group ( $d = 0.52$ ) and a small effect size for the low- and upper-intermediate-proficiency groups, respectively ( $d = 0.28$  and  $0.27$ ), suggesting that shadowing effects appeared only in the intermediate-proficiency group on their phoneme perception skills (see Table 5). However, considering that the low- and upper-intermediate-proficiency groups showed a small effect size with some individuals improving, there remains a possibility for these two groups of learners to improve their phoneme perception skills.

TABLE 5  
Test Score Results for the Low-, Intermediate-, and Upper-Intermediate-Proficiency Groups

Skill	Group	Pre		Post		Effect Size ( <i>d</i> )
		Mean	SD	Mean	SD	
Listening high-school level	Low	5.70	1.83	4.50	1.58	-0.70 (M)
	Intermediate	8.07	2.20	8.93	1.21	0.48 (S)
	Upper-intermediate	9.00	1.55	9.27	1.27	0.19 (-)
Listening university level	Low	3.50	1.96	3.10	1.29	-0.24 (S)
	Intermediate	3.79	1.53	4.43	1.50	0.42 (S)
	Upper-intermediate	6.55	2.34	6.36	2.73	-0.07 (-)
Phoneme perception	Low	38.00	12.61	42.00	16.15	0.28 (S)
	Intermediate	97.07	17.41	106.1	17.03	0.52 (M)
	Upper-intermediate	106.30	13.84	110.60	17.75	0.27 (S)

Note. For effect size, L = large, M = medium, S = small (Plonsky & Oswald, 2014).

Note. According to Cohen's criteria, effect sizes of 0.2 are considered small, 0.5 are considered medium, and 0.8 or higher are considered large.

TABLE 6  
Summary of ANOVA Results

Factor	Measurement		
	High School	University	Phoneme Perception
Time	F(1,32) = 0.01 $\eta^2 = .00$ (small)	F(1,32) = 0.00 $\eta^2 = .00$ (small)	F(1,32) = 4.95 * $\eta^2 = .13$ (small)
Proficiency	F(2,32) = 30.53** $\eta^2 = .66$ (large)	F(2,32) = 11.11** $\eta^2 = .41$ (medium)	F(2,32) = 80.70** $\eta^2 = .83$ (large)
Interaction	F(2,32) = 3.97* $\eta^2 = .20$ (medium)	F(2,32) = 0.90 $\eta^2 = .05$ (small)	F(2,32) = 0.39 $\eta^2 = .02$ (small)

Note. \* $p < .05$  \*\* $p < .01$

Regarding the high school-level questions, measured by the 10-item Eiken listening test, there was no improvement in the intermediate- and upper-intermediate-proficiency groups, and the pre-to-post-test score decreased by 1.20 from 5.70 to 4.50 in the low-proficiency group ( $d = 0.70$ , Table 5). A mixed-design of two-way ANOVA showed a statistically significant difference for interaction [ $F(2,32) = 3.97$ ,  $p < .05$ ,  $\eta^2 = .20$ ] (Table 6). The simple main effect of time was not statistically significant in any groups [ $F(1,32) = 0.01$ ,  $p > .05$ ,  $\eta^2 = .00$ ], but the simple main effect of proficiency showed a statistically significant difference [ $F(2,32) = 30.53$ ,  $p < .01$ ,  $\eta^2 = .66$ ]; the upper-intermediate-proficiency group was statistically higher than the other two groups.

Regarding the university-level questions, measured by the 12-item Eiken listening test, there was no major change in any of the groups. A mixed-design of two-way ANOVA showed no statistically significant differences for time [ $F(1,32) = 0.00$ ,  $p > .05$ ,  $\eta^2 = .00$ ] or interaction [ $F(2,32) = 0.90$ ,  $p > .05$ ,  $\eta^2 = .05$ ] but a statistically significant difference in proficiency [ $F(2,32) = 11.11$ ,  $p < .01$ ,  $\eta^2 = .41$ ] (Table 6), with the intermediate-and upper-intermediate-proficiency groups higher than the low-proficiency group.



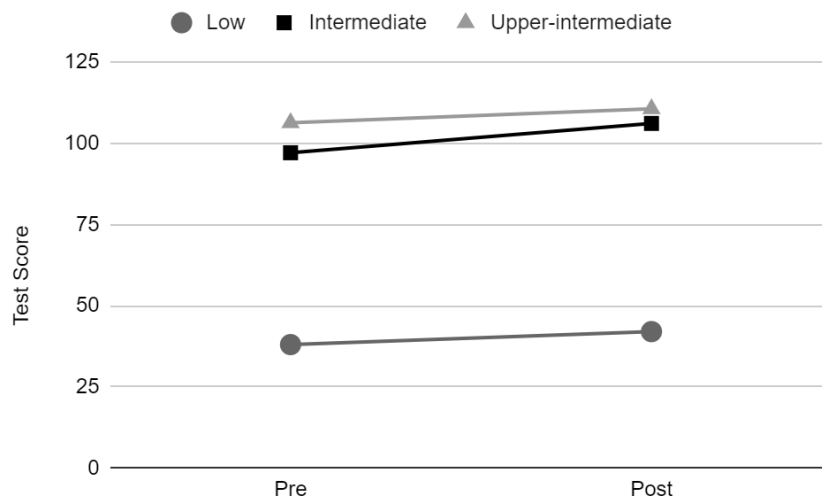


Figure 1. Learners' phoneme perception scores.

In summary, the intermediate-proficiency group improved phoneme perception (see Figure 1), but no groups showed improvement in the listening tests. In addition, the low-proficiency group decreased in their score on the high-school-level listening test.

### Questionnaire

Table 7 indicates the results of the Likert scale questions in the posttest questionnaire. Overall, more than half (63%) of the students had positive attitudes toward shadowing. Eighty-four percent of students commented that shadowing improved their listening skills, and 74% commented that they would recommend shadowing to their friends.

TABLE 7  
Overall Results on the Questionnaire

Item	Mean	SD	N
Liking of shadowing	3.84	0.99	31
Effectiveness of shadowing on listening	4.38	0.87	32
Willingness to recommend shadowing	4.06	0.93	31

Note. The questionnaire was a five-point Likert Scale from strongly disagree to strongly agree.

Table 8 shows the students' perceptions of the effectiveness of shadowing. Although the shadowing training was intended to improve listening skills, students reported that not only their listening skills but also their prosody (e.g., intonation, pronunciation), speaking, and retention improved.

TABLE 8  
*Perceived Benefits of Shadowing*

Listening	Prosody	Speaking
My listening skills have improved. (59%, 19)	I've developed an understanding of the English rhythm and intonation. (66%, 21)	My mouth moves more flexibly (easily) than before. (41%, 13)
I've become better at retaining the English I hear in my mind for longer. (56%, 18)	I've learned to express the English rhythm and intonation. (34%, 11)	I've become faster at pronouncing English. (34%, 11)
I've started paying attention to each and every word while listening. (50%, 16)	I've started unconsciously repeating English in my mind. (28%, 9)	I can now read English aloud at a faster pace. (34%, 11)
I've come to understand the meaning of English in English. (25%, 8)	My pronunciation has improved. (22%, 7)	

Note. N = 32. The number in parentheses is the number of respondents who chose the item.

Table 9 shows students' perceived challenges of shadowing. Generally, students reported difficulty listening to individual words and retaining them, as well as keeping up with the speed of the audio. There were also high instances of reported challenges of shadowing environments in the institute, such as shadowing without earphones, noise in the classroom and from classmates, and low audio volume.

TABLE 9  
*Perceived Challenges of Shadowing*

Listening	Prosody	Speaking	Other
It's hard to catch individual words while listening. (78%, 25)	I find it difficult to imitate the English rhythm and intonation accurately. (41%, 13)	I can't keep up with the speed of the audio. (59%, 19)	Shadowing is a lot of work. (47%, 15)
I often forget English in my mind. (69%, 22)	I struggle with pronouncing words correctly. (34%, 11)		I get easily distracted when shadowing. (41%, 13)
I have difficulty hearing the model audio (e.g., low volume, noisy background). (59%, 19)			Evaluating my classmates' shadowing is difficult. (22%, 7) The passages are difficult. (22%, 7)

Note. N = 32. The number in parentheses is the number of respondents who chose the item.

## Discussion

This study investigated the impact of shadowing training on learners' phoneme perception and listening comprehension skills across different proficiency levels. The results indicated that shadowing training effectively enhanced phoneme perception skills for the intermediate-proficiency group but not for other groups, unlike the previous studies showing shadowing's beneficial effects on low-proficiency learners (Hamada, 2016; Kato, 2009; Tamai, 2005). Concerning basic listening comprehension skills, the training yielded negative effects for the low-proficiency group and no effects on the other groups. Similarly, for advanced listening skills, there were no major effects on all groups.

Listening is a complex skill involving both bottom-up and top-down processing (Field, 2010). Phoneme perception plays a crucial role in word recognition (Rost, 2011), and shadowing improves learners' phoneme perception, strengthening bottom-up processing for listening skills. Kadota's study (2007) supports this, showing that shadowing benefits speech perception, particularly for weaker function words (Nakayama & Suzuki, 2012). However, the results also indicate that more than shadowing may be required to enhance listening comprehension skills, especially for beginners. While some learners improved

phoneme perception and word recognition through shadowing, they may have encountered unfamiliar vocabulary in the listening tests due to the wide range of expressions used. Shadowing helps learners identify familiar words but does not necessarily aid their overall comprehension (Nakayama & Suzuki, 2012). Thus, phoneme perception skill improvement by itself seemed to be insufficient to answer the listening comprehension questions correctly, and additional listening skills and test-taking strategies are likely needed for improved comprehension. This may also explain why the improvement was more prominent among the intermediate-proficiency group. The upper-intermediate-proficiency group already possessed sufficient skills to answer listening questions before training, and due to ceiling effects, there seemed no significant change after the training.

Furthermore, the study's design may have limited the extent of improvement. In this study, the time set aside for shadowing was only 15 minutes per session, which may have been short compared to other studies targeting low-proficiency learners (e.g., 50-minute shadowing in Tamai, 1992, and 30-minute shadowing in Mochizuki, 2006). Incorporating more practice time may yield better outcomes for learners with low proficiency. Also, this study incorporated pair-monitoring rather than self-monitoring. In the previous studies, self-monitoring proved to be more effective than pair-monitoring (Hamada, 2015; Nakayama & Suzuki, 2012). Considering the student level, it is dubious that low-proficiency learners were able to assess the accuracy of their partners' shadowing performance or provide any constructive feedback. They may have lacked the opportunity to notice their mistakes or revise their performance. Although this research incorporated pair-monitoring to increase students' communication, revising the design of the research, such as utilizing self-monitoring and teacher feedback, could lead to better outcomes in the future.

Despite the limitations, student responses to the questionnaire indicated overall enjoyment and perceived benefits of shadowing, not only in listening but also in speaking and pronunciation, particularly in terms of natural speed and prosody. Although some students initially found shadowing challenging, most students gained confidence and felt a sense of achievement as the training progressed. Surprisingly, the majority of students perceived shadowing positively, regardless of proficiency level, contrary to previous studies' findings (see Hamada, 2011b, 2015). It was an unexpected surprise to see that only one out of 32 students reported that shadowing is boring.

In addition to the positive feedback, there was some negative feedback and suggestions for improvement. These suggestions were primarily grouped into three categories: audio environment (e.g., quiet settings, using earphones), content (e.g., utilizing familiar and interesting materials such as movies and lyrics), and practice methods (e.g., incorporating more practice sessions). Notably, the audio environment was a commonly raised concern among students from all proficiency levels. Due to the large class size of more than 10 students, students had to listen to the audio using a projector. They may have been distracted from shadowing due to other students' voices. Providing each student with earphones to focus on the audio may be crucial for the students' overall experience, as well as for the effectiveness of shadowing in future research.

## Limitations

The findings of this study should be interpreted while considering several important limitations. First, this study has an equal and relatively small number of participants in each group, with the upper-intermediate-proficiency group consisting only of females. Therefore, future studies should include larger and more diverse groups. Gender may have influenced learning styles and learners' engagement with shadowing, potentially affecting the test results. Gender's impact on shadowing has not been covered in research and could be a topic for future research.

Second, this study lacked a control group, thus hindering a direct assessment of the effectiveness of shadowing in the learning procedure. Due to institutional limitations, and to avoid discrimination within the researchers' classes, the opportunity to choose random groups with balanced parameters was not

available. Therefore, this sample may not accurately represent what teachers may experience in their individual settings.

Third, the design of this study does not account for all potential confounding variables. Shadowing was incorporated into a procedure that involved listening for meaning, parallel reading (Kuramoto et al., 2007) and pair-monitoring (Nakayama & Shiki, 2012) to enhance its effectiveness, align with previous research, and further explore its effects within an existing framework. The scope of this paper is only to report in this incorporation; a more focused approach on isolating the impact of post-shadowing could provide clearer insight into its effects in the future.

Despite these limitations, the findings of this study provide valuable insights into the effectiveness of shadowing in improving phoneme perception and motivating learning.

## Conclusion

This study explored the effectiveness of shadowing in enhancing English learners' phoneme perception and listening skills across different proficiency levels. While shadowing had a significant positive impact on phoneme perception for the intermediate-proficiency group, its effects were limited for the low- and upper-intermediate-proficiency groups. Additionally, shadowing within the procedure of learning did not lead to improvements in listening comprehension skills. Despite its limitations, the study highlighted the potential benefits of shadowing for language learners. Learners had positive attitudes toward shadowing, finding it helpful for pronunciation, prosody, and speaking confidence. The importance of considering the audio environment and providing appropriate materials for effective shadowing training was underscored. While shadowing can be a valuable supplementary technique for developing phoneme perception and word recognition, achieving substantial improvements in listening comprehension may require additional strategies and tailored materials for learners at different proficiency levels. Further research with larger and more diverse samples with control groups is essential to gain deeper insights into shadowing's potential in second language acquisition and its application in various language learning contexts.

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**Appendix A****Word Number and Readability of the Materials for the Low-Proficiency Group**

Session	Topic	Number of Words	Flesch Reading Ease	Flesch-Kincaid Grade Level
1	Living Online	52	77.28	4.33
2	Living Online	54	81.51	4.57
3	Living Online	54	75.24	4.68
4	Study and Education	59	77.84	4.85
5	Study and Education	48	77.10	4.49
6	Work Choices	52	76.50	5.82
7	Work Choices	53	82.94	3.89
8	Work Choices	50	90.09	3.18

**Appendix B****Word Number and Readability of the Materials for the Intermediate-Proficiency Group**

Session	Topic	Number of Words	Flesch Reading Ease	Flesch-Kincaid Grade Level
1	Exam Time	61	67.62	5.99
2	Exam Time	65	64.79	7.45
3	Exam Time	59	52.78	9.56
4	Exam Time	63	57.91	9.10
5	Exam Time	55	62.10	9.15
6	Going Abroad	63	72.63	5.74
7	Going Abroad	65	61.78	7.33
8	Going Abroad	61	54.44	10.72

**Appendix C****Word Number and Readability of the Materials for the Upper-Intermediate-Proficiency Group**

Session	Topic	Number of Words	Flesch Reading Ease	Flesch-Kincaid Grade Level
1	Travel	72	53.44	10.28
2	Travel	73	56.42	9.02
3	Travel	71	64.85	10.09
4	Travel	73	78.44	5.95
5	Travel	67	66.09	8.20
6	Travel	73	53.88	10.28
7	Fashion	64	56.96	10.61
8	Fashion	71	62.56	7.47