Japanese Students' Development of Vocabulary Learning Strategies in an English-Medium Content Course

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Abstract

Vocabulary learning is a vital aspect of language learning, and choosing effective vocabulary learning strategies is important. However, Japanese students tend to depend on rote memory strategies. In this study, we investigated the strategies that second-year Japanese university students in an English-medium content course used at the beginning and at the end of the course to learn new words presented in reading assignments, comparing the strategies used at the beginning and end of the semester. The results indicated that the students expanded their strategy use considerably through vocabulary learning strategy instruction in the content course and work on vocabulary learning in the skills courses, which they took at the same time.

1. Introduction

Learning vocabulary is an integral part of learning second/foreign languages, and indeed many Japanese learners of English have spent enormous amount of time working on learning words. This is particularly true of high school students studying for college entrance examinations. Vocabulary is especially important when reading English as well as listening, writing and speaking, because learners need to know approximately 95 per cent of the words to understand English passages (Laufer, 1992), and unless they have this lexical knowledge, it is difficult to fully use reading strategies such as guessing the meaning of words from context or skimming the passages.

On the other hand, although students used a variety of other strategies as well (Kitao & Wakamoto, 2012), Japanese learners' of English heavily rely on rotememory strategies to learn vocabularythat is, repeatedly writing or saying the words (Fujimura, Takizawa, & Wakamoto, 2010; Schmitt, 1997). This tendency also applies to Asian English learners (Ying-Chun Lai, 2009), which may be the influence of strategies used for learning Chinese characters (Kanji) in elementary school. Learning Chinese characters is not an easy task for even native speakers of Japanese, and they are trained to remember them by rote-memory strategies at elementary school.

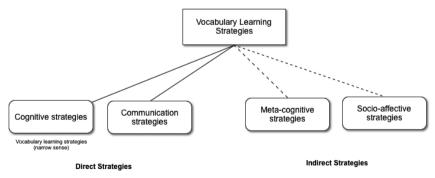
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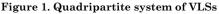
It seems to be effective for remembering the writing system—shapes of characters and their stroke order—but questionable for learning the meanings of words. In this sense, the usefulness of rote-memory strategies might be limited.

When we turn our attention to broader perspectives, vocabulary learning strategies (VLSs) are part of Learner Strategies (LSs), which can be defined as "specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (Oxford, 1990, p. 8). LSs could be categorized into four categories, cognitive, communication, metacognitive, and socio-affective strategies (Wakamoto, 2009), though when focusing on on-line processing of language learning, a tripartite classification scheme-metacognitive, cognitive, and socio-affective-has been used by many researchers (e.g., Robbins, 1996).

Cognitive strategies are used to understand and produce English (Oxford, 1990), and require direct analysis, transformation, or synthesis of learning materials (Rubin, 1987). They are usually the most frequently employed type of strategies (Green & Oxford,

1995), and general public associate learner strategies with cognitive strategies because of its directness and familiarity. VLSs such as rote-memory strategies are included in this group. However, learning new vocabulary through actually communicating with people is also possible, and thus trying to continue the conversation despite the limitations of linguistic knowledge is crucial. Communication strategies such as using circumlocutions or synonyms are employed on these occasions to maintain communication in English. On the other hand, indirect strategies might not obviously be VLSs, but they could facilitate learning new English words. Metacognitive strategies are beyond the cognitive strategies (Oxford, 1990), and used to self-manage one's learning process (Wenden, 1991). As the term "PDCA (Plan-Do-Check-Action) cycle" has been frequently used in/outside academic circles recently, setting goals and planning (Plan) or monitoring and self-evaluation (Check) are the representatives of this group. The fourth type, socio-affective strategies such as encouraging oneself or cooperating with others are used to control emotions or sustain motivation or to assist learning by increasing





Note: A bold line indicates direct connection with VLSs, and a dotted line indicates indirect connection.

interaction with other people (Oxford, 1990). With respect to vocabulary learning, comprehensive quadripartite system seems to be more reasonable (Figure 1).

If Japanese learners' repertoire of vocabulary learning is limited, teaching them to use a greater variety of strategies is necessary because research on LSs to date points out that learner style interacts with the learner's choice of strategies and not all the learners opt for rote-memory strategies though such strategies might be useful under some circumstances. In terms of maintaining motivation to learn English language and vocabulary, sticking to rotememory strategies does not appear to be a good choice. Many college professors observe that students stop studying vocabulary after entering university because they were tired of memorizing words for the entrance examinations. If training of other VLSs is effective, college students will continue to learn vocabulary to improve their English communicative abilities.

However, the issue is not so simple. The subject of strategy training, or strategybased instruction (SBI: Cohen, 2011) has been controversial (Rees-Miller, 1993). To date, research literature has produced mixed results (O' Malley, Chamot, Stewner-Manzanares, Küpper, & Russo, 1995; Dadour & Robbins, 1996; Dörnyei 1995; Kern, 1989; Paulauskas, 1994; Wenden, 1987).

Based on our previous research (Kitao & Wakamoto, 2012), the goal of this study is two-fold: (1) to explore the repertoire of VLSs of Japanese college students, and (2) to identify whether efforts to expand learners' repertoire of VLSs through skills courses and an English-medium content course are successful. Thus the research questions of study are as follows:

- **Research Question 1.** What are the characteristic VLSs of Japanese college students?
- **Research Question 2.** Can we see any effect of instruction on learners' use of VLSs through skills courses and an English-medium content course?

2. Methods

2.1 Overview

We team taught a content course in English for one semester in spring, 2012, which was divided into two sections, language learner strategies and nonverbal communication. In the learner strategies section, students studied the four-part typology of learner strategies described above and considered their own past, present, and future use of strategies. At the beginning of the semester and again at the end of a semester, students were assigned a reading and asked to choose at least five words that they didn't know to learn and to write a 1-2 page essay on how they learned the words. We analyzed the essays to find out what strategies they used and how their strategy use changed from the beginning to the end of the semester.

2.2 Participants

The participants in the study were secondyear students in Studies in English, a content course covering topics related to linguistics and communication, in 2012 at a Kansaiarea women's college. These students were in the Accelerated English Studies (AES) program, a selective program for English majors with high motivation and English proficiency. At the beginning of the semester, 35 students turned in essays, but two were eliminated from the analysis because the students apparently misunderstood what was expected, so a total of 33 essays were analyzed. At the end of the semester, 36 essays were turned in, but one essay was eliminated, and a total of 35 were analyzed.

2.3 Organization of the Course

The course was divided into two sections of seven weeks each, one for linguistics and one for communication. The topic of the linguistics section was language learner strategies, and the topic of the communication section was nonverbal communication.

In the language learner strategy section, students learned about different types of strategies and evaluated their own past and present strategy use, based on the work of Oxford (1990). They also practiced some strategies through group and pair interaction, and they generated ideas for strategies and evaluated the effectiveness of their strategy use. After explicit instruction on LSs in general, the students had several activities to expand their use of VLSs. For example, they were exposed to using images to help them remember words and working with other students: they were given premade cards (a picture of the word on one side and the corresponding English word on the other side) and asked to play with group members like card games (Karuta). In other classes, they received training in using circumlocutions to explain something in English: They were asked to explain Japanese specific foods or festivals in English by combining several words they knew. For example, students working in pairs were asked to explain a Japanese sweet, a rice cake with beans and bean paste inside

(*Mame-mochi*). They also had training to use avoidance and replacement strategies to continue talking in English.

In the first reading assignment for the semester, students were assigned to choose at least five words that they did not know to learn and to write a 1- to 2-page essay about how they learned the words.

In the communication section of the course, students learned about nonverbal communication in general and specific areas on non-verbal communication, such as haptics (the study of touch as nonverbal communication), paralanguage (how the sound of the voice communicates, e.g., though loudness) and clothing. Students learned through class discussions, lectures, and readings. They were assigned to answer content questions about the readings. For the last reading assignment of the semester, they again chose at least 5 words from the reading to learn and wrote a 1- to 2-page essay on the strategies they used to learn them.

2.4 Analyses

We analyzed the students' essays and found references to which strategies students used to learn the words, as well as their general comments on the effectiveness of the strategies, and their experience of learning new vocabulary in English. Strategies were categorized according to Oxford's (1990) inventory. The strategies related to vocabulary learning that were included in the inventory were as follows:

- Part A (Cognitive strategies [Memory strategies])
- 1. I think of relationships between what I already know and new things I learn in English.
- 2. I use new English words in a sentence so

I can remember them.

- 3. I connect the sound of a new English word and an image or picture of the word to help me remember the word.
- 4. I remember a new English word by making a mental picture of a situation in which the word might be used.
- 5. I use rhymes to remember new English words.
- 6. I use flashcards to remember new English words.
- 7. I physically act out new English words.
- 8. I review English lessons often.
- 9. I remember new English words or phrases by remembering their location on the page, on the board, or on a street sign.

Part B (Cognitive strategies)

- 10. I say or write new English words several times.
- 19. I look for words in my own language that are similar to new words in

English.

21. I find the meaning of an English word by dividing it into parts I can understand.

Part C (Communication strategies)

- 24. To understand unfamiliar English words, I make guesses.
- 27. I read English without looking up every new word.

Strategies from the list that were not specifically related to learning vocabulary but which could be applied to learning vocabulary include:

Part B (Cognitive strategies)

- 12. I practice the sounds of English.
- 14. I start conversations in English.
- 17. I wrote notes, messages, letters, or reports in English.

Category	Mode	Strategy	Token	Comments	
	Cog	Keep vocabulary learning notebook	22	Included a variety of information, including definitions, illustrations, sample sentences, and pronunciation	
	Cog	Use a dictionary to check meanings	18	Many students used English-English dictionar- ies, sometimes along with an English-Japanese dictionary	
B-10	\mathbf{Cog}	Write down word repeatedly	17	Often said words out loud while writing	
	Meta	Review periodically	12		
A-2	Cog	Make sentences with new words	9	Some students read sentences aloud	
	Cog	Find/consider synonyms/antonyms	8		
A-6	Cog	Quiz self with flash-cards, transparencies	7	Advantages: could review new words easily; easi- er to carry than notebooks; could change order	
B-10	\mathbf{Cog}	Repeat word aloud	4	Sometimes checking pronunciation beforehand	
	\mathbf{Cog}	Re-read original passage without dictionary	3		
	\mathbf{Cog}	Use words in other classes/conversation	2		
B-21	\mathbf{Cog}	Analyzing parts/root of the word	2		
	Cog	Put words on cards in places she looks often	2	Allows student to review words frequently	
	\mathbf{Cog}	Check pronunciation	2		

Table 1. Strategies used at the beginning of the semester

Note: Cog (Cognitive strategies); Com (Communication strategies); Meta (Metacognitive strategies); and SA (Socio-affective strategies)

Part D (Metacognitive strategies)

37. I have clear goals for improving my English skills.

Strategies which students described but which were not included in this list were also identified and categorized according to the type of strategy.

We also compared the frequency of the use of strategies at the beginning of the semester with those at the end of the semester.

3. Results and Discussion

3.1 Results for the Beginning and End of the Semester

The results of the analyses of the essays

at the beginning and end of the semester are found in Tables 1 and 2.

In addition to the strategies listed in Table 1, the following strategies were used by only one respondent: acting the word out physically (A-7, Cog); marking words she does not know in the reading passage (Cog); ask friends for the meanings of words (SA); and figuring out spelling-sound correspondences (Cog).

At the beginning of the semester, the beginning of their second year at university, students used 17 different strategies (though four of those were used by only one student), 15 of which were cognitive strategies, with a total of 112 tokens.

Category	Mode	Strategy	Token	Comments	
	Cog	Use a dictionary to check meanings	24	Either English-English or English-Japanese or both	
	Cog	Keep vocabulary learning notebook	24	The notebooks included a variety of information, including definition, example, synonyms, illus- tration; easy to study on bus/train	
	Meta	Review periodically	23	Some students did a version of staggered learn- ing, in which they reviewed the words on a schedule	
B-10	Cog	Write down word repeatedly	18	Often wrote while saying aloud	
	Cog	Find/consider synonyms/antonyms	16	Could remember words better, learn more words	
A-6	\mathbf{Cog}	Quiz self with flash-cards, transparencies	16	Easy to study on train or bus	
A-3	\mathbf{Cog}	Draw pictures related to words	14	Makes a strong impression	
A-2	Cog	Make sentences with new words	13		
	Cog	Check pronunciation	7		
	SA	Work with friends (asking for advice, quiz- zing each other, etc.)	7		
	Cog	Mark/list unknown words in the reading	7	Some went back after studying the words to read the passage again	
C-24	Com	Figure out the meaning of the word from context	5		
	\mathbf{Cog}	Use words in other classes/conversation	5		
	Cog	Make a mental picture of the word	5		
B-10	Cog	Repeat word aloud	4		
A-7	Cog	Act out word physically	3		
B-21	Cog	Analyzing parts/root of the word	3	Helps them understand word, apply knowledge to other words	
	Meta	Plan for time to study	1		

Table 2. Strategies used at the end of the semester.

Note: Cog (Cognitive strategies); Com (Communication strategies); Meta (Metacognitive strategies); and SA (Socio-affective strategies)

At the end of the first semester of their second year, students used 18 strategies, 14 of which were cognitive strategies, and a total of 195 tokens.

Keeping a vocabulary learning notebook was an assignment for their writing class, but only 22 of the 33 students mentioned it as a strategy that they used at the beginning of the semester, and only 24 out of 35 at the end of the semester. It could be that they the remaining students did not think of applying the vocabulary book to learning for another class. It could also be that students found advantages in other strategies. For example, some students who used flashcards liked the fact that flashcards allowed them to change the order of the cards as they guizzed themselves (so that they did not just learn them in order), remove words as they learned them, and so on.

Most of the students who mentioned that they used a dictionary to check the meanings of the words used an English-English dictionary. Many students felt that it was more effective to learn the meaning of an English word in English, and, as one student wrote at the end of the semester, "Sometimes, the word in the Japanese-English dictionary is wrong or written in a hackneyed expression, on the other hand, the words in monolingual dictionary is natural English which is spoken by native English speaker " However some of them used an English-Japanese dictionary, feeling that they could get a more exact idea of the meaning of the word from the Japanese translation than from the English definition.

Many of the students who used such combinations as writing down the word and saying it aloud emphasized that they felt it was helpful to use different senses to reinforce the words.

Having methods of learning vocabulary that were portable, whether a notebook, flashcards, or a piece of paper with a transparency was important to students, since they could study on public transportation or when they had just a short period of time to study. For example, one student wrote at the end of the semester, "Next, I used a flash card. This is a very useful tool for me. I put the flash cards to practical use.... I [looked at] them on the bus and between clas periods. When I had even only a minute, I [looked at them]."

Some students made use of their particular situations to make their vocabulary learning more efficient. For example, one student who liked to read used a list of the words she wanted to learn as bookmark in whatever book she was reading. She looked at the list of words before she started reading and after she finished reading, which helped her frequently review the words she was trying to learn.

A few students had obviously given careful thought to vocabulary learning and had developed specific procedures for learning vocabulary. For example, one student used five small boxes, numbered 1 through 5. She made cards with the words she wanted to learn, and she moved the cards from box to box as she learned them and periodically reviewed the words as they moved through the series of boxes. This is a version of staggered learning, an approach in which the learner reviews new information at lengthening intervals until it is learned. Two students had even given names to the procedure they used to learn new words. One was "Remembering Words with Sound and Sight" (RWSS), which involved finding an

example of the pronunciation of the word in her dictionary or on the Internet, repeating the words aloud while writing them down and drawing illustrations of them, and quizzing herself on their meanings.

Many students recognized the importance of reviewing words they were trying to learn, especially at the end of the semester. As one student wrote after describing her vocabulary notebooks, "Finally the most important thing is to carry this vocabulary book at all times and brush up the vocabulary every few days. The accumulations of regular learning vocabulary result in improving my vocabulary." Another student wrote, "I could memorize the words completely, but more and more the time passed, I must forget these words so not to [sic] forget these words I learned I'm going to try to review these words at least one time a week."

3.2 Comparison of the Results

A comparison of the results from the beginning and end of the semester is found in Table 3.

At the beginning of the semester, students listed a total of 112 tokens. At the end, they listed a total of 195 tokens, an increase of 74.1%. Some of this increase may have been due to the teaching of strategies in the Studies in English class. At the beginning of the semester, none of the students were drawing an illustration of the word to help remember it. At the end of the semester, 14 were using this strategy, and several of them specifically mentioned how useful this was in helping them fix the word in their minds. Making a mental picture of the word

		• 0		
Category	Mode	Strategy	Token (Rank) (Beginning)	Token (Rank) (End)
	Cog	Use a dictionary to check meanings	18 (2)	24 (1)
	Cog	Keep vocabulary learning notebook	22 (1)	24 (1)
	Meta	Review periodically	12 (4)	23 (3)
B-10	Cog	Write down word repeatedly	17 (3)	18 (4)
	Cog	Find/consider synonyms/antonyms	8 (6)	16 (5)
A-6	Cog	Quiz self with flash-cards, transparencies	7 (7)	16 (5)
A-3	Cog	Draw pictures related to words	0	14 (7)
A-2	Cog	Make sentences with new words	9 (5)	13 (8)
	Cog	Check pronunciation	2 (9)	7 (9)
	SA	Work with friends (asking for advice, quizzing each other, etc.)	1 (12)	7 (9)
	Cog	Mark/list unknown words in the reading	1 (12)	7 (9)
C-24	Com	Figure out the meaning of the word from context	0	5 (12)
	Cog	Use words in other classes/conversation	2 (9)	5(12)
	Cog	Make a mental picture of the word	0	4 (14)
B-10	Cog	Repeat word aloud	4 (8)	4 (14)
A-7	Cog	Act out word physically	1 (12)	3 (16)
B-21	Cog	Analyzing parts/root of the word	2 (9)	3 (16)
	Meta	Plan for time to study	0	1 (18)
		Re-read original passage without dictionary	3	0
	Cog	Figuring out spelling-sound correspondences	1	0

Table 3. Comparison of the strategies used at the beginning and end of the semester.

Note: Cog (Cognitive strategies); Com (Communication strategies); Meta (Metacognitive strategies); and SA (Socio-affective strategies)

(which increased from 0 to 4) may have been a substitute for drawing, since some students felt drawing was time-consuming. Other increases were likely due to activities in other classes, particularly the writing class, where there was an emphasis on improving students' vocabulary. In the writing class, the teachers emphasized the importance of reviewing words they were trying to learn over and over; emphasized the use of English-English dictionaries; and required students to keep a vocabulary notebook, in which they could include sample sentences and synonyms/antonyms, so this helped explain the increased attention to such strategies as paying attention to synonyms/antonyms and reviewing. Additionally, the textbook used in the students' reading class had activities to teach students to figure out the meanings of unknown words from context, which may explain the increase in the number of students who used this strategy.

Many students commented on the importance of learning vocabulary and of finding strategies that are appropriate for them. For example, once student wrote at the end of the semester, "Learning new words is one of the most important things in your English study. Having large English vocabulary enriches your English expression, and also makes your conversation smoothly. However it is dull and boring and sometimes it's hard to keep studying them constantly. Making your own strategy or finding the best one for you to learn new words is important, because it will make your English study more fun, and enjoying study is the most important and efficient way to improve your English."

Another student concluded her explanation by writing, "In conclusion, I acquired a lot of strategies thanks to this class. And to practice them, I found suitable strategies and unsuitable strategies for me. To tell the difference and use many strategies mixing is also important I think."

4. Conclusion

Our first research question involved Japanese college students' repertoire of VLSs, and we were especially interested in what VLSs students use at the beginning of the course. Based on the results of our previous research (Kitao & Wakamoto, 2012), we had assumed that mechanical repetition strategies such as writing down repeatedly would be the most frequently used strategies. Although using a dictionary or keeping vocabulary notebook was more frequently used, we have confirmed that Japanese college students make use of rotememory strategies very frequently (Table 3). We also confirmed that participants of this study used a variety of strategies in addition to bedrock strategies: reviewing periodically, making sentences with new words, for example, or quizzing themselves with flashcards/transparencies, though their frequency was not high (Table 3). We could state that rote-memory strategies are bedrock strategies for Japanese learners of English from junior high school students through college students as well as for other Asian learners (Fujimura, Takizawa, & Wakamoto, 2010; Ying-Chun Lai, 2009). Japanese learners of English seem to prefer rote-memory strategies in that they are easy to use, and learners do not have to remember how to use them. Mechanical repetition is not interesting, but empowers learners somehow when they really need to remember words.

Our second research question was to see how students can be encouraged to

broaden their repertoire of VLSs through an English-medium content course and skills courses. As the result of one-semester course training, we observed interesting changes in students' use of VLSs. More students have come to draw pictures or make a mental picture of the words to learn English words and they have become to work with others. Thinking of the fact that very few if any of the students used those strategies at the beginning of the semester (Table 3), this is a big change. They must have realized that working with others promotes their motivation, and that they do not have to work alone anymore. The influence also could be observed in the increase of strategies of reviewing periodically and finding synonyms. As students were taught how to use circumlocutions or how metacognitive strategies are important, it is assumed that they have broadened their thought to remembering the related words (synonyms or antonyms) or studying with plans and reflections. In response to our second research questions, we argue that English-medium content course and skills classes positively influenced students' use of strategies.

However, this study has limitations. Due to limitations in our situation, we were not able to use a control group, and the students involved in the research had other influences in addition to this course, including skills courses in which vocabulary learning was emphasized. In addition, although the changes of strategy use were clear, we did not analyze changes in individual students' strategies, so we do not know whether all the participants changed their use of VLSs. As the choice of these strategies is affected by various learners' factors such as learner styles (Wakamoto, 2007), it might be useful if future research takes this into consideration. Another limitation was that we do not know whether a broader range of VLS use has really contributed to improving the development of students' vocabulary. Future research might be designed so that these limitations were fully considered.

Learning English in an EFL context is not easy in many ways. One limitation is a lack of opportunity for input and output and in maintaining motivation to learn English. With respect to vocabulary learning, however, even in an ESL context learners need to use VLSs to increase lexical knowledge because learners cannot remember words through mere input or output. In any learning context, if learners find appropriate and enjoyable VLSs for them in addition to bedrock strategies, it helps them find motivation to continue with their study of English. In that sense, English-medium content courses in which students learn about and apply VLSs can have some room to contribute to learners so that they could increase their repertoire of VLSs and encounter their bestfit strategies.

*This work was supported by Grant-in-Aid for Challenging Exploratory Research (23652149) given to the first author.

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