第 57 回 中村英語教育賞　入選論文　　第 3 位

The Effect of Shadowing with Different Text Levels on Listening Proficiency

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Listening is considered the least active of the four skills. However, research suggests not only that listening requires a positive attitude for comprehension, but that one cannot improve one's listening skills by only listening to English (Suzuki, 2007, p.113). In the classroom, learners have a difficult time improving listening skills. Inaga (2003) asked the 198 Japanese first-grade high school students to report what skill they found the most difficult. Listening was considered the most difficult (43.9 %), followed by speaking (22.7%), writing (19.2%), reading (4%), and none (10.1%).

What Is Shadowing?

This study defines shadowing as the act or task of listening in which the learner tracks heard speech and vocalize it as clearly as possible, while listening attentively to the incoming information (Tamai, 1997). Learners repeat what they hear after a brief time to shadow and monitor what they shadow simultaneously. This process engages not only the language areas but various other large portions of listener's brain (Kadota, 2007, p.14).

The human's memory system consists of a sensory memory, a short-term memory (working memory), and long-term memory. Shadowing contributes to the phonological loop of working memory, which processes and stores the incoming information. The phonological loop is made up of the phonological short-term store, which passively holds the phonological information for 2 seconds, and subvocal rehearsal, which actively repeats the phonological information (Kadota and Tamai, 2004, p.38). By practicing shadowing, the learners' speech perception will be automatized, enabling learners to increase the amount of phonological information held in the short-term store. Shadowing trains the rehearsing process, allowing them to hold the phonological information longer in the phonological loop (Kadota, 2007, p.157).

The Past Studies on Listening by Shadowing

The effectiveness of shadowing in classrooms has been investigated throughout the field on second language acquisition (Kuramoto & Matsuura (2002), Lambert (1992), Murphey (2001), Mochizuki (2006), Toda and Liu (2007), Tamai, (1992a, 1992b, 1997, 2001, 2005), Suzuki (2007)). For example, Tamai (1997) compared shadowing and dictation, and concluded shadowing improved learners' listening proficiency faster than dictation. Kuramoto (2002) reports the effectiveness of one type of shadowing activity, parallel reading (Tamai, 2005).

After review of past studies, some limitations of this data must be made notes of. Most research reports that shadowing could improve listening proficiency, but few described how shadowing was implemented in the classroom. The appropriate difficulty level for the target texts has not been described, except that Suzuki (2007) refers to wpm(=word per minute) of the text. No study has actually confirmed what level of the text is suitable for learners. In addition, though Kadota (2007) reports that lower proficiency learners improved their listening comprehension skills by shadowing training(p.201), specific skills the learners improved were not analyzed. These factors should be explored in order to make shadowing more applicable in the classroom.

This study was conducted to investigate the following two questions. (1) Is the difficulty of text related to students' progress in shadowing? (2) Is learners' progress in shadowing related to their listening proficiency?

Pilot Study

The pilot study was conducted with 26 third-year students (25 males, 1 female) who belonged to a technology course at a public high school in the Tohoku region, aged 17-18. English is not the focus of their high school program; their English proficiency level is between the pre-second grade and third of the Society for Testing English Proficiency(STEP) test.

The pilot study followed the seven steps described below (see Procedure) by using seven passages from the 26 listed below (see Materials). Student scores did not show statistically significant differences, $t(26) = .248$, $p = .806$. The possible reasons for this result were the inadequate opportunities for the students to practice and the inappropriate level of texts for several learners at the third-grade level.

Methods

Participants

The participants for the primary study were 45 second- and third-year students(23

males, 22 females) at a public high school in Tohoku. The students were divided into two groups: one is a second-year students' group, written as Group A hereafter (13 males, 9 females) and the other of third-year students' group, written as Group B hereafter (10 males, 13 females). The proficiency of both groups was not measured to differ ($F(1, 43) = 3.17$. n.s.). The English proficiency level of most students is near the national average for Japanese high school students, according to a practice examination organized by primary cram schools, *yobiko*.

Materials

Two types of materials were used in this study. First, 26 authentic passages (See Appendix). The length of the passages ranges from approximately 100 to 150 words. The 26 passages were divided into two levels based on a readability index and wpm. The cutoff line was as follows: wpm = 110, Flesch Index = 80.0, Lix = 35.0, Kincaid = 5.7, ARI = 5.0. In order to maintain students' motivation and concentration, most passages were authentic materials, taken from Tamai (2005), Kadota and Tamai (2004), VOA news, lectures, informal talks, and recitations of famous stories.

Second, the mixed versions of Society for Testing English Proficiency (STEP) tests pre-second grade of the third round in 2005 (January) and the third round in 2006 (January) were used for the pre- and post-test. Thirty items were chosen from both tests for the pre-test and the other 30 items were chosen for the post-test. Both of the tests were analyzed to be at an equal level ($t(20) = 1.338$, $p = .196$; correlation=.578, $p < 0.1$) The 30 items consist of three categories (Q1-Q10, Q11-20, and Q21-30). In Q1-10, learners listened to quite short passages, such as a conversation composed of 3 sentences. In Q11-20, learners were required to listen to short conversations with 5 sentences. Q21-30 of *Eiken* pre-2nd test requires learners to listen to relatively long passages, such as 7 sentences.

Procedure

Each shadowing lesson was conducted with the detailed instructions recommended by Kadota and Tamai (2004). The seven steps for this training are as follows: 1) to listen to a passage while trying to understand the passage's overall meaning, 2) mumbling once or twice, in which they are required to softly shadow the incoming sound, focusing on the incoming sounds more than on their pronunciation, 3) parallel reading, in which each learner shadows aloud, reading the texts of the passage, 4) checking their understanding of the written text silently, 5) shadowing three times, trying to keep up with the speed of the speaker, 6) to check the written text for sounds the learners could not hear or shadow and meanings they could not understand, 7) contents shadowing, in

which they concentrated on both shadowing and interpreting the meaning of the passage. At this stage, learners should focus on the meaning more than individual sounds.

Each lesson in this experiment took 50 minutes long with 20-25 minutes devoted to shadowing training. During these training periods, each lesson began with the shadowing training followed by non-experimental lessons using a textbook authorized by MEXT. This experimental lesson style was given 13 times. Group A used 13 less difficult passages and Group B used the other 13 more difficult passages.

Analysis

Paired-sample t-tests were performed to test for statistically significant differences between the pre-test and the post-test for Group A and Group B. The alpha level for significance was set at $p<0.05$. In order to compare learners' improvement on each category of the questions (Q1-10, Q11-20, and Q21-30), three paired-sample t-tests were performed. The alpha level required for significance for Q1-10, Q11-20, and Q21-30 was set at $p<0.017$ with Bonferroni adjustment, obtained by dividing 0.05 by 3.

Then, each group was divided into two levels (the higher proficiency level and the lower proficiency level) based on the pre-test scores to determine if differences depending on proficiency existed. The cutoff line between the higher proficiency level and the lower proficiency one was decided by the average scores of each group, 16 points for Group A and 18 for Group B. Three paired sample t-tests were performed to analyze the improvement of each group (the higher proficiency learners of Group A, the lower proficiency learners of Group A, the higher proficiency learners of Group B, the lower proficiency learners of Group B) on three categories (Q1-10, Q11-20, and Q21-30). The alpha level was set at $p<0.017$ for Q1-10, Q11-20, and Q21-30.

Results

A paired-sample t-test analysis of the pre- and post-tests of Group A showed statistically significant improvement ($t(21)= 2.253$, $p<0.05$), while Group B did not ($t(22)= 1.136$, $p=0.268$). Group A showed a significant tendency on Q11-20, $p=0.066$ (Table 3).

Further analysis was performed to measure the progress of learners of different groups on each question category (Q1-10, Q11-20, and Q21-30). The analysis shows only the lower proficiency learners of Group A showed statistically significant improvement. The data indicates that the learners' scores on Q21-30 improved with a significant difference ($p=0.001$). The data of Q11-20 showed a statistically significant tendency ($p=0.052$).

Table 1. The Effectiveness of Shadowing

		n	Mean	SD	*t*-value	df	*p*
Group A	Pre-test	22	15.86	4.3			
	Post-test	22	18.05	4.12	2.253	21	0.035
Group B	Pre-test	23	18.09	4.07			
	Post-test	23	19.09	4.17	1.136	22	0.268

Table 2. The Effectiveness of Shadowing on Learners of Group B

	n	Mean Difference	SD	*t*	df	*p*
Q1-10	23	−0.04	1.61	−0.130	22	0.898
Q11-20	23	0.52	2.15	1.164	22	0.257
Q21-30	23	0.52	1.83	1.367	22	0.186

Table 3. The Effectiveness of Shadowing on Learners of Group A

	n	Mean Difference	SD	*t*	df	*p*
Q1-10	22	0.32	1.84	0.813	21	0.425
Q11-20	22	1.14	2.75	1.940	21	0.066
Q21-30	22	0.73	2.31	1.475	21	0.155

Table 4. The Effectiveness of Shadowing on Lower Level Learners of Group A

	n	Mean Difference	SD	*t*	df	*p*
Q1-10	12	0.67	2.06	1.121	11	0.286
Q11-20	12	1.83	2.92	2.176	11	0.052
Q21-30	12	2.08	1.68	4.305	11	0.001

Discussion

Past studies concluded that shadowing works more effectively toward learners at the intermediate and lower level (Kadota, 2007, p.201; Tamai, 2001, p.624) and that the materials should be less challenging. Texts have to be within reach of comprehension without difficulty, two or three unknown words out of 100 at most (Kadota, 2007, p. 236; Kadota and Tamai, 2004, p.55). The results of this experiment strongly support this conclusion: learners of Group A showed a statistically significant improvement ($p<0.05$), while learners of Group B did not. After additional in depth analysis of each group, the lower proficiency learners of group A showed a statistically significant improvement ($p<0.017$); the higher proficiency learners of both groups and the lower proficiency

learners of group B did not.

Kadota (2007) lists four steps to acquire a second language: (1) automatization of phonological coding, (2) effectiveness of rehearsal of the coded phonology, (3) to increase the amount of phonemic input that can be rehearsed within the limited two seconds, (4) effective memorization of vocabulary, chunks, and grammar (p.176).

In Q11-20, the learners' task was to identify each phonemic sound and connect the phonemics to meaning. This result that the learners of Group A showed a statistically meaningful tendency could represent that they succeeded in automatizing phonological coding, step (1), and that they managed to rehearse the coded phonology, step (2).

Q21-30 requires students not only to listen to incoming sounds, but to retain the information for a period in their working memory. The improvement of scores in Q21-30 indicates that the lower proficiency learners' capacity to rehearse the incoming sounds within two seconds improved, step (3).

Though statistically significant differences were identified in only Group A, the results do not disprove the effectiveness of shadowing. Learners' anecdotal comments of group B after the whole trainings support the effectiveness, such as "I can hear English sounds more clearly than before," and "I am more confident choosing correct answers now than at the pre-test."

On the other hand, other common comments indicate that many of them learned to recognize incoming English sounds more successfully, but some of the learners seem to have problems usefully applying this skill to answer the questions on tests. This suggests that even after the learners become capable of listening to English sounds, they still need to practice how to answer the test questions.

Limitations of this study are the relatively small number of participants and absence of a control group. In this study, there was only a higher and lower proficiency group. Comparing the results of shadowing training versus no shadowing training was not possible. Further, although proficiency of both group A and B did not differ statistically, the equality of the two groups could be argued. For more accurate and convincing results, implementing shadowing with three groups with closer proficiency level is necessary to increase the reliability of future studies.

Conclusion

Despite limitations, the study can support the i-1 theory, which suggests the texts used in shadowing practices should be at a cognitive level which students can realistically achieve. Tamai (2005) also suggests that the passages which are i-1 level or below are suitable for learners.

The results that lower proficiency learners who practiced less difficult texts improved with statistically significant differences also support the suggestion offered by past studies that shadowing training works more effectively for lower level learners. Furthermore, the results that the score of Q21-30 of the lower proficiency learners who practiced with less difficult texts improved imply the effect of shadowing on longer passages. Phonological coding could be automatized and rehearsal of coded speech would improve. This enabled the learners to increase the capacity to rehearse the phonological information.

As supported by the results of this study, the procedure recommended by Kadota & Tamai (2004) should be applied in classrooms. As Nizaki (2008) proposes, learners should start with silent shadowing, then move to active shadowing. For beginner or poor proficiency learners, starting with shadowing through *Karaoke movie dubbing*, as McMillan (2008) introduces (p.12), will trigger such learners' motivation.

As mentioned by Kadota & Tamai (2004), shadowing contributes to the improvement of reading and speaking skills as well, because listening skills share its mechanism with these two skills, such as phonological coding and representation, and subvocal rehearsal. It will be a great pleasure if this study can contribute to a more implement of shadowing in the classrooms for learners' listening as well as reading and speaking progress.

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Appendix

Lists of Materials Used in the Training

(Less Difficult Texts)

Lesson	Title	Content Type	Words
1	Tokyo vs New York	Conversation	141
2	Weather in Japan	Conversation	121
3	Self Introduction of Ian	Interview	93
4	Lessons on Math by Ms. Hoger (1)	Lecture	91
5	(2)		178
6	(3)		117
7	Romeo and Juliet (1)	Drama	92
8	(2)		102
9	Hoichi without Ears (1)	Narration of a Story	128
10	(2)		170
11	(3)		99
12	A Lesson on Math by Ms. Hoger	Lecture	96
13	Hoichi without Ears (4)	Narration of a Story	169

(More Difficult Texts)

Lesson	Title	Content Type	Words
1	Questions about Statue of Liberty	VOA Special	117
2	From France to America	VOA Special	143
3	Truth about Symbol of Freedom	VOA Special	170
4	Global Warming (1)	VOA Special	87
5	(2)		134
6	(3)		144
7	The Gettysburg Address by Lincoln (1)	Speech	105
8	(2)		166
9	Interview with Christopher Belton (1)	Interview	108
10	(2)		97
11	Speech by Kennedy after Dr. King's Death (1)	Speech	141
12	(2)		151
13	Bird Flu Bird flue Spreads	VOA News	153