

Better Vocabulary Study Strategies for Long-Term Learning

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ABSTRACT

Presently, the main study skills many Japanese EFL students rely on are massed practice, repetition, and writing when it comes to vocabulary acquisition. McCarthy (as cited in Gu, 2003) stated, “the purpose of vocabulary learning should include both remembering words and the ability to use them automatically in a wide range of language contexts when the need arises.” The theory of desirable difficulty (Bjork and Bjork, 1992) states that the harder one has to work to retrieve a memory, the greater the subsequent spike in retrieval and storage strength. Spaced-repetition and interleaving are two study skills which incorporate the desirable difficulty effect and could lead to stronger vocabulary acquisition; giving students the ability to recall words automatically when the need arises. Encouraging and teaching students how to use these skills will lead to deeper vocabulary acquisition and language improvement.

1. Japanese EFL students’ vocabulary study methods

There have been numerous studies conducted on the preference and efficacy of second language vocabulary acquisition (SLVA) methods and strategies for EFL students (Chamot, 2005; Gu & Johnson, 1996; Gu, 2003; Kojic-Sabo & Lightbown, 1999), many of which have focused particularly on the Japanese educational context (Crookes et al., 1994; Hunt & Beglar, 2005; Mizumoto & Takeuchi, 2009; Mochizuki, 1999; Prichard, 2008; Schmitt & Schmitt, 1993). A review of this literature reveals some contention regarding those SLVA strategies most utilized by Japanese EFL students. In a study of 157 university students in Japan,

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Mochizuki (1999) found that SLVA strategies that incorporated rote repetition of new vocabulary were not used as much as he expected. The surprise stemmed from the fact that in Japanese English education, students are pushed to memorize a lot of sentences, idioms, and vocabulary. This differs from Crookes et al.'s (1994) finding that Japanese learners self-reported using rote memorization as their main SLVA strategy. Schmitt and Schmitt (1993), in a study of 600 Japanese students ranging from junior high school students to adults, found that the top ranking strategy considered to be the most helpful was written repetition. This resonates with the cultural norm of learning *kanji* through mass written repetition imprinted on Japanese students at an early age. Politzer and McGroarty (1985) found that, generally speaking, Asian students exhibited fewer of the strategies expected of "good" language learners than did Hispanic students, and in fact O'Malley (1987) blamed the lack of language learning success of Asian students to the persistence of familiar strategies, such as rote repetition, a strategy common for memorizing *kanji*, transferred to the memorization of English vocabulary. Therefore, while the research on Japanese EFL students' vocabulary learning strategies has produced varied results, there is sufficient evidence to assume that there is room for improvement in terms of the explicit teaching and use of more varied SLVA strategies.

The practice of vocabulary learning is underwritten by the need to foster improved word retention and fluid use in a variety of language contexts (e.g. Gu 2003; McCarthy 1984 p.21.) Mere utilization of one or a very few limited second language vocabulary acquisition strategies will not produce these kinds of results. Kojic-Sabo and Lightbown (1999) found that more frequent and elaborate strategy use was associated with higher levels of achievement, and results also suggested that *time* and *learner independence* were the two measures most closely related to success in vocabulary learning and higher overall English proficiency. Gu (2003) points out that each strategy a learner chooses will determine to a large extent how a new word is learned and it's depth of learning.

For an English language learner, Japan is an "*input-poor environment*" (Kouraogo, 1993, p.165). In an EFL environment, compared to an ESL one, Japanese learners of English have to search harder for opportunities to encounter and practice new English words. A Japanese student studying in Australia or the USA, for example, has ample opportunities to practice newly met vocabulary outside of the classroom, whereas the same student studying in Japan must engage in a greater variety of direct, specifically vocabulary targeted activities and autonomously review notes with a greater degree of frequency (Kojic-Sabo & Lightbown, 1999).

The need for a more varied selection and explicit teaching of SLVA strategies for Japanese EFL students is clear. Recent research in the burgeoning field of *Mind, Brain and Education*, which is an amalgamation of research from neuroscience, psychology and education, has shed light on how the brain works in terms of storage and retrieval. The field has recommended certain approaches and methods to aid in the longer-term storage and higher potential for retrieval of new knowledge, which can be applied to the second language learning environment. This paper will draw on this research to describe two basic strategies teachers should be using in their classrooms to not only teach vocabulary, but also encourage students to use on their own that will lead to better learning, use, and storage of second language vocabulary.

2. Spaced Repetition

In Gu's (2003) review of the literature of second language vocabulary learning strategies, he reported that in almost all studies focusing on the pacing of repetition and recall of word lists, forgetting occurs almost immediately after the first encounter. Anderson and Jordan (1928) discovered that after initial learning and at 1 week, 3 weeks, and 8 weeks thereafter, the number of words that could be recalled, i.e. the learning rate, was 66%, 48%, 39% and 37% respectively. Much more recently, Brown et al. (2014) corroborated this, citing studies that have produced similar findings. They argue that in order to best overcome this forgetting, spaced repetition is one of the best strategies.

The strategy of using spaced repetition to review vocabulary at appropriate intervals is difficult to utilize in a class where students only meet once per week. As Hunt and Beglar (2005) noted, "Time pressures caused by the need to cover a large amount of material specified by a curriculum and the design of many texts in which previously met vocabulary is not systematically reviewed can work against the recycling of previously introduced vocabulary [...] learners who do not engage in review activities are likely to forget much previously met new lexis" (p.31). Therefore, it is recommended that teachers explicitly teach the strategy to students, and assign it as homework to be done autonomously. Follow-up and monitoring can be achieved through the use of study journals kept by the students and submitted to the teacher, or reporting progress to groups of their peers in the classroom.

An example of spaced repetition for vocabulary acquisition might look like this (an adaptation of Leitner's System (Landauer and Bjork, 1978)): Students transfer words from vocabulary lists to individual pocket-sized flash cards with the target language (L2) word on one side, and the student's first language (L1) on the other. They then prepare four boxes and all the vocabulary cards start in box

number 1. On day one the student reviews all of the words in box 1 and as he encounters words that he already knows, he places them in box number 2 (see Diagram 2). Box number 1 requires study every day, box number 2 every fourth day, box number 3 once a week, and box number 4 every 2 weeks. On day two the student studies the remaining words in box number 1 and again transfers any words that are easily recalled into box number 2. Day three is a repeat of day one and two but on day four he studies the words in both box number 1 and 2. Any words that he recalls correctly from box number 1 are transferred to box number 2 and any words recalled correctly from box number 2 are transferred to box number 3. One difference is that any words from box number 2 that the student cannot recall are moved back into box number 1. This study method continues with increasingly longer intervals between the reviews of successfully recalled words and words continually move up or down the scale depending on the student's ability to recall them correctly (see Diagram 1 for the timing of intervals, and Diagram 2 for a demonstration of vocabulary transitions).

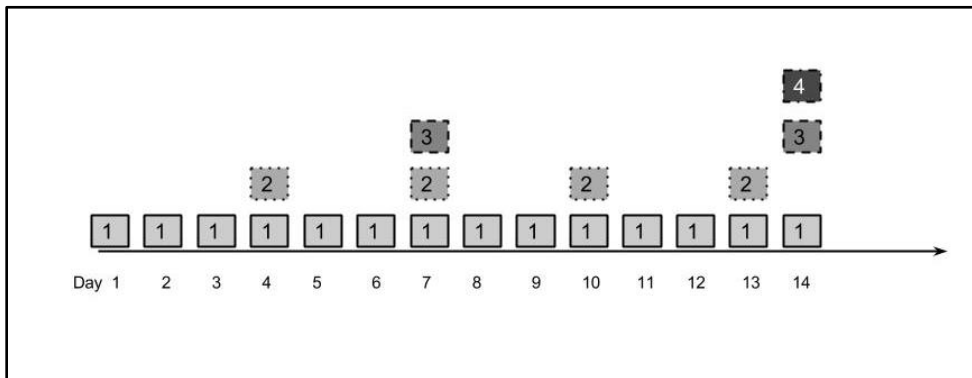


Diagram 1: Study intervals

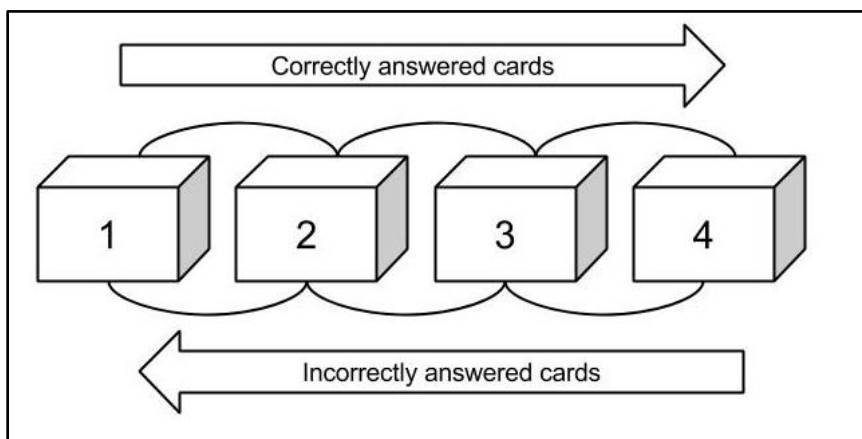


Diagram 2: Demonstration of Leitner's Box for Vocabulary Study

3. Interleaving

Practice that is interleaved (mixed in with other learning and varied) produces better mastery, longer retention, and more versatility (Brown et al, 2014). This sort of practice goes against what many students and even teachers intuitively assume: that massed practice is the fastest and best way to master a new skill. While massed practice does yield fast results, as can be seen in the vocabulary test scores of the student who crammed the night before and the morning of the test, it is by no means the best way to cement that new skill, vocabulary item or grammar point in one's memory. When practice is interleaved, learning feels slower, and one does not get the dopamine-induced satisfaction of achieving quick "results". It requires more effort and is perceived to take more time. However, this added effort is a form of "desirable difficulty" (Bjork and Bjork, 1992) that in fact makes the learning, memory storage and future retrieval stronger.

In the EFL context, specifically regarding vocabulary acquisition, interleaving can best be understood as making connections between words, rather than rote learning of individual, decontextualized lexis items, and deep processing strategies such as this have been found to be far more effective, resulting in greater vocabulary retention than rote repetition strategies (Chamot, 2005). Crow and Quigley (1985) suggest the effectiveness of developing semantic network strategies, also called mind-maps, which organise new words in terms of maps or grids of interrelated lexical meanings. Older studies, such as Higa (1963) hinted at the danger of presenting closely related new words at the same time, unsure of the effectiveness of such strategies in fostering vocabulary retention, however more recent research (Anderson et al, 1994; Brown et al, 2014) strongly suggest that student-generated interleaving strategies such as these semantic mind-maps have a positive effect on linguistic storage and retrieval.

A word learned on its own and completely decontextualised loses much of its storage and retrieval potential. Rather than simply studying random word lists, or even lists sorted into categories, such as fruit, sport, furniture, etc., a better option is to create these semantic maps in which the students themselves create connections between target vocabulary. Chamot (2005), Crow and Quigley (1985), and Pittelman et al. (1985) found that this strategy enables more effective and deeper processing, resulting in greater vocabulary retention than rote repetition strategies.

Two examples of semantic maps are below. In Map 1 (Diagram 3), the student uses one single target word as a *root word* at the centre of the map, and then works outwards from there, connecting already known words to the root word, as well as

creating opportunities to look up new words to express connected words thought in the student's L1.

In Map 2 (Diagram 4), the student uses one root word from the list of target vocabulary, but instead of departing from the list at that point, the student attempts to use as many other target vocabulary items to connect to the root word. Along the way the student can write notes between the words to explain the connection, thus consolidating the connection in his/her own mind.

The biggest advantage of these semantic maps are that they are *student generated*. This means that any connections that are made are personally relevant to each and every individual student, meaning that the connections are stronger and more easily recognizable.

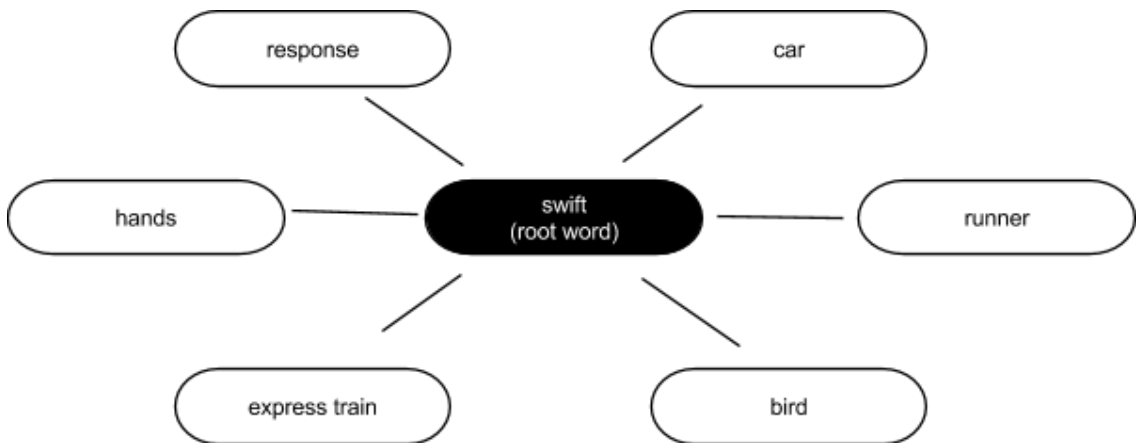


Diagram 3: Example of Semantic Map 1

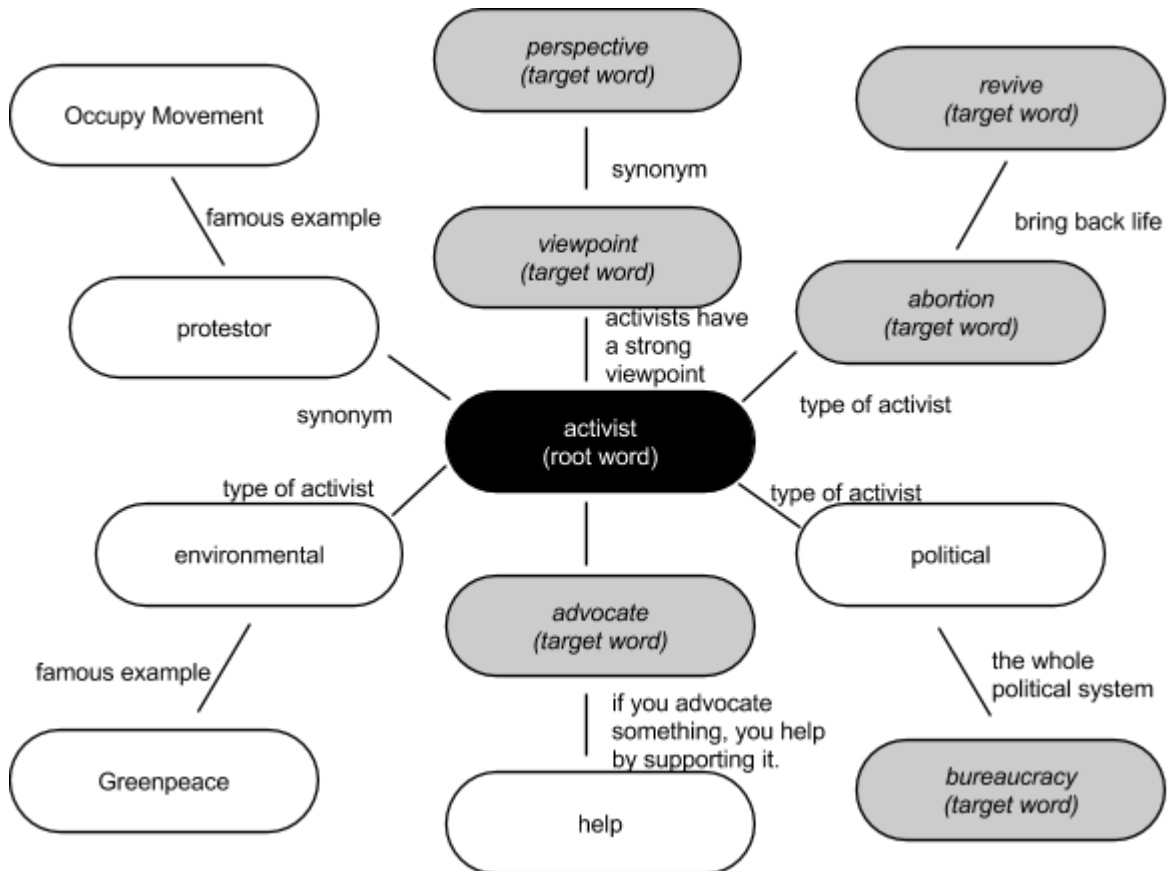


Diagram 4: Example of Semantic Map 2

4. Conclusion

Among EFL learners, Asian students' repertoire of vocabulary acquisition strategies has been shown to be the least numerous and effective, and Japanese students are no exception. Their reliance on simple, quick-fix strategies does not result in long-term storage or high retrieval capacity. However, there are numerous other, more effective SLVA strategies available that provide the kinds of results that are the ultimate goal of language education. While students might at first resist changes to their current regime of written repetition the night before a vocabulary test, Fan (2003) found that students were more likely to use more learning strategies if they were first convinced of their usefulness by their teachers. As Rubin et al. (2007) assert, incorporating learning strategies into classes increases learner motivation, performance, and provides learners with the knowledge and skills to continue learning on their own. It is, therefore, a responsibility of language teachers, this author included, to equip our students

with the tools and strategies they need to learn language for life, not simply the next test.

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