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Looking In, Looking Out

# What factors affect Japanese EFL learners' listening comprehension?

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Many Japanese students seem to have difficulties in English listening comprehension. In this study, the author initially explored factors that make listening difficult for students by administering a questionnaire. Then the author conducted several experiments to determine what kind of techniques would improve listening comprehension. In each experiment, the experimental group was given a different treatment as follows: (a) providing questions related to the main ideas in advance; (b) slowing speech rates and introducing pauses into the input; (c) supplying the meaning of important vocabulary words in advance; and finally (d) providing background information about the topic in advance. None of these measures was given to the control group. The results suggest that fast speech rate and student perception problems are the most significant factors that impair their listening comprehension, and slowing the speech rate indicated a positive effect on their comprehension. Additional facilitating ways included providing questions related to the main ideas and providing background information about the topic in advance.

英語のリスニングを苦手とする日本人学習者は多い。本研究では、まず、質問紙調査によって、どのような要因がリスニングを難しくしているのかを探り、次に、どのような指導方法が聴解力向上に効果があるかを明らかにするためにいくつかの実験を行った。各実験では、実験群は次のような介入を与えられた。1) 要旨に関連する質問を事前に与える、2) 発話の速度を遅らせる、および、切れ目ごとにポーズを入れる、3) 単語の意味を事前に与える、4) トピックについての背景知識を事前に与える。調査の結果、発話の速さと学習者の英語音声認識力の不足が、聴解を妨げる主な要因であると推察され、インプットの速度を遅くする指導方法が有効であることが示された。また、要旨に関連する質問を事前に与える指導、トピックについての背景知識を与える指導にも効果があることが示唆された。

**A**lthough listening plays an important role in communication, many Japanese EFL learners appear to have difficulty in English listening comprehension. In fact, according to a survey conducted in the author's class, about 50% of the students think listening is the most difficult skill of the four basic language skills. What factors make listening so difficult for Japanese EFL learners, and how could listening comprehension be improved?

Many previous studies have indicated possible factors that could obstruct their listening comprehension, including: (a) limited proficiency in English (Dunkel et al., 1989); (b) limited vocabulary or academic terms (Goh, 1997); (c) limited short-term memory for English input (Goh, 1997); (d) inability to recognize English phonemes and words (Goh, 2000); (e) lack of prior knowledge about the content (Carrell, 1987); (f) inability to comprehend speech delivered at faster rates of speed (Dunkel, 1988); (g) inability to detect the main points of the input (Olsen & Huckin, 1990); and (h) heavy dependency on bottom-up processing skills (Hansen & Jensen, 1994). However, it is still not clear which factor most affects Japanese EFL learners' listening comprehension.

On the other hand, researchers have also explored how listening comprehension can be facilitated. The findings varied, including the following: (a) Providing questions and instructing vocabulary before listening to texts had positive effects (Chung, 2002); (b) Neither slowed-down speech nor syntactically simplified speech enhanced listening at most levels, while the use of pauses had positive effects at most levels (Blau, 1990); (c) When given control, slowing down the speech rate improved comprehension (Zhao, 1997); and (d) Background knowledge had an important effect (Chiang & Dunkel, 1992). Those findings are not necessarily consistent and there still have been a limited number of empirical studies using Japanese ESL learners as subjects.

The purpose of the present study is to explore: 1) what factors make listening difficult for Japanese EFL learners; and 2) what kind of facilitating ways would improve their listening comprehension.

### Study 1: Exploring the impairing factors

In order to explore factors that make listening difficult for Japanese ESL learners, their awareness of the issue was investigated. The participants of this study were 64 college students majoring in business administration at a private university in Tokyo. They were from three intermediate-level classes: Class A (18 sophomores), B (25 freshmen), and C (21 sophomores). At the beginning of the semester, their English listening proficiency was measured using the listening section of the STEP 2nd grade test.

A questionnaire consisting of 18 items with a 5-point Likert scale was administered to the students. The items derived in part from students' comments collected beforehand and from other researchers' previous studies. Chronbach's Index was at .84 for those items; therefore, the questionnaire items were considered to be valid. The collected data was then subjected to factor analysis and correlation analysis.

### Results of Study 1

The items that were perceived by the students to be most significant in obstructing their listening comprehension are shown in Table 1. The mean score of Item No. 2 was the highest of all the items and it indicated that students perceived that a fast rate of speech is the most significant impairing factor. Nos. 6 and 14 were also related to speed. No. 7 suggested that they have problems in perceiving English sounds, and this might also be related to speech rates. No. 1 illustrated that students consider lack of vocabulary as an obstruction to listening comprehension.

**Table 1. Items perceived to be most significant by students**

Item No.	Item Summary	Endorsement (SD)
2	Speech is too fast to understand.	4.42 (0.69)
7	I can perceive the speech just in fragments.	4.21 (0.91)
1	I have limited vocabulary.	4.15 (0.97)
6	I miss the next part when thinking about incomprehensible words or phrases.	4.06 (1.08)
14	I cannot process the input as quickly as needed.	4.05 (0.86)

Although the number of participants and the questionnaire items were limited, in order to explore in more detail the factors which impair student listening comprehension, the data were subjected to factor analysis. A principal factor analysis with a Varimax rotation was conducted and finally yielded five factors (see Table 2).

Factor 1 consisted of four items (Nos. 8, 9, 10, and 6). All the items related to the tendency of paying attention to parts of the message rather than the whole. Therefore, the factor was labeled “Attention to parts rather than the whole.” Factor 2 was composed of five items (Nos. 4, 2, 13, 3, and 14). Three of them related to speech rate (Nos. 2, 3, and 14) while the remaining related to students’ inability to perceive English sounds. Therefore, the factor was named “Speech rate and perception problems.” Factor 3 was made up of two items (Nos. 1 and 18). They were connected to students’ lack of language knowledge such as vocabulary and grammar. Therefore, the factor was labeled “Lack of language

knowledge.” Factor 4 consisted of two items (Nos. 16 and 17). They were related to students’ lack of knowledge about the content or interest in the content. Therefore, the factor was labeled “Lack of content knowledge or interest.” Factor 5 was made up of two items (Nos. 11 and 5). They illustrated students’ lack of concentration. Therefore, the factor was labeled “Lack of concentration.” Correlations among the factors were measured using factor scores and no significant correlations were found among them.

To determine if there was a correlation between these factors and students’ listening proficiency, correlation analysis was conducted. Factor scores and the scores from the listening section of the STEP 2nd grade test were used for the analysis.

Only Factor 2 correlated significantly with listening proficiency at the 5% level. Based on this result, it was inferred that speech rate and students’ inability to perceive English sounds might be the most significant factor affecting their listening comprehension (see Table 3).

Table 2. Results of factor analysis

Item No.	Item Summary	Factor loading					Endorsement (SD)
		F1	F2	F3	F4	F5	
8	I cannot distinguish important points.	.835					3.60 (0.97)
9	I pay attention to details and do not get the overall context.	.769					3.52 (1.08)
10	I translate each word into Japanese.	.689					3.55 (1.33)
6	I miss the next part when thinking about incomprehensible words or phrases.	.554					4.06 (1.08)
4	I cannot divide streams of speech into words or parts of a sentence.		.692				3.40 (0.95)
2	I cannot comprehend speech delivered at faster rates of speed.		.638				4.42 (0.69)
13	I do not recognize sounds of words which I know in writing.		.624				3.23 (0.97)
3	I cannot remember words or phrases I have just heard.		.504				3.65 (1.04)
14	I cannot process English input as quickly as needed.		.477				4.05 (0.86)
1	I have limited vocabulary.			.785			4.15 (0.97)
18	I lack grammar knowledge.			.615			3.16 (1.18)
16	I have little prior knowledge about the content.				.886		2.72 (0.96)
17	I have little interest in the content.				.418		2.58 (1.02)
11	I cannot understand what is spoken about at all.					.613	3.11 (1.13)
5	I lack in concentration.					.500	3.53 (1.02)

Note: Only items with loadings equal to or over .40 are indicated in the table.

**Table 3. Correlation between impairing factors and listening proficiency**

	Listening proficiency
Factor 1: Attention to parts rather than the whole	-.145
Factor 2: Speech rate and perception problems	-.307*
Factor 3: Lack of language knowledge	.151
Factor 4: Lack of content knowledge or interest	-.224
Factor 5: Lack of concentration	-.167

\*  $p < .05$ **Study 2: Exploring facilitating ways**

A second study was conducted to investigate what kind of techniques would improve students' listening comprehension. The participants were the same population as in the first study. As indicated earlier, they were from three classes: Class A (18 sophomores), B (25 freshmen), and C (21 sophomores). Class A's mean score in the listening section of the STEP 2nd grade test was 16.8 (SD: 4.0), Class B's was 16.0 (SD: 4.7), and Class C's was 16.1 (SD: 4.2). (A perfect score is 25.) No statistically significant differences were found among the three classes. Four experiments were designed so that they could explore the impairing factors identified in Study 1, except Factor 5, which was difficult to deal with in a short-term experiment. The four different experiments were conducted on separate days. Depending on the experiments, each class was used both as an experimental group and as a control group, depending on the experiments.

**Experiment 1**

Experiment 1 explored Factor 1, which was labeled "Attention to parts rather than the whole" in Study 1. In this experiment, the experimental group (Class A) was given three questions related to the main ideas of the input (476 words) before they listened, while the control group (Class C) was not provided with this information. The treatment was designed to focus students' attention on the whole rather than parts. After they listened to the input, their listening comprehension was measured by 11 multiple-choice questions and three comprehension questions related to the main points. The scores were subjected to *t*-tests. The results indicated that the mean scores of the experimental group were significantly higher than those of the control group with both the multiple-choice questions and the comprehension questions (see Table 4).

The results suggest that focusing students' attention on the whole rather than parts by giving questions related to the main points in advance is effective in improving their listening comprehension.

**Table 4. Results of Experiment 1 (Providing questions related to main ideas in advance)**

	Experimental Group (N=16)	Control Group (N=20)	
Multiple-choice Qs	9.56 (SD: 1.50)	8.20 (SD: 2.09)	$p < .05$
Comprehension Qs (Full mark: 15)	7.63 (SD: 4.67)	5.05 (SD: 4.29)	$p < .10$

### Experiment 2

The second experiment focused on Factor 2, which was labeled “Speech rate and perception problems” in Study 1. In this experiment, three clips of a very short CNN news broadcast were used to examine speech rate. The texts of those clips had been recorded in three versions: at authentic speed without pauses, at slower speed without pauses, and at slower speed with pauses. If the speech rate is slowed down, and if pauses are introduced into the input, would listening comprehension improve? Slowing the speech rate was designed to make the input more comprehensible, and introducing pauses was intended to give students more time to process the input. Recall tests were used to measure their listening comprehension. A perfect score was 10 for each test. The results showed that the mean score of the group which was given the slower speech rate with pauses was significantly higher than that of the group which had speech at natural speed without pauses. In a further analysis, when the mean score of the group which was given natural-speed speech without pauses was compared with the mean score of the group which was given slower speech without pauses, the latter group had a higher score. However, when the mean score of the group which was given slower speech with pauses was compared with the score of the group which was given slower speech without pauses, the mean score of the former group was lower (see Table 5).

The results suggest that slowing the speech rate has a positive effect on listening comprehension, but introducing pauses into the input may not have any positive effect. When the participants were asked about the effectiveness of introducing pauses after the experiment, 34% of

them answered that pauses impaired their listening comprehension, while 26% said that pauses were helpful.

**Table 5. Results of Experiment 2 (Slowing the speech rate and introducing pauses)**

	Class B (N=21)	Class C (N=17)	
Input 1 (57 words)	Slow + Pauses 5.38 (SD: 2.29)	Natural 3.18 (SD: 3.05)	p<.05
Input 2 (82 words)	Natural 4.48 (SD: 2.32)	Slow 4.82 (SD: 3.07)	N.S.
Input 3 (89 words)	Slow 1.95 (SD: 1.91)	Slow + Pauses 1.35 (SD: 1.87)	N.S.

### Experiment 3

The third experiment dealt with Factor 3, which was labeled “Lack of language knowledge” in Study 1. Language knowledge should include grammar and vocabulary; however, it is difficult to provide general grammar knowledge in a short time. Therefore, in this experiment, focus was placed on vocabulary. The experimental group (Class B) was provided with the meanings of 12 unfamiliar words before they listened to the input (498 words). The control group (Classes A and C) did not receive the definitions. The treatment was intended to compensate for students' lack of vocabulary. A post-test consisting of five true/false questions and seven multiple-choice questions was given to all the participants. The mean score of the experimental group was 10.25 (SD: 1.26) and that of the control group was 10.19 (SD: 1.55). A *t*-test indicated no significant difference between the two groups.

The results demonstrate that giving meanings of unfamiliar words does not seem to have a positive effect on listening comprehension.

#### Experiment 4

The fourth experiment focused on Factor 4, which was labeled “Lack of content knowledge or interest.” In this treatment, the experimental group (Class B) was given some background information related to the passage (438 words), while the control group (Class C) was not. The treatment was to compensate for students’ lack of background knowledge and help them utilize appropriate schemata. The passage was about cholesterol problems in the U.S., so an explanation about cholesterol was given only to the experimental group. After listening, there was a post-test in which students had to summarize in three sentences what they had heard, and answer five comprehension questions. A perfect score was 30. A *t*-test showed that the mean score of the experimental group was 13.28. This was considerably higher than that of the control group, which was 10.25 (see Table 6).

The results suggest that providing background information about the topic in advance has positive effects on listening comprehension.

**Table 6. Results of Experiment 4 (Providing background information in advance)**

Experimental Group (N=25)	Control Group (N=20)	
13.28 (SD: 5.68)	10.25 (SD: 4.77)	$p < .10$

#### Discussion

In Study 1, a factor analysis of students’ awareness about the factors that impair their listening comprehension yielded five factors. Those included “Attention to parts rather than the whole,” “Speech rate and perception problems,” “Lack of language knowledge,” “Lack of content knowledge or interest” and “Lack of concentration.” The results of a correlation analysis between those five factors and listening proficiency suggested “speech rate and perception problems” would be the most significant factor that obstructs their listening. When the speech is delivered at a fast rate, students are more likely to have difficulty in perceiving English sounds, and they cannot process the input as quickly as needed.

In Study 2, each experiment was designed to cope, respectively, with the impairing factors found in Study 1. However, it was difficult to examine the effectiveness of a treatment on the intended factor alone because one treatment could have had effects on more than one factor. For example, providing background information in order to increase content knowledge or interest (Experiment 4) might have also helped students pay attention to the whole rather than parts (Factor 1). Therefore, it would be appropriate to interpret the results of Study 2 comprehensively rather than discretely.

In Study 2, three treatments showed positive effects on students’ listening comprehension, including “giving questions related to the main points in advance,” “slowing speech rates,” and “providing background information in advance.” Considering the results of Study 1, it is not surprising that slowing the speech rate had a positive effect



on listening comprehension. The other two treatments were facilitating ways that could enhance students' global understanding of the spoken text. Japanese ESL learners, who often have perception problems and a fragmentary understanding when they listen due to fast speech, have to rely on top-down processing to comprehend the text. Therefore, the author assumed that such treatment that could help their top-down processing would have a positive effect on their listening comprehension.

“Introducing pauses into the input” was intended to give students more time to process the input and was thus expected to be effective. However, it did not show any positive effect in the present study. This result is different from the findings of Blau's study (1990). In her study, at most levels of proficiency, pauses seemed to have a positive effect on auditory comprehension. One of the reasons for this might be the difference of the subjects' first languages. In Blau's study, the subjects were from Poland and Puerto Rico, and their first languages were Polish and Spanish. The sentence structures of Polish and Spanish are rather similar to that of English, while that of Japanese is rather different from English. Therefore, the author assumed, pauses may have been more effective for Polish and Puerto Rican learners than for Japanese learners. This assumption needs further evidence, though. Another possible reason why pauses did not work well for Japanese learners is that the pauses could have caused fragmentation in their comprehension. It could have obstructed their global understanding of the spoken text.

“Providing meaning of words in advance” was to compensate for students' lack of vocabulary and expected to

produce positive effects. However, this did not happen. One of the possible reasons is that students might have paid too much attention to those words while listening, and it could have caused fragmentation in their understanding.

## Conclusion

The results of these studies suggest that the most significant factor that impairs Japanese EFL learners' listening comprehension seems to be fast rates of speech and learners' inability to perceive English sounds. The results also seem to support previous studies that showed that a slower speech rate could help students comprehend better, especially at lower levels. Moreover, additional ways of improving listening comprehension include providing questions related to the main ideas, and giving background information about the topic. The author assumes that these are effective because when Japanese ESL learners have difficulty in listening comprehension, they tend to rely on top-down processing skills. However, more empirical studies are needed to prove this assumption. On the other hand, some of these techniques could interfere with student comprehension, such as introducing pauses into the input and providing meanings of words in advance. These were found to be ineffective for this group of Japanese EFL learners.

## Limitations of this study

The author acknowledges some limitations in this study.

- 1) The number of the participants was small. There should have been more participants, especially when conducting factor analysis.



- 2) The questionnaire needed to have more items.
- 3) The tests used to measure students' listening comprehension in the four experiments varied, depending on the experiments. More unified tests should have been used.
- 4) In the experiments, the variables should have been controlled better than they were.
- 5) Each treatment which was designed to cope with particular impairing factors could have had effects on more than one factor.

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