Effects of Strategy Instruction
in the Learning of English Vocabulary
by Japanese Junior High School Students

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Abstract

In the last few decades, second language vocabulary acquisition has been an interesting topic of discussion for researchers and teachers. A general recognition has been achieved that vocabulary learning is multifaceted and it contains much more than a simple configuration of form and meaning. Vocabulary learning is not a peripheral area in second language learning but is one of its main areas.

English language teaching in Japan has been conducted under the guidance of *the Course of Study for Lower Secondary School Foreign Languages*. According to the guide, teachers have to teach students about nine hundred words at the junior high school level. These are very frequent and fundamental words for communication. It should be noted, however, that all of the words are not pre-selected by *the Course of Study*. In fact, only about one hundred words are pre-selected, and the other about eight hundred words are left to be selected. For this reason, vocabulary learning becomes problematic.

With respect to English learning by beginners in the EFL environment in Japan, little attention has been given to the issue of vocabulary learning. What English words should students learn? How do students learn English words? In order to answer these questions, we should pay more attention to vocabulary learning itself and vocabulary learning strategies.

The purpose of this thesis is, therefore, to examine the actual situation of English vocabulary learning by Japanese junior high school students and to investigate the effects of strategy training in the learning of

English vocabulary.

In Chapter 1 of this paper, we identify the present problems on vocabulary learning in Japan.

In Chapter 2, we review earlier research findings concerning vocabulary learning strategies. It is confirmed in this chapter that there are several problems present with current vocabulary learning strategies.

In Chapter 3, we investigate the actual situation of vocabulary learning strategies use employed by two hundred students in a Japanese junior high school. We call the investigation of this chapter Study 1. The aim of Study 1 is to investigate the vocabulary learning strategies that these Japanese junior high school students normally use when they learn English words. We use a questionnaire on vocabulary learning strategies in order to collect data on the strategies used by them.

We also administer Vocabulary Size Test (Mochizuki 1998, Mochizuki et al., 2003). From the results of the test, we investigate the differences of the actual situation of vocabulary learning strategies use between a group with a higher vocabulary level and one with a lower vocabulary level. Based on the data gathered on the vocabulary learning strategies by the Japanese junior high school students, we differentiate between the strategies used and strategies unused by them. Furthermore, we identify the differences of strategy use by an upper and a lower level vocabulary group.

In Chapter 4, we examine the effects of strategy instruction on the learning of English vocabulary experimentally with the same Japanese junior high school students as beginners. Few attempts have so far been

made on the effects of strategy training especially for beginners in the classroom setting. Therefore, research with strategy training is necessary. We discuss the issue of how strategy instruction affects the acquisition of English vocabulary. We call this research with strategy instruction Study 2.

In Study 2, we examine the effects of instruction of three types of vocabulary learning strategies with the Japanese junior high school students. We divide the subjects into three groups according to the type of instruction they receive: Group 1 receives instruction of only "verbal and written repetition of words", Group 2 is given instruction of a metacognitive strategy "testing oneself with word tests" together with "verbal and written repetition", and Group 3 has instruction of a memory strategy, "semantic and collocational elaboration," in addition to "verbal and written repetition". Each type of strategy instruction is given to each group two times in three classes and the subjects learn ten unknown words during each single treatment. In order to confirm the acquisition of the ten unknown words each time, a vocabulary test is given immediately after the treatment for each group. The data from the vocabulary tests is collected and analyzed in terms of the effects of strategy instruction.

The results of analysis show the effects of strategy instruction in the learning of English vocabulary, especially in regard to the types of strategy instruction involving the metacognitive and memory vocabulary learning strategies.

The metacognitive vocabulary learning strategy instruction has been found effective for the students. Furthermore, vocabulary acquisition is

promoted by the combining of the metacognitive strategy, "testing oneself with word tests," with the cognitive vocabulary learning strategies, "verbal and written repetition".

We have also confirmed the effect of the strategy of word association by "semantic and collocational elaboration". The effect of this strategy instruction in Group 3, however, is different from that of the strategy instruction in Group 2. It can be expected that the subjects in Group 3 processed the new words more deeply because the strategy of "semantic and collocational elaboration" involves associations with the words that the subjects had already known conceptually and semantically. We discuss this effect in terms of the two aspects of vocabulary comprehension and production in acquiring target words.

Moreover these results also indicate the difference in time which is needed to acquire the vocabulary learning strategy by the subjects in Groups 2 and 3. The instruction of the metacognitive vocabulary learning strategy works immediately. On the other hand, the instruction of the memory vocabulary learning strategy involving "semantic and collocational elaboration" requires some time to take effect.

In Chapter 5, based on the results of the investigation of actual use of vocabulary learning strategies by the Japanese junior high school students and the experiment of strategy instruction on them, we conclude this thesis by stating that vocabulary strategy instruction is highly effective for Japanese junior high school students as beginners leaning English vocabulary.

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Chapter 1

INTRODUCTION

1.1 Vocabulary and Language Learning

In the last few decades, second language vocabulary acquisition has been an interesting topic of discussion for researchers and teachers. A general recognition has been achieved that vocabulary learning is multifaceted and it contains much more than a simple configuration of form and meaning.

Although vocabulary and vocabulary learning have been an object of study, it is often said that vocabulary is not as important as grammar or other areas of learning another language. Folse (2004) points out that it is a "myth". In this case, the word "myth" does not mean an ancient story but an idea or story that many people tend to believe, which, in fact, is not true. He emphasizes the importance of vocabulary learning in second language learning.

Some attempts have been also made by other researchers to show the importance of vocabulary and vocabulary learning. Lewis (1993), for example, argues that language consists of grammatical lexis, not lexicalized grammar. According to Lewis's view, teaching two or three words which frequently occur together is based on lexical elements, not on grammar which is based on rules. Lexical elements have both meaning and function within language. He points out that teaching such the vocabulary takes more class time than teaching grammar. Furthermore he claims that while little communication may be possible without grammar, no communication

is possible without vocabulary. Similarly Barcroft (2004) states that a lack of grammatical knowledge sometimes impedes successful transmission of meaning, however, an absence of vocabulary often impedes the transmission of meaning completely. McCarthy (1990) also contends that no matter how much students learn the grammar of a second language, no matter how successfully they master its sounds, without words to express a wider range of meanings, communication in the language just cannot happen in any meaningful way.

Macaro (2003) also points out that vocabulary helps us achieve things. The more words we can recognize in a spoken or written text, the more things we can understand. A sufficient vocabulary of a second language is needed to communicate with other people in second language. Vocabulary and vocabulary learning may be the most important components for learners. Second language learners need good vocabulary knowledge. It is indispensable in second language learning. For this reason, vocabulary learning is not a peripheral area in second language learning but one of the central areas of learning.

1.2 Vocabulary for Beginners

There are two different environments in learning another language. One is a second language environment in which people learn another language as a second language (ESL). The other is a foreign language environment in which people learn it as a foreign language. In Japan, students at junior high schools learn English as a foreign language (EFL). In an EFL environment, there is little natural exposure to English and

learners have very few chances to use English in their daily lives. English language learning at school is the main source for these learners. Thus language teachers play an important and crucial role for learners' language learning in a foreign language environment.

In Japan the compulsory curriculum for English education is decided by *the Course of Study for Lower Secondary School Foreign Languages.* This book sets the guidelines for teaching foreign languages at school and consists of several parts. One such part addresses the vocabulary that teachers must teach students at the junior high school level. According to it, teachers have to teach junior high school level students about nine-hundred words. These are very fundamental and high frequency words for communication. It should be noted, however, that all of the words are not pre-selected by *the Course of Study.* In fact, only one hundred words are pre-selected by *the Course of Study,* and about eight hundred words are not. These eight hundred words are fundamental words which are concerned with our daily life such as seasons, months, days of the week, temporal words, weather, numbers (odd and ordinal numbers), family and so on. Thus, what words we should teach is not decided systematically. For this reason, vocabulary learning becomes problematic.

Furthermore teachers must teach students only at school. Additionally they have only three classes a week. It is very hard for beginners to learn the fundamental words of English in such a situation.

Students have to learn not only the vocabulary itself and but also how to learn the vocabulary. What words should students learn? How do students learn the English vocabulary? To put it another way; what words

do teachers have to teach? How do teachers teach the vocabulary? There are a lot of problems with vocabulary. Consequently, a systematic way of teaching the approximately nine-hundred words is required. We should pay more attention to the vocabulary and methods of vocabulary teaching.

1.3 The Purpose of the Thesis

With respect to English learning by beginners in the EFL environment in Japan, little attention has been given to the issues of vocabulary learning. The purpose of this thesis is, therefore, to examine the actual situation of English vocabulary learning by Japanese junior high school students and to investigate the effects of strategy training in the learning of the English vocabulary.

In Study 1, we investigate the strategies use employed by Japanese junior high school students. We use a questionnaire on vocabulary learning strategies in order to collect information of vocabulary learning strategies used by them. We also administer a *Vocabulary Size Test* (Mochizuki 1998, Mochizuki et al. 2003) in order to decide their levels of the knowledge of the English vocabulary. In Study 2, we investigate, experimentally, the effects of strategy instruction on the learning of the English vocabulary by them. We discuss the issue of how strategy instruction affects the acquisition of English vocabulary by Japanese junior high school students.

Chapter 2

EARLIER LITERATURE ON VOCABULARY LEARNING

2.1 Vocabulary Acquisition Process

We will begin by considering the vocabulary acquisition process. What does it mean to know a new word? How can we acquire a new word? Vocabulary acquisition has some aspects and processes. These aspects and processes are not simple.

As a significant indication of the acquisition of a new word, Read (2000) claims that to know a new word means to be able to spell it out. However, this is only an indication of having acquired a word. Daniel (2000) claims that vocabulary acquisition is a series of processes.

Numerous attempts for identifying vocabulary acquisition processes have been made by several researchers. Paribakht and Wesche (1993), for example, point out that vocabulary acquisition has five processes which constitute their Vocabulary Knowledge Scale beginning with "I have never seen this word". This scale is for learners. Through it learners can know what level they have achieved.

Brown and Payne (1994) also distinguish five stages of vocabulary acquisition, from 1 "Having sources for encountering new words" to 5 "Using the word".

Hulstijn (2001) also distinguishes three broad processes. First, beginning second language learners, in learning the first few hundred second language vocabulary items, often appear to connect the second language word forms directly to the corresponding first language word forms.

Secondly, the second language word forms are directly linked to their meanings in a later stage. Thirdly, second lexical entries are often coded as phonological or orthographic extensions of the first language lexical entries.

Nation (2001) also identifies the following three processes:

1. Noticing: Noticing involves decontexualization. Decontextualization occurs when learners give attention to language items as a part of the language rather than a part of the message.

2. Retrieval: Retrieval can enhance second language vocabulary retention.

3. Creative and generative use: It is conducive to enhancing word retention.

To sum up, there are some perspectives that have looked at the vocabulary acquisition processes. However, an important process is that of acquiring form and meaning. Acquiring form and meaning, or acquiring connections between form and meaning, is the main process in foreign language vocabulary acquisition. It is this area that we will focus on next.

2.2 Acquiring Form and Meaning

As for the acquisition of form and meaning, it is generally agreed that learners acquire form before meaning. Read (2000) points out that learners at a low level store words according to the sound of words, whereas at more advanced levels, words are stored according to their meanings.

Therefore some researchers focus on word forms in vocabulary acquisition. Gu (2005), for example, proposes that structural and formal aspects of vocabulary are of crucial importance to foreign language vocabulary acquisition. Barcroft (2002) also argues that focusing extensively on the meanings of new second language words sometimes can

inhibit learning the formal properties of these words.

Additionally some researchers put forth the idea that vocabulary acquisition is concerned with the learnability of word forms. Laufer (1997) points out that factors affecting word learnability are dominated by word forms such as pronounceability, orthography or length of words. In other words, learners pay more attention to word forms than to meanings at the early stage of learning.

With these points in mind, we can look at the acquisition of meanings of new words. Acquiring word meanings is a very complex process, and as such can lead to no small amount of difficulties for learners, especially beginners. The central point is the connections between form and meaning in memory.

Aitchison (2003) proposes that acquiring word meanings has three steps: labeling, packaging, and network building. In his point of view, labeling and packaging mean adding word meanings to the lexical store in the brain. By network building, word meanings are recognized. Second language learners must define the semantic boundary of each word meaning, but they usually have an advantage of already knowing the relevant concepts. However, they may have troubles initially in setting the meaning boundary of a word with respect to that of the corresponding first language word.

Jiang (2000) also claims the importance of establishing form-meaning connections in three steps: the formal stage, the first language lemma mediation stage when the lemma information of the first language counterpart is copied onto the second language lexical entry and mediates

second language use, and the second language integration stage when semantic, syntactic, morphological specifications are integrated in the lexical entry. He points out that some learners stay at stage 2 because the link between a second language word and its concept is weak. In other words, some words are very difficult for learners to acquire in terms of learning their complete meanings.

2.3 Language Learning Strategies

2.3.1 Individual Differences and Language Learning Strategies

Language learning strategies provide a starting-point on vocabulary learning strategies. Individual differences in second language learning usually include four areas. They are "learning strategies", "learning style", "modality preferences" and "foreign language aptitude" (Skehan, 1989 and Willing, 1989). Figure 2.1 indicates a general model of individual differences in language learning (Skehan, 1998). This model helps to define language learning strategies.
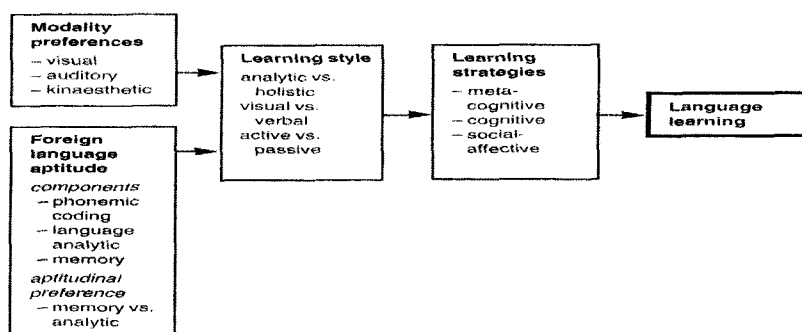
Figure 2.1 Learner differences and language learning

(Based on Skehan, 1998)

In Skehan (1998), modality preferences refer to the learners' general

predisposition to use visual, auditory, or action approaches to learning. Learning style indicates the characteristic manner which an individual chooses to approach a learning task.

Modality preferences and foreign language aptitude affect the learning styles of learners. The same can be said of the relationship between learning styles and learning strategies. Learning strategies affect language learning to a considerable extent.

To summarize, learning strategies are affected by the other three components: learning style, modality preferences, and foreign language aptitude.

2.3.2 General View of Language Learning Strategies

What are language learning strategies? What are language learning strategies for? Various explanations have been given to these questions.

Oxford (1990) and O'Malley and Chamot (1990), for example, show in full detail what language learning strategies are. Oxford (1990) defines them as actions, behaviors, steps, or techniques students use, often unconsciously, to improve their progress in apprehending, internalizing, and using a second language. Furthermore, language learning strategies are defined by O'Malley and Chamot (1990) as special thoughts or behaviors that individual use to comprehend, or retain new information. Moreover Jones (1995) also claims that language learning strategies have become recognized as a prime ingredient in language learning. Language learning strategies are therefore relevant to and essential in language learning.

Oxford (1990) and O'Malley and Chamot (1990) have developed

respective frameworks of language learning strategies. According to Oxford (1990), language learning strategies can be divided into two categories: direct and indirect. Furthermore direct and indirect strategies are respectively subdivided into three components. Direct language learning strategies contain memory, cognitive, and compensation strategies. Indirect language learning strategies involve metacognitive, affective, and social strategies. O'Malley and Chamot (1990) divide language learning strategies into three major types: metacognitive, cognitive, and social/affective. Later we shall try to give a more precise account of each of these components of strategies of language learning.

The area of language learning strategy research, as we have seen, has dramatically grown in importance over the last twenty-five years. Consequently language learning strategies offer the key to an understanding of vocabulary learning strategies. We will focus on vocabulary learning strategies of a second language based on the discussion of the broader language learning strategies.

2.4 Vocabulary Learning Strategies
2.4.1 General Features of Vocabulary Learning Strategies

Several researchers have pointed out some key features of vocabulary learning strategies. Oxford and Scarcella (1994), for example, claim that vocabulary learning strategies make learners more independent of the teacher, and serve as useful tools that can be used both inside and outside the classroom. Gu (2003) states that vocabulary learning strategies are a series of actions a learner takes to facilitate the completion of a learning task.

Thus vocabulary learning strategies play an important role in the learning of vocabulary.

Furthermore there are several aspects of using vocabulary learning strategies. For example, Green and Oxford (1995) state that active use of strategies helps students attain higher proficiency. Moreover, Cohen and Aphek (1981) propose a distinction between deeper and shallower vocabulary learning strategies. According to them, shallower vocabulary learning strategies may be more suitable for beginners because they contain fewer materials that may distract a novice, whereas intermediate or advanced learners can benefit from contexts usually included in deeper vocabulary learning strategies. Similarly, Schmitt (1997, 2000) also reports the use of deeper and shallower vocabulary learning strategies. He states that intermediate or advanced learners tend to use more complex and deeper vocabulary learning strategies, such as analysis of a new word or guessing from contexts, than beginners do.

Furthermore, Nation (2001) stresses the importance of vocabulary learning strategies which are used in the learning of high-frequency words. In his point of view, high-frequency words should probably be taught explicitly, since to learn these words mainly requires strategies for review or consolidation of them.

Finally Schmitt (1997) proposes a very interesting suggestion. According to his proposition, the use of vocabulary learning strategies is influenced by factors such as learner's educational and cultural background. This is especially noteworthy in the case of Japanese learners of English who learn English as a foreign language.

2.4.2 Taxonomy of Vocabulary Learning Strategies

There are some attempts to classify vocabulary learning strategies. This section will first overview several conclusions about vocabulary learning taxonomies. Then we will introduce a taxonomy of vocabulary learning strategies proposed by Schmitt (1997).

Skehan (1989) points out that the area of learner strategies is still in an embryonic state. However, it is important to keep in mind that in 1990, two books about learning strategies were published, as we have mentioned before. They were written by Oxford (1990) and O'Malley and Chamot (1990). They have proposed their own taxonomies. Consequently they have contributed to a better characterization of the taxonomy of vocabulary learning strategies.

Several articles have also been devoted to the study of taxonomy of vocabulary learning strategies. Stoffer (1995), for example, shows considerable promise in providing an empirical basis for categorizing strategies. Using factor analysis of fifty-three items of vocabulary learning strategies, she clusters them into nine groups, including "Strategies used to create mental linkage", or "Memory strategy" and so on. Furthermore, Purpula (1999) divides storing and memory strategies into six areas including "repeating" and "using mechanical means" et al. Those six strategies may be grouped into three areas: cognitive strategies that are less obviously linked to mental manipulation, memory strategies that are somewhat closer to traditional mnemonic techniques, and social strategies.

Moreover more basic and helpful distinctions in vocabulary learning strategies have been suggested by Cook and Mayer (1983) and Nation (1990).

One is vocabulary learning strategies for the initial discovery of a word's meaning. They are labeled Discovery Strategies. The other is vocabulary learning strategies for remembering the word once it has been introduced. They are labeled Consolidation Strategies. With respect to the issue of strategy classification, most vocabulary learning strategies can be classified into these two categories.

In his recent survey on the taxonomy of vocabulary learning strategies, Schmitt (1997) has taken some important steps in this direction. Figure 2.2 indicates the taxonomy of vocabulary learning strategies based on Schmitt (1997). In his taxonomy, strategies are organized according to both the system which is proposed by Oxford (1990) and Discovery/Consolidation Strategies by Cook and Mayer (1983) and Nation (1990).

```
                                                ┌─── Determination strategies
            ┌─── Discovery strategies ──────┤
            │                                   └─── Social strategies
   ─────────┤
            │                                   ┌─── Social strategies
            │                                   ├─── Memory strategies
            └─── Consolidation strategies ───┤
                                                ├─── Cognitive strategies
                                                └─── Metacognitive strategies
```
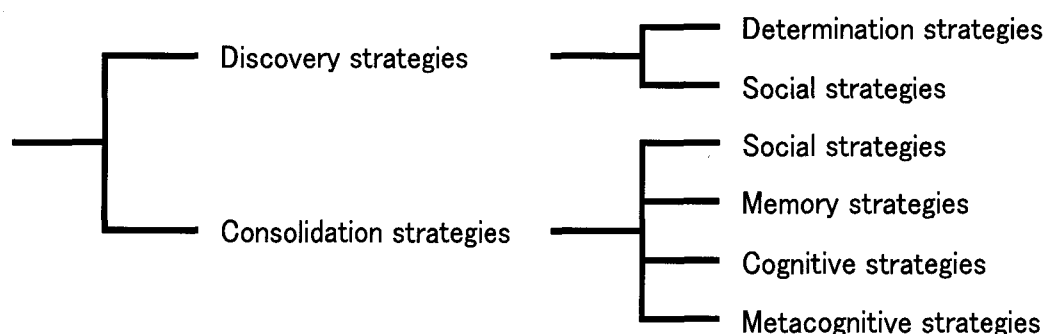
Figure 2.2 Taxonomy of vocabulary learning strategies

(Based on Schmitt, 1997)

According to Schmitt's taxonomy, Discovery Strategies are divided into two categories. They are Determination Strategies (DET) and Social Strategies (SOC). Determination Strategies facilitate gaining knowledge of a new word. Social Strategies entail interaction with other people to improve language learning. Interaction, in this case, means to know the

meaning of a new word in the framework of Social Strategies as one of the components of Discovery Strategies. Thus this is the way to discover a new meaning using the Social Strategy of asking someone who knows the meaning.

Similarly Consolidation Strategies fall into four categories. Social Strategies (SOC) include group work which can be used to learn or practice vocabulary items. Memory Strategies (MEM) are traditionally known as mnemonic techniques and involve relating the word to be retained with some previous knowledge. Cognitive Strategies (COG) exhibit the common function of manipulation of the target languages by learners. Finally Metacognitive Strategies (MET) involve a conscious overview of the learning process and making decisions about planning, monitoring, or evaluating the best way to study. Metacognitive Strategies are used by students to control and evaluate their own learning by having an overview of the learning process in general.

Finally an important addition is to be made to what we have said about the taxonomy of vocabulary learning strategies, that of the relationships among the vocabulary learning strategies themselves. There is a brief reference to the relationship between cognitive and metacognitive vocabulary learning strategy use in Gu (2005). He proposes that vocabulary learning is a dynamic process involving metacognitive choice and cognitive implementation of a whole spectrum of strategies that a learner decides to use.

2.4.3 Incidental and Intentional Learning

Vocabulary learning strategies can be also classified into two main categories in terms of intentionality. One is incidental vocabulary learning strategies. The other is intentional vocabulary learning strategies. They are also referred to as the implicit and explicit learning of vocabulary respectively. With regard to vocabulary acquisition research of a second language, many researchers tend to use the terms of incidental and intentional learning rather than the implicit and explicit learning. Accordingly, herein we use the terms incidental and intentional vocabulary learning, except for in quotations.

Schmidt (2001) points out succinctly that incidental learning means learning without awareness, and intentional learning indicates learning with awareness. He emphasizes attention as the mechanism that controls access to awareness. Similarly incidental vocabulary learning means vocabulary learning without awareness and intentional vocabulary learning indicates vocabulary learning with awareness.

By incidental learning, learners can acquire the target language vocabulary as a byproduct of learning activities. Examples of this are the learning of new words through reading and guessing from contexts. In contrast, with intentional vocabulary learning strategies, learners can acquire the target vocabulary as the result of designed, planned and intended vocabulary learning activities. Vocabulary list learning and written or verbal repetition of a new word are notable examples of intentional learning.

Hulstijn (2001) points out that it is not important for learners to make

a clear distinction between incidental and intentional vocabulary learning strategies. Furthermore he proposes that the quality of learner's mental processing is important in the learning of a new word.

However, incidental and intentional vocabulary learning strategies have apparently several different features when beginners acquire a new word. We discuss these features in the sections to follow.

To begin with, we focus on the features of incidental vocabulary learning strategies. Oxford and Crookall (1990) propose that incidental vocabulary learning strategies through second language use is essential for language development. Indeed it is very useful for advanced learners, but it is debatable whether or not it is useful for beginners who do not yet know the high-frequency words of the target language.

Nagy, Herman and Anderson (1985) report that children acquire about fifteen percent of unknown words incidentally. This is the case of first language acquisition. In second language acquisition, Yun (1989) proposes that learners can acquire sixteen percent of unknown words incidentally. In reality, however, it may be impossible for beginners to acquire most of the words incidentally.

Some researchers (for example, Nation 1982, Oxford and Scarcella 1994) point out that intentional vocabulary learning is more available than incidental vocabulary learning in relation to word retention. Schmidt (1990) proposes that learners do not acquire vocabulary items or other elements of the target language unless they consciously notice them. Thus intentional vocabulary learning strategies are more effective because of learners' awareness or noticing.

Much has been written by other researchers about the importance of intentional vocabulary learning strategies for beginners. Schmitt (2000), for examples, states that explicit vocabulary teaching is probably essential for the most frequent words of any second language because they are prerequisite for language use. Moreover he claims that it is probably necessary to explicitly teach all words until beginners have an enough vocabulary to start making use of the contexts for learning unknown words.

Furthermore Nation (1995) points out that teachers should teach frequent words explicitly to beginners who do not know the frequent words of a second language. Additionally he proposes that intentional vocabulary learning is very valuable in terms of cost and benefit.

Judging from the discussion above, intentional vocabulary learning may offer the key to the understanding of vocabulary acquisition of beginners who do not have a sufficient vocabulary.

2.4.4 Contextualized and Decontextualized Vocabulary Learning Strategies

Our vocabulary teaching has so far been greatly influenced by the perspective of incidental learning which comes from the top-down, naturalistic and communicative approaches. Textbooks emphasize guessing word meanings from contexts as the primary vocabulary skill. Is guessing from contexts the best way to learn? Is it the best vocabulary learning strategy? This drives us to the question whether contextualized or decontextualized vocabulary learning strategies are good for learners, especially for beginners.

First of all, we have to acknowledge the types of vocabulary learning strategies. Vocabulary learning strategies fall into three categories in terms of their relation to contexts. They are decontexualized, partially contextualized, and, fully contextualized strategies (Oxford and Scarcell, 1994). However, we will focus only on two categories of decontexualized and contexualized because this thesis is concerned with vocabulary acquisition by beginners of learning English in Japan who do not have an enough vocabulary of the language.

We will begin by considering the effectiveness of contextualized vocabulary learning strategies for beginners. Guessing from contexts is one of the typical examples of contextualized vocabulary learning strategies. Read (2000) points out that guessing from contexts is a desirable strategy because it involves deeper processing. The assumption that guessing from contexts is effectively available to learners is now widely accepted. However, this is applicable only in the case of intermediate or advanced learners who have an enough vocabulary, and thus it is not applicable for beginners.

There is evidence in plenty to show that contextualized vocabulary learning strategies are not usually available for beginners. Nation (2001) argues that the proportion of unknown words which can be guessed from context is quite low. In his research, learners can read the context if they know ninety-five percent of all the words and they can guess only one unknown word in five unknown words during reading. Moreover Nassaji (2003) states that correct guessing is low (26%) even when learners use all strategies available.

Furthermore Haynes (1993) proposes that guessing from context successfully depends a great deal on the number of other unknown words. In addition, Folse (2004) argues that guessing from contexts is a reading-improvement strategy, not a vocabulary-improvement strategy.

A considerable number of studies by other researchers have been made on the demerits of this type of strategy. Cohen and Aphek (1980), for example, claim that only advanced learners can use the strategy of guessing from contexts completely. Sökman (1997) points out several demerits of guessing from contexts. For example, acquiring vocabulary mainly through guessing from contexts is likely to be a very slow process, or learners' comprehension may still be low due to insufficient vocabulary knowledge even when they are trained to use flexible reading strategies to guess words in context, or that guessing from contexts does not necessarily result in long-term retention.

It follows from what has been said that contextualized vocabulary learning strategies are not available for beginners because they do not have an enough vocabulary.

We will shift the emphasis away from contextualized vocabulary learning strategies to decontextualized vocabulary learning strategies. Examples of these decontextualized strategies are learning from word cards and lists, written repetition, or verbal repetition. Learners' attention or noticing is focused on vocabulary items by using decontexualized vocabulary learning strategies. Are decontextualized vocabulary learning strategies available for beginners?

Several articles have devoted to the study of decontexualized

vocabulary learning strategies. Nation (2001), for example, claims that learning from word cards is an effective way of learning the underlying concept. However, some researchers object to this because the meaning of a word comes from contexts in which it occurs. To such objections, Nation replies that decontexualized vocabulary learning strategies are only available for beginners who do not know high-frequency words.

Furthermore Beaton, Gruneberg and Ellis (1995) propose that direct and decontexualized learning from word cards is efficient and highly effective. Ellis (1994, 1995) points out that learning the word meaning and linking the word form to the meaning are especially taught as explicit conscious learning.

Moreover, Qian (1996) states that the effect of decontextualized vocabulary learning on later recall is clearly stronger than contextualized vocabulary learning. He argues decontexualized vocabulary learning strategies with respect to the relationship between vocabulary learning and memory.

As we have seen above, decontextualized strategies are available for beginners to acquire the target vocabulary. It should be noted, however, that several researchers claim that strategy use must be considered with respect to the level of learners' development. Coady (1997) and Anezaki and Hirano (2000), for example, point out that there should be a significant emphasis in decontextualized learning at an early stage of acquisition and that more context-based learning should be introduced in later stages.

2.4.5 Successful Learners

It may be worth showing how successful learners learn the vocabulary of a second/foreign language.

There are two approaches to successful learner studies. One is that successful learners are identified and interviewed or asked to complete a written questionnaire. The other is that comparisons are made between successful and less successful learners.

There are numerous discussions on this topic. Sanaoui (1995), for example, points out that good learners are conscious of their learning and take steps to regulate their learning and poor learners in general lack their awareness and control. Similarly Ahmed (1989) claims in his study that subjects in the three good learners' groups used a variety of strategies and they were aware of their learning. Successful learners are conscious of their own learning. This is an important fact to stress.

As for vocabulary learning strategies, Ahmed (1989) proposes that successful learners use vocabulary learning strategies more than poor learners do. Successful learners have several vocabulary learning strategies available for use.

Other researchers discuss it in detail. Takeuchi (2003) points out that extra attention has been paid to pronunciation in their vocabulary build-up by good language learners and they first check the pronunciation of a new word and then memorize the word by both reading it aloud and writing it down many times.

Furthermore Gu and Johnson (1996) argue that as the best strategy for vocabulary retention, successful learners tend to use a variety of memory

strategies in combination. Additionally they propose that more successful learners tend to use both cognitive strategies and metacognitive strategies such as self-initiation or selective attention. More successful learners use vocabulary learning strategies in a combination of cognitive strategies and metacognitive strategies. Strategy combination plays an important role in the use of vocabulary learning strategies (Macaro, 2003).

A large number of studies have been made on successful learners, and they give us several suggestions for vocabulary learning. There are two consensuses on successful learners. One is that successful learners have a richer repertoire of vocabulary learning strategies than unsuccessful learners. The other is that successful learners are more active strategy users than their unsuccessful counterparts. A close look at successful or unsuccessful learners will reveal what vocabulary learning strategies learners use and how they acquire the target vocabulary.

2.4.6 Strategy Instruction and Training

Vocabulary may be one of the most important components for learners (Gass and Selinker, 1994). Laufer (1997) claims that lexis is now recognized as central to any language acquisition process. We are now able to see the importance of vocabulary learning and the instruction of vocabulary learning strategies.

Vocabulary learning is not only concerned with vocabulary learning itself, but also with vocabulary learning strategies. It may be necessary to explicitly teach beginners all words until they have an enough vocabulary to enable them to use their vocabulary knowledge to infer unknown words they

meet in context. Similarly it may also be necessary to explicitly teach them vocabulary learning strategies until they have a sufficient vocabulary (Schmitt, 2000).

Although some studies have been made on strategy instruction of vocabulary learning, little is known about the effects of strategy training, especially for beginners who do not have an enough vocabulary or vocabulary learning strategies available for use. We will begin by considering the effects of strategy training.

With regard to learning strategies, some attempts have been made by researchers to show the effects of strategy training. Oxford (1993), for example, claims that it is clear that strategy training is a complex activity and specialists in this area are just beginning to understand how to enhance the learning strategies of particular groups of students in the most effective way.

Strategy training can be classified into three groups (Oxford, 1990). They are Awareness training, One-time strategy training, and Long-term strategy training. To put it most simply, Awareness training is also known as consciousness-raising or familiarization training. One-time strategy training involves the learning and practice of one or more strategies with actual language tasks and gives learners information on the value of the strategy. Finally, Long-term strategy training is more prolonged and covers a great number of strategies. Although this categorization is very rough, each of these three groups represents an outline of strategy training.

These three types of strategy training direct our attention to vocabulary learning strategies. Oxford and Scarcella (1994), for example,

point out that learners play an active role in increasing their vocabulary, and that instruction helps the learner build their vocabulary. Furthermore they claim, in detail, that it is crucial to teach students explicit strategies for learning vocabulary and it is even appropriate at times to use partially decontextualized activities.

Additionally Sternberg (1987) proposes that one of the main classroom activities for teaching vocabulary is the direct teaching of strategies related to vocabulary. Nation (2001) suggests five principles of effective second language vocabulary instruction focusing on acquiring the relationship between the form and the meaning of a new word.

Moreover, Schmitt (2000) also reports that although it may not be impossible for some learners to use complex vocabulary learning strategies such as guessing or imaging a new word, in reality, other learners prefer to more simple vocabulary learning strategies based on memorization. Strategy instruction, therefore, is necessary for them.

With respect to vocabulary retention, Hultsijn (2001) states that for the retention of a new word, it is necessary that learners are made aware of effective strategies and taught effective strategies for coding and memorizing the word.

In this way, several researchers argue for the effects of strategy training. Consequently the question then arises about the necessity of strategy training. Some researchers stress the necessity. Graves (1987), for example, proposes that regardless of how much instruction we do in school, students will actually do most of their learning independently and ,therefore, it makes sense to encourage students to adapt their personal

plans to expand their vocabulary over time.

Furthermore, Gu (2005) points out that the very essence of vocabulary learning strategies training is, hopefully, to bring about long-term results with learner autonomy as the ultimate goal. McDonough (1995) also concludes that although improvement caused by strategy training is relatively weak and only shows up on certain measures, it may be better for beginners.

With such research in mind one could state that strategy training or instruction may not only promote learners' vocabulary knowledge, but also have a great influence on learners' affective factors such as learners' personal plans to learn vocabulary or learners' autonomy and so forth.

2.5 What Is Needed?

We have already investigated several problems of vocabulary acquisition and vocabulary learning strategies. We have also acknowledged the relationship between vocabulary acquisition and vocabulary learning strategies.

However, surprisingly few studies have so far been made on vocabulary acquisition and vocabulary learning strategies, especially for beginners in the classroom context. As we have seen above, in fact, some attempts have been made by researchers to show effective and available vocabulary learning strategies for beginners. For example, intentional vocabulary learning strategies are necessary for beginners and decontextualized vocabulary learning strategies are effective for beginners. Nevertheless, it must be stated again that there are few studies on

vocabulary learning strategies for beginners in the classroom context.

We, therefore, need to investigate the actual situation of vocabulary learning strategies use employed by Japanese junior high school students as beginners who learn English as a foreign language. In addition, we need to examine the effects of strategy instruction in the classroom context for beginners. Of course, in the present study, we focus on teaching beginners vocabulary learning strategies which are highly effective and available for beginners: intentional and decontextualized vocabulary learning strategies. Furthermore, instruction of vocabulary learning strategies which are often used by successful learners must be conducted for beginners.

Chapter 3

STUDY 1

(STRATEGY USE BY JUNIOR HIGH SCHOOL STUDENTS)

3.1 Aim of the Study

In the preceding chapter, we pointed out several problems with vocabulary learning and vocabulary learning strategies. In this chapter, we investigate the actual situation of vocabulary learning strategies use employed by Japanese junior high school students through issuing a questionnaire and Vocabulary Size Test. Afterwards we will discuss the results of the investigation. We call the investigation of this chapter Study 1.

The aim of Study 1 is to investigate the vocabulary learning strategies that Japanese junior high school students normally use when they learn English. We, therefore, have the following three research questions in Study 1.

1. What kinds of vocabulary learning strategies are used by Japanese junior high school students who learn English as a foreign language?

2. What kinds of vocabulary learning strategies are not used by Japanese junior high school students who learn English as a foreign language?

3. What is the difference of vocabulary learning strategies use according to the learners' vocabulary size?

3.2 Method

3.2.1 Subjects

200 second-year students from six classes in a public junior high school in Nara participated in Study 1. They normally have three classes of English a week at school. Some students are at higher levels of English, and others are at lower levels. There is a variety of levels of English throughout the study population. Their types and degrees of motivation for learning English are also different. To this extent, they are typical learners of English at Japanese public junior high schools in terms of proficiency and motivation.

3.2.2 Questionnaire

The instruments through which the data was collected were a questionnaire and Vocabulary Size Test.

First, we will describe the questionnaire in detail. The questionnaire on vocabulary learning strategies was developed on the basis of careful examinations of the relevant earlier studies (Schmitt, 1997; Anezaki, 1999; Hirano, 2000; Hirano et al., 2001; Hojo, 2000). This is due to the fact that their questionnaires are useful in that they reported on the process of devising a questionnaire on second language vocabulary learning strategies. Moreover they were administered to Japanese EFL learners. It should be noted, however, that some items were slightly modified and some were added in the process of making the questionnaire through a pilot survey. The pilot survey was administered to third- year students of the same school prior to Study 1.

The questionnaire consisted of two sections asking about students' use of vocabulary learning strategies (Discovery strategies and Consolidation strategies). A total number of fifty statements were divided into five groups: (1) Determination strategies (DET), (2) Social strategies (SOC), (3) Memory strategies (MEM), (4) Cognitive strategies (COG) and (5) Metacognitive strategies (MET).

The participants were asked to rate the statements using a scale. The scale applied to all the items and ranged from 1 'never or almost never true for me' to 5 'always or nearly always true for me'.

This questionnaire is shown in Appendix A in Japanese and Appendix B in English.

3.2.3 Vocabulary Size Test

We used Vocabulary Size Test (Mochizuki, 1998 and Mochizuki et al., 2003) to measure students' vocabulary knowledge.

The test has been developed to measure learners' vocabulary knowledge in terms of breadth and depth. According to Meara (1996), the vocabulary size is more important for second language learners than other measurements. Thus, it may be more appropriate to use a Vocabulary Size Test rather than an achievement test of English.

The participants were divided into two groups according to the median score of Vocabulary Size Test. The two groups were an upper group and a lower group. In short, the median score was used as the criterion used to classify each student into an upper or a lower level.

3.3 Results

The questionnaire and Vocabulary Size Test were administered in February 2005. The participants were asked to take the questionnaire and the test in each classroom at the same time.

Questionnaire data from the students were directly fed into SPSS (Statistical Packages for Social Science). The statistical method employed for the analysis of data was simple tabulation.

In the analysis of the results of the questionnaire, all data was re-divided into three groups in terms of the scale from 1 to 5. :

1. 'I never or seldom use this strategy.' (the score of 1 and 2 ; 'never or seldom true for me.')

2. 'I sometimes use this strategy.' (the score of 3 ; 'sometimes true for me.')

3. 'I always or nearly always use this strategy.' (the score of 4 and 5 ; 'always or nearly always or often true for me.')

In addition, the questionnaire data was divided into an upper and a lower group from the median score of their Vocabulary Size Test.

Table 3.1 shows the summary of used and unused vocabulary learning strategies by all subjects. Table 3.2 shows the summary of used and unused vocabulary learning strategies by the upper group of subjects. Table 3.3 shows the summary of used and unused vocabulary learning strategies by the lower group of subjects. The Scale 3 figure in Tables 3.1, 3.2 and 3.3 refers to the percentage of total respondents who indicated the subject always or nearly always used that particular strategy, while the Scale 1 figure in Tables 3.1, 3.2 and 3.3 indicates the percentage of total respondents who felt they never or seldom used the strategy. Moreover Table 3.4

indicates the descriptive statistics data for Vocabulary Size Test.

Table 3.1

Summary of Used and Unused Vocabulary Learning Strategies

by All Subjects

Rank		Used vocabulary learning strategies		Scale 3 (%)
1	Q29	Read the word in the phonetic alphabetic system	COG	71.5
2	Q32	Written repetition	COG	64.0
3	Q6	Words lists	DET	61.0
4	Q22	Study the spelling of a word	MEM	60.5
5	Q5	Bilingual dictionary	DET	49.5
6	Q49	Study the words which can be memorized easily	MET	48.0
7	Q38	Use the vocabulary section in your notebook	COG	46.0
8	Q44	Testing oneself with word tests	MET	41.5
9	Q35	Read the word silently and write it down	COG	40.5
10	Q23	Study the sound of a word	MEM	40.5

Rank		Unused vocabulary learning strategies		Scale 1 (%)
1	Q41	Label an object with its corresponding word	MET	96.5
2	Q28	Use physical action when learning a word	MEM	93.5
3	Q8	Internet	DET	92.0
4	Q15	Study the word with a pictorical representation of its meaning	MEM	91.0
5	Q14	Interact with native-speakers	SOC	90.0
6	Q3	Analize any available pictures or gestures	DET	82.0
7	Q11	Ask teacher for a sentence including the new word	SOC	79.5
8	Q30	Read each letter of the word	COG	77.5
9	Q40	Listen to a tape or CD of word lists	MET	77.5
10	Q21	Group words together to study them	MEM	77.5

Table 3.2

Summary of Used and Unused Vocabulary Learning Strategies

by an Upper Group of Subjects

Rank		Used vocabulary learning strategies		Scale 3 (%)
1	Q29	Read the word in the phonetic alphabetic system	COG	77.1
2	Q22	Study the spelling of a word	MEM	75.2
3	Q32	Written repetition	COG	72.4
4	Q6	Words lists	DET	64.8
5	Q38	Use the vocabulary section in your notebook	COG	52.4
6	Q44	Testing oneself with word tests	MET	52.4
7	Q49	Study the words which can be memorized easily	MET	52.4
8	Q5	Bilingual dictionary	DET	49.5
9	Q23	Study the sound of a word	MEM	49.5
10	Q35	Read the word silently and write it down	COG	46.7

Rank		Unused vocabulary learning strategies		Scale 1 (%)
1	Q41	Label an object with its corresponding word	MET	98.1
2	Q28	Use physical action when learning a word	MEM	95.2
3	Q15	Study the word with a pictorical representation of its meaning	MEM	92.4
4	Q14	Interact with native-speakers	SOC	90.5
5	Q8	Internet	DET	89.5
6	Q3	Analize any available pictures or gestures	DET	84.8
7	Q30	Read each letter of the word	COG	83.8
8	Q46	Skip or pass new word	MET	81.0
9	Q11	Ask teacher for a sentence including the new word	SOC	80.0
10	Q21	Group words together to study them	MEM	79.0

Table 3.3

Summary of Used and Unused Vocabulary Learning Strategies

by a Lower Group of Subjects

Rank		Used vocabulary learning strategies		Scale 3 (%)
1	Q29	Read the word in the phonetic alphabetic system	COG	65.3
2	Q6	Words lists	DET	56.8
3	Q32	Written repetition	COG	54.7
4	Q5	Bilingual dictionary	DET	49.5
5	Q22	Study the spelling of a word	MEM	44.2
6	Q49	Study the words which can be memorized easily	MET	43.2
7	Q38	Use the vocabulary section in your notebook	COG	38.9
8	Q24	Underline the word	MEM	37.9
9	Q50	Study the words that learner want to memorize	MET	36.8
10	Q31	Verbal repetition	COG	35.8

Rank		Unused vocabulary learning strategies		Scale 1 (%)
1	Q8	Internet	DET	94.7
2	Q41	Label an object with its corresponding word	MET	94.7
3	Q28	Use physical action when learning a word	MEM	91.6
4	Q14	Interact with native-speakers	SOC	89.5
5	Q15	Study the word with a pictorical representation of its meaning	MEM	89.5
6	Q2	Analize affixes and roots	DET	80.0
7	Q11	Ask teacher for a sentence including the new word	SOC	78.9
8	Q10	Ask teacher for paraphrase or synonym of new word	SOC	78.9
9	Q40	Listen to a tape or CD of word lists	MET	78.9
10	Q3	Analize any available pictures or gestures	DET	78.9

Table 3.4

Means and Standard Deviations of Vocabulary Size Test

Group		M	SD	Mdn	
All subjects	(N=200)	850.2 size	300.9702	900.0	size
Upper group	(N=105)	1087.1 size	138.0751		
Lower group	(N=95)	611.7 size	170.5060		

3.4 Discussion

We will discuss the results of Study 1 in detail according to the three research questions presented in the first section of this chapter.

Firstly we will begin by considering vocabulary learning strategies commonly used by the Japanese junior high school students. There are several features about these vocabulary learning strategies.

First of all, as is shown in Table 3.1, we can recognize that there is no vocabulary learning strategy that more than eighty percent of the students use. We can see that the students use a variety of vocabulary strategies because even "Bilingual dictionary" is used by less than fifty percent of the students. This shows that beginners of English learning in Japan have no particular vocabulary learning strategies that they always employ.

Secondly the list of used strategies reveals a typical feature of Japanese junior high school students. We can recognize that the students use more L1-based vocabulary learning strategies (Q29, Q32, Q6, Q22, Q5, Q35, Q23). As Haastrup (1991) reports that beginners often use L1-based vocabulary learning strategies, our results also show that beginners in Japan use more L1-based vocabulary learning strategies.

Q29 is a typical example of L1-based strategies. By this strategy, the students read the word 'time' /ti mɛ/. Thus, the students apply the principle of the Japanese sound system of forming a syllable with a consonant plus a vowel.

Q32, Q22, Q35 are vocabulary learning strategies indicating that the students know the difference between Japanese and English. The students pay attention to the spelling of the word consciously because the orthography

of Japanese is different from that of English.

Laufer and Paribakht (1998) claim the importance of writing words for their retention. For beginners, writing words is effective because they do not yet know the high-frequency words of English. They can understand the English orthography by writing English words. Thus the students focus attention on the spellings and sounds that are different from Japanese.

Surprisingly there are two items of metacognitive strategies within the ten used strategies. It shows that Japanese junior high school students as beginners of learning English can plan and evaluate their learning of English.

Looking at the rank of used strategies, we can notice that social vocabulary learning strategies are not used. This is natural for Japanese junior high school students who are in the environment of EFL. Moreover it is found that the students study the English vocabulary by themselves, without asking someone for help.

Next turning to the vocabulary learning strategies unused by the Japanese junior high school students, we can see several features about them, shown in Table 3.2.

First, we should note that five items of vocabulary learning strategies are never or seldom used by more than ninety percent of the students. From this, we can recognize that most of Japanese junior high school students do not use these five strategies. The results of the unused vocabulary learning strategies are different from those of the used vocabulary learning strategies.

We must look more carefully into the unused vocabulary learning

strategies. Q41, Q28, Q15 and Q3 are vocabulary learning strategies for connecting form and meaning. These strategies are never or seldom used by our Japanese junior high school students. Importantly physical action, pictorial representation, or available pictures or gestures, for example, are potentially helpful to connect form and meaning. In fact, Kellogg and Howe (1971) point out that vocabulary learning is significantly faster with pictures than with written words because pictures can improve memory. Physical action, pictures, or other items help students connect form and meaning. In other words, physical action or pictures can mediate the processing of connecting form with meaning. These vocabulary learning strategies are not used by the vast majority of our Japanese junior high school students.

Moreover social vocabulary strategies are never or seldom used by the Japanese junior high school students. This can be attributed to the fact that Japanese learners of English are in an EFL environment.

However, we must notice Q11. Students do not 'ask a teacher for a sentence including the new word'. Here one gets a glimpse of the secret situation of vocabulary learning in Japan. As we have mentioned earlier, vocabulary learning can be seen to be done by students by themselves. Japanese junior high school students, therefore, do not usually ask a teacher for help.

Central to this issue is the problem of vocabulary learning itself. In other words, it is the problem how vocabulary learning is regarded by teachers and students. This leads us to the argument whether vocabulary learning should be actively studied at school or not. This is an important issue at Japanese junior high school. It must be stated definitely that

active vocabulary learning at school is necessary because Japanese junior high school students learn English as a foreign language and they have little natural exposure to English outside school. Teachers, therefore, must teach the vocabulary and how to study the vocabulary.

Lastly we would like to focus attention on the difference of vocabulary learning strategies use according to the students' vocabulary size.

Q24, Q50 and Q31 in Table 3.3 are vocabulary learning strategies always or nearly always used by the lower group. Students with a low vocabulary size can focus on a new word by using the strategy of Q24 "underline the word". They can plan or evaluate their learning by the strategy of Q50 "study the word that I want to memorize". The strategy of Q31 "verbal repetition" can help them retain a new word better than silent repetition or only written repetition. These strategies are typically used by the lower group students. However, we should notice the percentages of use of these strategies. They are very low. Only about thirty-five percent of the students use these strategies. The low percentage is not irrelevant to the students' low vocabulary size.

Moreover we can focus on two items of vocabulary learning strategies unused by the lower group. These are Q2 "analyze affixes and roots" and Q10 "Ask teacher for paraphrase or synonym of a new word". These vocabulary learning strategies are very helpful for Japanese junior high school students (Schmitt, 1997). However, these strategies are not used by the lower group students. It may be because these students have little linguistic knowledge of affixes, roots, or synonyms. In other words, the students in the lower group cannot use these strategies because of their poor

linguistic knowledge.

The results of Study 1 lead us to important issues of what vocabulary learning and vocabulary learning strategies are for students and teachers. For students, the point is how they should learn the vocabulary. For teachers, the point is how they should teach the vocabulary to students. From the perspective of teaching and learning the vocabulary, how to teach and how to learn the vocabulary play an important role respectively for students and teachers. These are the central issues of vocabulary learning strategies. Thus, the instruction or training of vocabulary learning strategies is necessary for both teachers and students.

Chapter 4

STUDY 2 (STRATEGY INSTRUCTION)

4.1 Aim of the Study

According to the data derived from the questionnaire of Study 1, we can acknowledge the actual situation of the use of vocabulary learning strategies by our Japanese junior high school students. With regard to vocabulary learning strategies, we can differentiate between the strategies used and strategies unused by them. Furthermore we can also recognize the differences of strategy use by an upper and a lower groups.

However, there is still no consensus on whether the strategies used by them are suitable for every learner or that the strategies unused are not appropriate for every learner. Only a few attempts have so far been made to study the effects of strategy training, especially for beginners. Thus, research on strategy training is necessary.

From the perspective above, we examine experimentally the effects of strategy instruction on the learning of English vocabulary learning. We discuss the issue of how strategy instruction affects the acquisition of English vocabulary by Japanese junior high school students as beginners.

We call this research on strategy instruction Study 2.

4.2 Method

4.2.1 Subjects

183 second-year students from six classes in a public junior high school in Nara participated in Study 2. These were selected from the same sample

population that participated in Study 1.

They were divided into three groups, Group1, Group 2 and Group 3. Each group had two classes for the strategy instruction. Although each class of a group was given strategy instruction at each class, we analyze the data as one group.

The population of each sample group in Study 2 was 60 subjects in Group 1, 63 in Group 2 and 60 in Group 3.

4.2.2 Procedure
4.2.2.1 Three Types of Strategy Instruction

From the results of Study 1, we recognize two types of vocabulary learning strategies that the students always or nearly always use. They are cognitive vocabulary learning strategies, such as "verbal and written repetition," and metacognitive vocabulary learning strategies, such as "testing oneself with word tests". Moreover we consider memory vocabulary learning strategies such as "studying new words with already known words" as available strategies for beginners. The reason why we chose this strategy for Study 2 is taken up in later section (Hypotheses) of this chapter in detail. We refer to such a strategy as "semantic and collocational elaboration". We will use the term "semantic and collocational elaboration" to refer to the vocabulary learning strategy of "studying new words with already known words".

We will now examine the effects of instruction of these three types of vocabulary learning strategies. We divided the subjects into three groups according to the type of instruction: Group 1 (only verbal and written

repetition), Group 2 (verbal and written repetition + testing oneself with word tests) and Group 3 (verbal and written repetition + semantic and collocational elaboration).

4.2.2.2 Experimental Design

All treatments in Study 2 were administered in February and March 2005.

Strategy training was given to each group three times in class. In the first treatment, the same strategy training was given to each group, and then the same ten new words were introduced to every group and their pronunciation and meanings were taught for five minutes. After that, the students in each group studied these ten unknown words for twenty-five minutes. After that, the subjects took Pre-test immediately. This procedure was repeated in the second and third treatment with ten new words each time. Importantly it should be noted that in the second and third treatment, each group was instructed with a different respective strategy.

Figure 4.1 shows the experimental design of Study 2. In the first treatment, the same strategy training was given to the three groups. The strategy was a cognitive strategy "verbal and written repetition". Immediately after the first treatment, the subjects took the test of ten unknown words. The data from the test were analyzed as the data of the Pre-test.

In the second and third treatment, only Group 1 was given the same strategy training (verbal and written repetition). Group 2 was given

metacognitive strategy training (testing oneself with word tests). They were required to learn ten unknown words using a combination of the cognitive strategy (verbal and written repetition) and the metacognitive strategy they were taught at the second treatment. Group 3 was given memory strategy training (semantic and collocational elaboration). They were required to learn ten unknown words using a combination of the cognitive strategy (verbal and written repetition) and the memory strategy (semantic and collocational elaboration).

In both the second and third treatment Post-tests were administered immediately after the learning and these were considered as Post-test 1 for the second treatment and Post-test 2 for the third treatment.

	The first treatment	The second treatment	The third treatment
Group 1	only verbal and written repetition	only verbal and written repetition	only verbal and written repetition
Group 2	only verbal and written repetition	verbal and written repetition + testing onself	verbal and written repetition + test oneself
Group 3	only verbal and written repetition	verbal and written repetition + Semantic and collocational elaboration	verbal and written repetition + Semantic and collocational elaboration
Tests	Pre-test	Post–test 1	Post-test 2

Figure 4.1 Experimental design of Study 2

4.2.2.3 Materials

Ten unknown words were learned in one treatment by the subjects. We selected thirty unknown words for three treatments. They were

selected and modified according to a vocabulary book (Shiomi, 2002).

We paid attention to several points in the selection of these thirty words. First, we selected thirty words that the subjects in Study 2, our Japanese junior high school students, did not know. We gave a pilot survey to third-year students at the same public junior high school. We made them check thirty-six words and in Study 2 we did not use the words that the third-year students knew.

Secondly we did not use words of the same part of speech. The reason for this is that our purpose in Study 2 was not the investigation of vocabulary memorization according to the part of speech, but rather the investigation of the effects of strategy instruction.

Finally we paid attention to the amount of memorizing of the ten words in each treatment. We also paid detailed attention to the total number of syllables of these ten words. The total number of syllables of these ten word sets was nearly equal in each treatment.

Appendix C shows the materials in Study 2.

4.2.2.4 Tests

In Study 2, the data from the three tests for each group was collected and analyzed in terms of the effects of strategy instruction. The tests were of three types: Pre-test, Post-tests and Delayed test.

Each test had ten questions. Within ten questions, five were questions about English words (meanings or translations into Japanese words) and the other five were questions about Japanese words (meanings or translations into English words). Each question had a value of one point.

Therefore the maximum total for each test was ten points.

The students took the first test immediately after the first treatment. We called it Pre-test because the data from it was to act as a control set, from which the scores resulting from the same kind of strategy instruction could be measured and analyzed across the three groups.

Immediately after the second and third treatment, the students took the second and third tests. We call these tests Post-test 1 for the second treatment and Post-test 2 for the third treatment.

Delayed test was conducted about four weeks after the treatments. Just as Pre-test and Post-tests 1 and 2, Delayed test had a maximum total score of ten marks. In Delayed test there were five questions that asked for the writing of the word in Japanese, and five questions that asked for the writing of the word in English. It served Delayed test for the first treatment, the second treatment and the third treatment.

The students who did not take all the tests in Study 2 were excluded from analysis.

4.3 Hypotheses

Before presenting the hypotheses in Study 2, we have to explain the reason why we conducted three different types of strategy instruction. There were several reasons for this.

We begin with the cognitive strategy of "verbal and written repetition". Takeuchi (2003) states that extra attention has been paid to pronunciation in the vocabulary build-up of good language learners, first checking the pronunciation of a new word and then memorizing the word by both reading

it aloud and writing it down many times. According to his claim, students have to pay more attention to the orthographic and phonetic form of a new word. Moreover we recognized that this strategy was always or nearly always used by the Japanese junior high school students in Study 1. Thus we chose this strategy for Group 1 as a control group.

Next we explain the reason for the metacognitive strategy "testing oneself with word tests". Although this strategy was frequently used by the Japanese junior high school students in Study 1, about sixty percent of all the students did not use this strategy. (41.5 percent of all the subjects in Study 1 always or nearly always used this strategy.) Furthermore Raskh and Ranjbary (2003) point out that explicit metacognitive strategy training has a significant positive effect on the vocabulary learning of EFL students. They confirm the effects of metacognitive strategy training in EFL environment. Therefore we chose this strategy for Group 2.

Finally, we examine the reason for the selection of the memory strategy "semantic and collocational elaboration", in other words, "studying new words with already known words". Barcroft (2002, 2004) states that elaborating on word meanings facilitates their memorization because the memory for second language words depends on the memory of word meanings whereas the memory of word forms of second language words depends more on the memory of word forms. He emphasizes the connection of meanings in learning a new word. In addition, Nation (2001) argues that collocation is processed as one unit, not as two or three words. Furthermore Sökmen (1997) points out that students connect a new word with already known words, and the link between a new word and an already known word

is created when learning takes places.

In this type of strategy instruction, for example, students read the words "make progress" aloud and write it down when they learn the unknown word "progress". In this case, "progress" is a new word for learners and "make" is an already known word. We call this strategy "semantic and collocational strategy" as I have mentioned before. This type of strategy instruction was given to Group 3.

Based on the perspective above and the relevant literature reviewed in Chapter 2, let us posit three hypotheses for Study 2 as follows:

1. Group 2 will show more effects of strategy instruction than Group 1, and the words that subjects in Group 2 learn will be retained longer than Group 1.

2. Group 3 will show more effects of strategy instruction than Group 1, and the words that subjects in Group 3 learn will be retained longer than Group 1.

3. Group 3 will show more effects of strategy instruction than Group 2, and the words that subjects in Group 3 learn will be retained longer than Group 2.

4.4 Results

The data collected from the three groups were directly fed into SPSS (Statistical Packages for Social Science).

Descriptive statistics for Pre-test, Post-test 1, Post-test 2 and Delayed test appear in Table 4.1. The results are also graphically presented in Figure 4.2 and Figure 4.3.

Table 4.1

Means and Standard Deviations of Tests

		Pre	Post 1	Post 2	Delayed 1	Delayed 2	Delayed 3
Group 1	*M*	6.9800	7.3600	7.1200	0.9500	0.2300	0.4700
(N=60)	*SD*	2.7500	2.7950	3.3720	1.0420	0.4230	0.6300
Group 2	*M*	7.1000	8.8200	8.2300	1.4200	0.5000	0.5800
(N=63)	*SD*	2.5890	2.4980	2.7020	0.9440	0.6510	0.7870
Group 3	*M*	6.6100	6.6900	8.1000	1.7400	0.4600	0.5300
(N=60)	*SD*	2.6760	2.8840	7.8200	1.3570	0.7580	0.8260
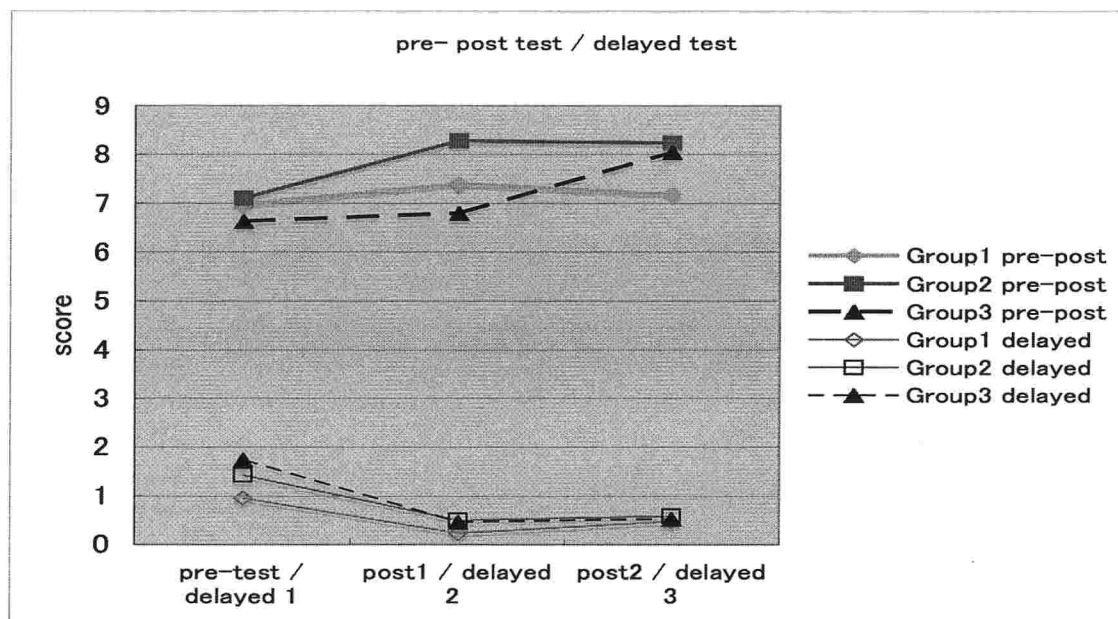
Figure 4.2 Means of tests
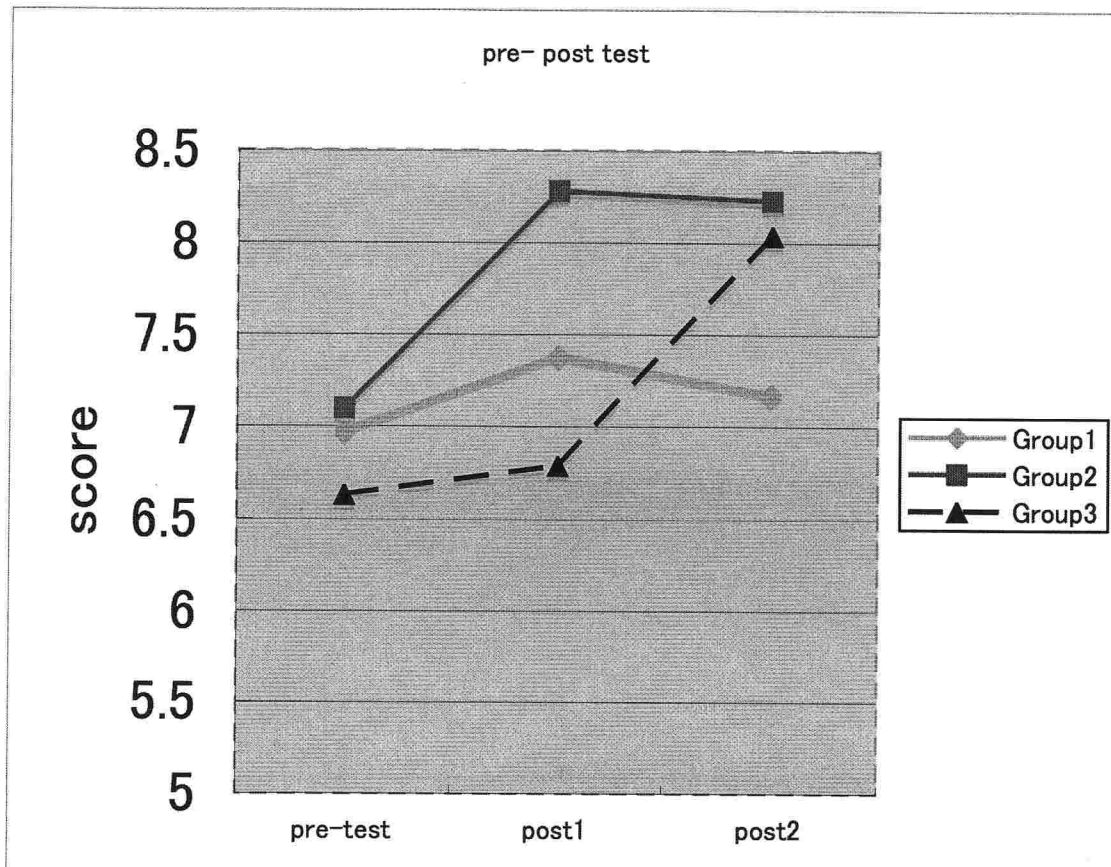
Figure 4.3 Means of Pre test, Post-test 1 and Post-test 2

What has to be noticed is the mean score of Delayed test. The mean scores of Delayed tests were extremely low. We, therefore, excluded the data of Delayed tests from analysis. The reason of this is taken up in the next section.

Before the data analysis of Study 2, we compared three groups by one-way ANOVA on the scores of Pre-test. This is because we need to examine the quality of the three groups. Note that Pre-test was administered within the same strategy instruction with the same materials across the groups. We can find relatively similar scores across the three groups with Pre-test. The results of one-way ANOVA on the scores of

Pre-test indicate no significant differences (F (2, 182)=2.381, $p>.05$). Consequently the three groups can be regarded as being statistically the same in terms of ability.

We must now return to the data analysis of Post-tests. Table 4.2 shows the results of 3 (Group) and 3 (Test) mixed designed ANOVAs. 3x3 factorial ANOVAs were performed with Groups (Group 1, Group 2 and Group 3) as a between subject factor, and Tests (Pre-test, Post-test 1 and Post-test 2) as a within subject factor. The results showed significant differences for Test, (F (2, 360)=18.009, $p\leq.05$) and significant interaction effects between Test and Groups (F(4, 360)=6.088, $p\leq.05$). Thus the simple main effect for the groups was qualified.

Table 4.2

ANOVAs on Pre-test, Post-test 1 and Post-test 2

SV	SS	df	MS	F	
group	58.96	2	29.48	1.657	
test	91.422	2	45.711	18.009	*
groupXtest	61.806	4	15.452	6.088	*
Residual	913.746	360	2.538		

* $p\leq.05$

Table 4.3 shows the result of one-way ANOVA for Group 1. There was no significant difference in Group 1 (F(2, 119)=1.162, $p>.05$).

Table 4.3

ANOVA on Group 1

SV	SS	df	MS	F	
test	6.15	2	3.075	1.162	ns
Residual	315.017	119	2.647		

* $p \leqq .05$

Table 4.4 shows the result of one-way ANOVA for Group 2. It revealed significant difference (F (2, 124)=13.298, $p \leq .05$). Furthermore a multiple comparison by Scheffe was conducted. Statistically significant differences appeared, as is shown in Table 4.5 between Pre-test and Post-test 1, and between the Pre-test and Post-test 2.

Table 4.4

ANOVA on Group 2

SV	SS	df	MS	F	
test	66.169	2	33.085	13.298	*
Residual	308.497	124	2.488		

* $p \leqq .05$

Table 4.5

Multiple Comparison by Scheffe in Group 2

test	test	difference	SE	
pre-test	post 1	-1.29*	.281	
pre-test	post 2	-1.22*	.281	
post 1	post 2	.60	.281	ns

* $p \leqq .05$

Table 4.6 shows the result of one-way ANOVA for Group 3. It revealed significant difference (F (2, 118)=16.274, $p \leq .05$). Furthermore a multiple comparison by Scheffe was conducted. Statistically significant differences appeared, as is shown in Table 4.7 between Pre-test and Post-test 2, and Post-test 1 and Post-test 2.

Table 4.6

ANOVA on Group 3

SV	SS	df	MS	F	
test	81.433	2	40.717	16.274	*
Residual	295.233	118	2.502		

$* p \leq .05$

Table 4.7

Multiple Comparison by Scheffe in Group 3

test	test	difference	SE
pre-test	post 1	-.08	.289
pre-test	post 2	-1.47*	.289
post 1	post 2	-1.38*	.289

$* p \leq .05$

4.5 Discussion

Before starting our discussion on the results of Study 2, we need to consider the problem that appeared in Delayed test.

The scores of Delayed test were surprisingly low. This is the reason

why we excluded the data of Delayed test from analysis. However, we have to investigate why the scores were low. There are several reasons of this. One is that each treatment had a very short time for learning the ten new words. To learn them in twenty-five minutes was too short a time period to allow for long-term retention. Moreover, we did not encourage the subjects to learn them outside the classroom. In these factors in mind, we may say that Japanese junior high school students need to study new words continuously for their long-term retention.

Now let us turn to the discussion on Study 2. We will discuss it in detail according to the three hypotheses we have set.

Hypothesis 1 has been partially supported. Group 2 (the metacognitive vocabulary learning strategy group) showed more effects of strategy instruction than Group 1 (the cognitive vocabulary learning strategies). However, the words learned by the subjects in both groups were not retained longer because the scores of Delayed test were extremely low. The metacognitive vocabulary learning strategy instruction was effective for the subjects in Group 2. This result is consistent with that of Rasekh and Ranjbary (2003), which report that metacognitive vocabulary learning strategy instruction is effective.

The subjects in Group 2 used the combination of cognitive and metacognitive vocabulary learning strategies. A metacognitive strategy "testing oneself with word tests" may promote vocabulary acquisition by incorporating cognitive vocabulary learning strategies such as "verbal and written repetition". In other words, the repertoire of the cognitive vocabulary learning strategies may be broaden by metacognitive vocabulary

learning strategies.

Stahl and Fairbanks (1986) also state that metacognitive learning strategies instigate cognitive learning strategies. Moreover, Anderson (2002) claims that developing metacognnitive awareness may lead to the development of stronger cognitive skills. They point out that cognitive learning strategies use is based on the use or knowledge of metacognitive strategies. The results of Study 2 might provide a support for the combined use of cognitive vocabulary learning strategies and metacognitive vocabulary learning strategies.

Hypothesis 2 has been partially supported. Group 3 (the memory vocabulary learning group) showed more effects of strategy instruction than Group 1. However, the words learned by the subjects in both Group 1 and Group 3 were not retained longer.

Group 3 showed the effects of word association by "semantic and collocational elaboration". Word association involves making associations between a new word and any words already in the subjects' memory. Word association between a new word and already known words is made by "semantic and collocational elaboration".

Thus, in Group 3, we need to consider vocabulary acquisition in greater detail in relation to word association made by using the memory vocabulary learning strategy "semantic and collocational elaboration". Gu (2005) proposes that vocabulary acquisition in a target language involves both knowledge and skill aspects. The skill aspect involves the components of automatic retrieval and production in vocabulary acquisition. With respect to this skill aspect, vocabulary acquisition may be promoted by "verbal and

written repetition" in Group 3.

On the other hand, the knowledge aspect involves the acquisition of semantic and conceptual structures in vocabulary acquisition. Semantic and conceptual structures require a deep processing or a complex analysis of new words (Craik and Lockhard, 1972; Brown and Perry, 1991). The subjects in Group 3 did process the new words deeply because word association such as semantic and collocational elaboration involves words that the subjects have already known conceptually and semantically. The subjects, therefore, paid more attention to the new words in their conceptual and semantic processing. This attention is extremely important for learners. Schmidt (2001) states the importance of attention as "mental processes that are conscious". Moreover, especially for vocabulary acquisition, Lewis (1997) claims the importance of attention as "awareness-raising".

Vocabulary acquisition may be promoted by the interaction between these skill and knowledge aspects (Gu, 2005). Indeed this may explain the case of vocabulary acquisition by Group 3 to which strategy training combining "verbal and written repetition" and "semantic and collocational elaboration" was conducted.

Hypothesis 3 has been rejected. Although the mean scores of each group were different in the second treatment, the mean scores of each group were almost equal to the third treatment. These results represent the characteristics of each vocabulary learning strategy instruction conducted with Group 2 and Group 3 respectively. In this way one could say that the instruction of metacognitive vocabulary learning strategies, such as "testing

oneself with word tests," work immediately. Thus, the subjects in Group 2 indicated more effects of strategy instruction immediately after their strategy training. On the other hand, the instruction of memory vocabulary learning strategies such as "semantic and collocational elaboration" requires some time to work. Thus, the subjects in Group 3 showed the effects of strategy instruction only at the third treatment.

Finally we have to consider the relationship between strategy instruction and motivation. Nunan (1997) proposes that strategy instruction has significant effects on students' motivation. In Study 2, some subjects reported their pleasure of being able to write learnt words after Post-tests. From this observation, we can say that for some learners, at least, receiving strategy instruction can have striking effects on their motivation.

Chapter 5

CONCLUSIONS

The purpose of this thesis was to examine the actual situation of English vocabulary learning by Japanese junior high school students and investigate the effects of strategy instruction in the learning of English. Japanese junior high school students, herein, means beginners of learning English as a foreign language.

In Study 1, we investigated strategy use by Japanese junior high school students as beginners learning English as a foreign language. From the results of Study 1, we can recognize the actual situation of strategy use by them. Moreover, the results show that we can differentiate between an upper and a lower groups of learners with respect to strategy use.

In Study 2, we confirmed the effects of strategy instruction in the learning of English vocabulary, especially strategy instruction of the metacognitive and memory vocabulary learning strategies as we described in Chapter 4.

The metacognitive vocabulary learning strategy instruction was effective for the students. Furthermore, a metacognitive strategy, "testing oneself with word tests," may promote vocabulary acquisition by incorporating cognitive vocabulary learning strategies, "verbal and written repetition".

In addition, we confirmed the effects of word association by "semantic and collocational elaboration". The subjects in Group 3 processed the new words deeply because word association, such as "semantic and collocational

elaboration," involves words that the subjects already know conceptually and semantically. The subjects, therefore, paid more attention to the new words in their conceptual and semantic processing.

Moreover these results also represented the characteristics of each vocabulary learning strategy instruction. The instruction of metacognitive vocabulary learning strategy works immediately. On the other hand, the instruction of memory vocabulary learning strategies, such as "semantic and collocational elaboration," requires some time to work.

However, there are, of course, several shortcomings in the present study.

Firstly, with regard to Study 1, we need to investigate the actual situation of strategy use by Japanese junior high school students in more detail. The items in the questionnaire need to be modified in order to investigate the strategy use situation in greater detail. Moreover, we have to recognize the potential differences among students of different school years at Japanese junior high school. School year represents the length students have studied English. This can be an important variable. The actual situation of vocabulary learning strategies may be different.

Secondly, as for Study 2, we need to examine the effects of "semantic and collocational elaboration" vocabulary learning strategy instruction in more detail. Jiang (2004) states that adult L2 learners often rely on the pre-existing semantic system of L1. It is not clear that the subjects in Study 2 use this knowledge of L1 or use the knowledge of a target language. Moreover, Boers, Demecheleer, and Eyckmans (2004) point out the differences of vocabulary acquisition in terms of the types of word association.

We need to examine the effects of strategy instruction according to the types of word association to make the function of "semantic and collocational elaboration" more clear.

Thirdly, with respect to Study 2, more longitudinal research is needed. Learning strategy research requires a long term to investigate learning strategies and to examine the effects of strategy training.

Finally, further research and discussion are needed in the areas of both the strategy investigation and strategy instruction for vocabulary acquisition. Folse (2004) suggests that armed with research findings for vocabulary acquisition, classroom teachers of English now have specific information and concrete activities to help teach vocabulary successfully to second language learners. Our students may desire such ingenious, resourceful, and eloquent teachers ardently.

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Appendix A

The Questionnaire Items in Study (Japanese Version)

①新出単語の意味を発見するためにする学習方法

1	新出単語の品詞（動詞、名詞、形容詞など）を分析する。	DET
2	新出単語の接辞（接頭辞・接尾辞）と語幹を分析する。	DET

　　　例　接頭辞＝unhappy の un

　　　　　接尾辞＝player の er

　　　　語　幹＝unhappy の happy、player の play

3	新出単語の意味に役立つ絵やジェスチャーを使う。	DET
4	教科書の文脈から新出単語の意味を自分で推測する。	DET
5	英和辞典を使う。（電子辞書も含む）	DET
6	教科書の後ろのページにあるワードリストを見る。	DET
7	参考書などで調べる。	DET
8	インターネットで調べる。	DET
9	日本語の訳（意味）を先生に尋ねる。	SOC
10	新出単語の言い換えや類義語（意味の似た単語）を先生に尋ねる。	SOC
11	新出単語を含んだ他の文や句を先生に尋ねる。	SOC
12	新出単語の意味を友だちや家族に尋ねる。	SOC

②新出単語を定着させるための学習方法

13	グループの人（友だち）と一緒に学習し、覚える。	SOC
14	新出単語を、英語を話せる人に対して使ってみる。	SOC
15	新出単語の意味を絵や図などで表して（描いて）覚える。	MEM
16	新出単語の意味するもの（こと）を頭の中で作り出して覚える。イメージ化する。	MEM
17	新出単語と自分の個人的な経験とを結びつけて覚える。	MEM

例　present を学習する時に、「去年のクリスマスに present をもらった」

18　新出単語をすでに知っている単語に結びつけて（関連づけて）覚える。　　MEM

例　time を学習する時に、long time と結びつけて

fast を学習する時に、run fast と結びつけて

19　新出単語を学習する時、その語が含まれている文全部を覚える。　　MEM

20　新出単語を同意語や反意語に結びつけて学習する。　　MEM

例　hot を学習する時に cold と結びつけて

例　good を学習する時に nice と結びつけて

21　覚えやすいように単語をグループ分けする。　　MEM

例　乗り物、動物、スポーツのグループや名詞、動詞のグループなど

22　新出単語の綴り（スペル）を学習して覚える。　　MEM

23　新出単語の発音の仕方（読み方やアクセント）を学習して覚える。　　MEM

24　新出単語に下線（アンダーライン）を引いたり、蛍光ペンでチェックして覚える。　　MEM

25　語呂（ごろ）合わせ（キーワード法）を使って覚える。　　MEM

例　take を学習する時、「もっ<u>ていく</u>」「つれ<u>ていく</u>」

26　新出単語の意味を言い換えて覚える。　　MEM

例　visit で「訪問する」を「訪ねる」や「行く」などに

27　新出単語を覚える時、イディオム（熟語）を使って覚える。　　MEM

例　'after school'や 'by the way'や 'look for'など

28　新出単語を学習する時、体の動作を使って覚える。　　MEM

例　open を学習する時、実際に窓を開ける

29　新出単語をローマ字読みのような読み方で覚える。　　MEM

例　listen（リステン）

30　新出単語を１文字ずつ発音し覚える。　　MEM

49 覚えやすそうな単語から覚えるようにする。   MET

50 自分が覚えたいと思う単語から覚えようとする。   MET

例　vacation　（ブイ・エー・シー・エー・ティ・アイ・オーエヌ）

31	新出単語を声に出して何度も繰り返し言って覚える。	COG
32	新出単語を何度も繰り返し書いて覚える。	COG
33	新出単語を、必ず書きながら言って覚える。（必ず言いながら書く）	COG
34	新出単語を声に出さずに、心（頭）の中で言って覚える。	COG
35	新出単語を声に出さずに、必ず心（頭）の中で言いながら、実際に書いて覚える。	COG
36	表（おもて）に単語（英語）、裏（うら）に意味（日本語）を書いた単語カードを使って覚える。	COG
37	単語を学習するためだけのノート（単語帳）を使って覚える。	COG
38	新出単語を普段授業で使っているノートに書いて覚える。（英語も日本語も）	COG
39	教科書の本文中の空いている場所か、教科書の新出単語の所に意味を書き込んで覚える。	COG
40	新出単語をＣＤやテープなどで聞いて覚える。	COG
41	物に英語のラベルをつけて覚える	COG

例　ドアに door と書いた紙を貼る

42	単語を学習するためだけに使うノート（単語帳）を作って覚える。	COG
43	英語のメディア（歌、映画、新聞など）を使って覚える。	MET
44	新出単語のテストを自分自身でして覚える。	MET
45	間隔を空けて、新出単語を学習して覚える。	MET

例　今日して、２日後にして、４日後にする。

| 46 | 新出単語が出てきた時に、それをとばすか、無視する。 | MET |
| 47 | 時間をかけて新出単語を学習する。 | MET |

例　集中的に 15 分や、30 分や、40 分、学習する。

| 48 | 自分が覚えた単語を定期的に計画的に復習する。 | MET |

Appendix B

The Questionnaire Items in Study 1 (English Version)

Sterategies for the discovery of a new word's meaning

1	DET	Analize the part of speech
2	DET	Analize affixes and roots
3	DET	Analize any available pictures and gestures
4	DET	Guess from texual context
5	DET	Bilingual dictionary
6	DET	Words lists
7	DET	Reference book
8	DET	Internet
9	SOC	Ask teacher for an L1 translation
10	SOC	Ask teacher for paraphrase or synonym of new word
11	SOC	Ask teacher for a sentence including the new word
12	SOC	Ask classmates or family for meaning

Strategies for consolidating a word once it has been encountered

13	SOC	Study and practice meaning in a group
14	SOC	Interact with native-speakers
15	MEM	Study the word with a pictorical representation of its meaning
16	MEM	Imagine the word's meaning
17	MEM	Connect word to a personal experience
18	MEM	Associate the word with an already known word
19	MEM	Memorize the whole sentence
20	MEM	Connect the word to its synonyms and antonyms
21	MEM	Group words together to study them
22	MEM	Study the spelling of a word
23	MEM	Study the sound of a word
24	MEM	Underline the word
25	MEM	Use Keyword Method
26	MEM	Paraphrase the word's meaning
27	MEM	Learn the words of an idiom together
28	MEM	Use physical action when learning a word
29	MEM	Read the word in the phonetic alphabetic system
30	MEM	Read each letter of the word
31	COG	Verbal repetition
32	COG	Written repetition
33	COG	Verbal and written repetition
34	COG	Read the word silently
35	COG	Read the word silently and write it down
36	COG	Word lists
37	COG	Keep a vocabulary notebook
38	COG	Use the vocabulary section in your notebook
39	COG	Write down the trnslation of the word in textbooks
40	COG	Listen to a tape or CD of word lists
41	COG	Label an object's name with its corresponding word
42	COG	Put English labels on physical objects
43	MET	Use English-language media (songs,movies,,)
44	MET	Testing oneself with word tests
45	MET	Use interval word practice
46	MET	Skip or pass the new word
47	MET	Take time off to study words
48	MET	Plan to study words over time
49	MET	Study the words which can be memorized easily
50	MET	Study the words I want to memorize

Appendix C

The Materials in Study 2

The first treatment

1	habit	習慣
2	ease	気楽さ・簡単さ
3	snail	かたつむり
4	population	人口
5	consult	意見を求める・診察してもらう
6	mention	言う
7	vain	むだな
8	huge	巨大な
9	instead	(その)かわりに
10	frankly	率直に

The second treatment   *(For Group 3)*

11	sight	見ること	catch sight of	〜を見つける・見かける
12	detail	詳細(しょうさい)	in detail	詳細(しょうさい)に
13	cell	細胞	cell wall	細胞壁
14	perfume	香り・香水	wear perfume	香水をつける
15	solve	解く・解決する	solve the problem	問題を解く
16	prepare	準備する	prepare dinner	夕食の用意をする
17	general	一般的な・全般的な	in general	一般に
18	vivid	あざやかな・鮮明な	vivid color	あざやかな色
19	except	〜を除いて	except for	〜を除いて
20	rather	むしろ	rather than	〜というよりむしろ

The third treatment   *(For Group 3)*

21	instance	例	for instance	例えば
22	progress	進歩	make progress	進歩する
23	tongue	舌・ことば	mother tongue	母国語
24	disease	病気	heart disease	心臓病
25	spoil	甘やかす	spoil a child	子どもを甘やかす
26	gather	集める	gather data	データを集める
27	whole	全体の	as a whole	全体として
28	rural	いなかの	rural life	いなかの生活
29	asleep	眠って(いる)	fall asleep	眠りにつく・寝入る
30	create	作る	create the design	デザインを作る