Vocabulary Learning Strategy Use of Unknown Words by Japanese Learners of English

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1. Introduction

1.1. Background

In recent years there has been, in the field of EFL teaching, a growing awareness of the importance of learning strategies for reading. Many researchers have proposed a variety of reading strategies such as the strategies of inferring unknown words in context, recognizing the type of text and text structure, and grasping the main idea of the paragraph.

One of the most difficulties learners have in reading is about vocabulary. But even if there are several unknown words, they should infer their meaning from the context, continue reading, and try to grasp the gist of a passage. "If learners try to infer the meaning of unknown words from the context, they could continue to read easily because there are some cues in the context." This is what the researcher usually thinks while teaching.

1.2. Purpose of the research

The purpose of this research is to profile the participants based on their responses to the questionnaire about reading comprehension in terms of Vocabulary Strategies (Mineishi, 1996, 1997), the strategies used when learners encounter unknown words in reading texts, and compare the tendencies toward the Vocabulary Strategy use of the learners with the learners' English proficiency in reading comprehension.

The aim of many other previous studies dealing with inferencing strategies of unknown words was to describe learners' strategies according to the answers of each questionnaire item, to divide learners into a high-score group and a low-score group, and then compare the relationship of strategy use between the groups. This research, however, aims to capture and classify the tendencies toward strategy use first, and then ascertain whether the tendencies and the scores of the English proficiency test have a statistically significant difference or not.

2. Research questions

This study addresses the following five questions:

1) What strategies do Japanese university students of EFL use when they encounter unknown words?
2) What strategies are effective for them to infer unknown words?
3) What strategies are not effective for them to infer unknown words?
4) What kind of cues are easily used to infer the meaning of unknown words?
5) Are there any differences in strategy use between high-score learners and low-score learners?

3. Method

In order to answer these questions, participants are instructed to fill out a questionnaire about Vocabulary Strategies and to carry out a proficiency test.

3.1. Participants

The participants for this research were 68 university students who were enrolled in classes managed by the researcher.

3.2. Proficiency Test

The English proficiency test used in this research was the STEP test. STEP stands for "The Society for Testing English Proficiency Incorporated." This test is one of the most used English proficiency tests in Japan.

The test consisted of two parts, listening and reading, but this time only the reading part was used. It was made up of 50 questions. They included questions focusing on vocabulary, grammar, and reading comprehension. The researcher chose the pre-second grade (jun-ni-kyu) test based on the participants' daily performance.

3.3. Questionnaire on participants' strategy use

In order to ascertain the research Question 1, "What strategies do Japanese university students of EFL use when they encounter unknown words?," the questionnaire in Japanese, which was identical to that of Mineishi (1997), was conducted. It had 45 items and 25 of them were about Vocabulary Strategies. The 25 items are well organized in that they include the findings of the previous studies (Hosenfeld, 1984; Block, 1986; Barnett, 1988; Huckin & Bloch, 1993; Brenna, 1995; McDonough, 1995; Akaike, 1995). It is why the researcher decided to use Mineishi's questionnaire.

Table 1. The items of the questionnaire: Vocabulary strategies for unknown words based on Mineishi

Word-identification Strategy	
Q01	Study word-form and generate a hypothesis on the word meaning (including recognition of cognates)
Guessing Strategies	
Q02	Guess word meaning from context utilizing syntactic cues
Q03	Guess word meaning from morphological analysis
Q04	Guess word meaning from considering the part of speech of an unknown word
Q05	Guess word meaning from context utilizing semantic cues
Q06	Guess word meaning from background knowledge (including examination of the title or illustrations)
Q07	Guess word meaning from personal experience/world knowledge
Q08	Visualize image about the content
Monitoring and Repair Word-Identification Strategies	
Q09	Reread the sentence including an unknown word
Q10	Question word meaning
Q11	Produce synonyms
Q12	Read aloud
Q13	Vary the reading rate
Q14	Have self-directed dialogue
Q15	Translate word for word
Q16	Comment on behavior or process
Q17	Monitor comprehension
Q18	Evaluate guesses
Q19	Note errors
Q20	Recover meaning through repair
Q21	Skip unimportant words
Q22	Detour unknown words
Q23	Continue reading if unsuccessful at decoding a word
Q24	Give up and stop reading
Q25	Use a glossary or a dictionary

The participants were asked to indicate to what extent they agreed or disagreed to the statement on the questionnaire on a five point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire translated into English is listed in Table 1 (see Appendix for the original questionnaire).

4. Results and Analyses

The mean scores and the standard deviations of each item of the questionnaire were shown in Table 2. The mean score and the standard deviation of the proficiency test was 36.91 and 6.97 respectively.

The analyses had two phases. The first analysis was conducted using cluster analysis (Ward method with squared Euclidean distance technique) to profile the participants based on their responses to the questionnaire. The result suggested that the students should be categorized into 4 groups. The 4 groups were named Cluster 1 (n=20), Cluster 2 (n=14), Cluster 3 (n=13), and Cluster 4 (n=21) respectively. To confirm the validity of the grouping, the researcher conducted one-way ANOVAs for all variables. To determine the significant differences, Tukey's multiple comparison techniques were carried out as the post hoc test. The results indicated that the group difference was significant at the .05 level in the Questions 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 23, and 24 (see Table 3 and Figure 1).

The learners in Cluster 1 didn't use syntactic cues compared to the other three groups (Q02: avg. 3.10), didn't consider the part of speech of unknown words much (Q04: avg. 2.20), or didn't evaluate guesses very much (Q18: avg. 2.75). They had tendency not to notice their errors (Q19: avg. 2.50), and not to continue reading after they are unsuccessful at decoding a word (Q23: avg. 2.60). Therefore, the learners in Cluster 1 were considered to be short of grammatical knowledge and be poor at monitoring.

The learners in Cluster 2 didn't use syntactic cues compared to the other three groups (Q02: avg. 2.71), or didn't consider the part of speech of unknown words much (Q04: avg. 2.71). Besides, they didn't question their inferred word meaning (Q10: avg. 1.50), didn't have self-directed dialogue (Q14: avg. 1.00), didn't comment on behavior or process (Q16: avg. 1.64), or didn't check their comprehension (Q17: avg. 1.57). But they tried to use semantic cues in context (Q05: avg. 4.86), background knowledge including title and/or illustrations (Q06: avg. 4.64), and personal experience/world knowledge (Q07: avg. 4.43), and had strong tendency not to give up and stop reading (Q24: avg. 1.21). For these reasons, the learners in Cluster 2 were considered to be short of

Table 2. Mean scores and standard deviations of each item of the questionnaire

	Q01	Q02	Q03	Q04	Q05	Q06	Q07	Q08	Q09	Q10	Q11	Q12	Q13	Q14	Q15
M	3.53	3.44	3.43	2.90	4.35	3.97	3.65	3.62	3.96	2.54	2.53	1.88	1.91	1.79	2.87
SD	1.09	1.21	1.32	1.32	0.79	0.96	1.09	1.07	0.87	1.27	1.17	1.13	1.09	1.20	1.32

	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25
M	2.18	2.15	3.38	3.09	3.57	3.81	3.40	3.34	1.93	4.41
SD	0.95	0.97	1.11	1.05	0.95	1.20	1.13	0.97	1.04	0.80

Table 3. Results of mean scores of each item in each cluster and the significant difference between clusters

Cluster	Q01	Q02	Q03	Q04	Q05	Q06	Q07	Q08	Q09	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25
1(n=20)	3.40	3.10	3.15	2.20	3.90	3.70	3.85	3.50	3.20	2.80	2.50	1.70	1.70	1.65	3.15	2.45	2.25	2.75	2.50	3.25	3.65	3.15	2.60	2.35	4.65
2(n=14)	3.14	2.71	3.07	2.71	4.86	4.64	4.43	3.93	4.71	1.50	2.43	1.93	2.21	1.00	2.57	1.64	1.57	3.93	3.50	3.57	3.50	3.07	3.57	1.21	4.43
3(n=13)	3.62	3.46	3.92	3.46	4.23	4.23	3.77	4.15	4.23	3.77	3.38	3.08	2.92	3.62	3.46	2.77	2.85	3.77	3.23	3.46	3.77	3.46	3.62	2.00	4.46
4(n=21)	3.86	4.24	3.62	3.33	4.52	3.62	2.86	3.19	4.00	2.24	2.10	1.29	1.29	1.33	2.43	1.90	2.00	3.38	3.29	3.95	4.19	3.81	3.71	1.95	4.14
all(n=68)	3.53	3.44	3.43	2.90	4.35	3.97	3.65	3.62	3.96	2.54	2.53	1.88	1.91	1.79	2.87	2.18	2.15	3.38	3.09	3.57	3.81	3.40	3.34	1.93	4.41
The results		1<4		1<3	1<2	1<2	4<1	4<3	2<1	2<1	4<3	1<3	1<3	1<3		2<1	2<3	1<2	1<2				1<2	2<1	
between		2<4		1<4	1<4	4<2	4<2		3<1	3<2		2<3	4<2	2<3		2<3	4<3	1<3					1<3		
clusters							4<3		4<1	3<4		4<3	4<3	4<3		4<3							1<4		
p<.05									4<2																

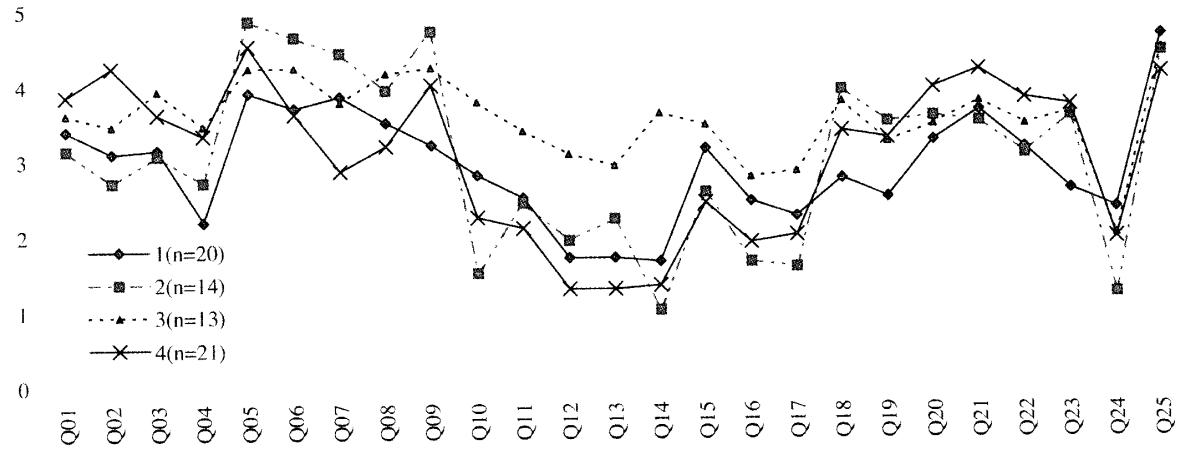

Figure 1. Means of 25 items of each cluster

grammatical knowledge and be poor at monitoring but to use guessing strategies actively.

The learners in Cluster 3 considered the part of speech of unknown words compared to the other three groups (Q04: avg. 3.46), questioned their inferred word meaning more than any other group (Q10: avg. 3.77), and produced synonyms (Q11: avg. 3.38). In addition, they read aloud (Q12: avg.3.08), varied the reading rate more often than any other group (Q13: avg.2.92), and had self-directed dialogue more often than any other group (Q14: avg. 3.62). These results suggested that they were the group having considerable grammatical knowledge and strong self-monitoring.

The learners in Cluster 4 used syntactic cues compared to the other three groups (Q02: avg. 4.24). But they didn't use personal experience/world knowledge very much (Q07: avg. 2.86), or didn't visualize the context compared to those in the other groups (Q08: avg. 3.19). In spite of little use of the knowledge or visualization, they recovered meaning through repair (Q20: avg. 3.95), skipped unimportant words (Q21: avg. 4.19), and detoured unimportant words (Q22: avg. 3.81). Therefore, they were the group who often used grammatical knowledge, and were able to skip unimportant words and detour unknown words, but didin't use their own background knowledge very much.

The second analysis was to compare the four groups on the score of the proficiency test. The one-way ANOVA indicated that there was a statistically significant difference among the 4 groups' score ($p = .04$). A post hoc multiple comparison was conducted with Tukey's Method. The results showed that there was a significant difference between Clusters 1 and 4 ($p = .02$). The mean scores and the standard deviations of each group were shown in Table 4.

5. Discussion

1) What strategies do Japanese university students of EFL use when they encounter unknown words?

First, almost all of the participants didn't consider the part of speech of unknown words as much as I had expected (see Table 3, Q04, all). The first step Nation (1990), and Nation & Coady (1988) recommended about guessing strategies for unknown words is as follows:

> Look at the unknown words and decide its part of speech. Is it a noun, a verb, an adjective, or an adverb?

As deciding the part of speech is one of the most important strategies for inferring unknown words, the students should pay more attention to this strategy.

Second, all of the participants tended to use semantic context in guessing unknown word meaning (see Table 3, Q05, all). This tendency seems to lead misunderstandings of the content, if students use abusively.

All of the participants also tended to use background knowledge including the title or illustrations (see Table 3, Q06, all). This is because it is easy to use with no regard to their vocabulary size.

Finally, all of the participants tended not to give up and stop reading, but to use a dictionary. This is because of their small vocabulary and active participation in class (see Table 3, Q24 & Q25, all).

2) What strategies are effective for them to infer unknown words?

Judging from the proficiency level of the participants in this research, it seems that they could infer unknown words better if they used more grammatical knowledge (see Table 3, Q02 & Q04, each cluster).

Table 4. Mean scores and standard deviations of each cluster in the proficiency test

	Cluster 1	Cluster 2	Cluster 3	Cluster 4
M	33.63	36.86	37.31	39.81
SD	8.26	5.72	6.52	5.61

3) What strategies are not effective for them to infer unknown words?

Even though learners use some guessing strategies, or the title and illustrations, almost all of them seem to be ineffective if they don't use grammatical knowledge and don't monitor their comprehension (see Table 3, Q05 & Q06, Q02 & Q04, Q16 & Q17, each cluster).

4) What kind of cues are easily used to infer the meaning of unknown words?

As far as the participants are concerned, they seem to use semantic cues, the title, and illustrations easily (see Table 3, Q05 & Q06, each cluster).

5) Are there any differences in strategy use between high-score learners and low-score learners?

In the levels ranging from upper intermediate to middle elementary, it might be considered that the more grammatical knowledge learners get and use, the more their proficiency level improves (see Table 3, Q02 & Q04, each cluster).

6. Conclusion

6.1. Summary

The learners who are considered to be short of grammatical knowledge and be poor at monitoring in encountering unknown words seem to have low English proficiency in reading. The learners who are considered to be short of grammatical knowledge and be poor at monitoring but to use guessing strategies actively in encountering unknown words also seem to have relatively low English proficiency in reading. The learners who are considered to use considerable grammatical knowledge and have strong self-monitoring in encountering unknown words seem to have relatively high English proficiency in reading. The learners who are considered to use enough grammatical knowledge in encountering unknown words and be able to skip unimportant words and detour unknown words seem to have high English proficiency in reading.

6.2. Limitations and further research

This research was limited in terms of the learners' English proficiency level, and the English proficiency test level. As for the former, discussions hereafter would be necessary as to considering various English proficiency levels. As for the latter, the test used in this research was not categorized. It would be much better to divide the test into three categories: lexical knowledge, grammatical knowledge, and contextual knowledge as Kochiyama (2000) did.

Finally, this research was based on the questionnaire only, so it didn't show learners' actual use of strategies. Further research would be necessary to investigate what kind of hints are easily used and

which of them are effective for inferring unknown words in actual reading.

6.3. Suggestion

In Japan, to the university students at the levels ranging from elementary to intermediate as to English proficiency, instructors should try to devise better methods for learners having and using grammatical knowledge. It would be good for instructors to use natural contexts and attract students' attention to communication in class, but in addition, it would be much better to draw their attention to grammatical inferencing strategies to help them infer the meaning of unknown words.

Instructors should also try to devise better methods for learners using effective strategies in reading comprehension. Knowing the knowledge is not enough and it is important to use it.

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Appendix　The original questionnaire of Mineishi's（1997）

Q1　まず語の形式的特徴からその語の意味を判断する。
Q2　その語を含む文の文法構造に注目してその語の意味を推測する。
Q3　わからない語をいくつかの部分に分けて（例えばunbelievable = un+believe+ableなど）意味を把握しようとする。
Q4　語の品詞が何かをつきとめることで、意味を把握しようとする。
Q5　前後の文脈に書かれた内容からその語の意味を推測する。
Q6　タイトルやイラストの吟味も含め、背景知識から意味を推測する。
Q7　自分の経験や常識から意味を推測する。
Q8　内容についてイメージを思い浮かべる。
Q9　その語を含む文を読み直してみる。
Q10　意味を自問する。
Q11　類義語は何かを考えてみる。
Q12　声に出して読んでみる。
Q13　読む速度を変える。
Q14　自分に話しかける。
Q15　1語1語訳してみる。
Q16　自分の能力や行動に客観的判断を加える。
Q17　自分の理解度をチェックする。
Q18　意味の推測が合っているかどうかチェックする。
Q19　意味の推測が誤っている場合、誤りに気づくことができる。
Q20　推測した意味でつじつまが合わない時、もう一度別の観点から推測してみる。
Q21　重要でないと判断した語は読み飛ばす。
Q22　わからない語は読み飛ばす。
Q23　語を読み飛ばした後も読み続けることができる。
Q24　あきらめて読むのをやめる。
Q25　辞書を使用する。