Learning English vocabulary at the university level: some considerations for objectives, strategies and outcomes

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この論文は、日本の大学における英語学習者むけ語彙学習プログラムを紹介する。外国語学習者の語彙習得の分野の研究を総説する。プログラムの目的、習得方法、アセスメントは研究の主要な結果に基づいている。

This paper outlines a program of vocabulary study for students of English language at Japanese universities. The literature on vocabulary acquisition among second language learners is reviewed. Salient findings in the literature form the basis of the objectives, learning strategies and assessment methods that comprise the program.

Learning thousands of words in a foreign language is a long and difficult process, one of the most demanding of all the tasks facing language learners. While incoming students in English programs at universities in Japan might already know basic vocabulary, they need to learn thousands more words in order to reach an advanced level of proficiency in the language. A task of that magnitude takes years of effort. It cannot be achieved in a one-semester course nor will it happen simply by sitting in English classes for four years, without conscious attention to the task from teachers or students. The need for planning of vocabulary study and coordination among courses is a corollary of those points.

Yet vocabulary learning is often approached in haphazard ways in university English programs. Typically, there is subjective selection of words by teachers and students (Waring, 2002), lack of instruction in learning strategies (ibid) and over-reliance on incidental learning (Meara, 1995). Furthermore, coordination of vocabulary learning across courses is almost completely absent. As Sanaoui states (1995, p.25), there is a need "to increase awareness that [vocabulary learning] is an important pedagogical focus to be incorporated into the curriculum."

Rather than leave it up to the student, the individual teacher, or the vagaries of the classroom environment, a vocabulary program based on comprehensive planning of study is necessary for students to optimise their learning in this area. Ideally, such an approach to vocabulary learning would specify which words would be learnt, how and when they would be learnt and how the learning would be assessed. The program would require considerable coordination across the curriculum. However, it would not require specialised vocabulary classes or even much more time given to vocabulary study in existing classes. The program proposed here recommends instruction in vocabulary learning strategies for students—which would take a small amount of class time—and suggests some minor changes to class materials but most of the study would be done by students outside of class.

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Vocabulary Objectives

Before deciding on a suitable number of words for university students to learn, it is useful to consider some other vocabulary levels: the level of students when they enter university and the level of native speakers' vocabulary—that is, where the students are coming from and where they are heading towards. Educated native speakers know about 20,000 words, according to one conservative estimate (Goulden et al, 1990, cited in Nation, 2001). Incoming students of English at Japanese universities have only a small fraction of that knowledge. Research done at Kanda University of International Studies (KUIS) in Chiba showed that incoming students on average had good results on Nation's (2001) test of receptive knowledge of the 2000-word level but poor results on the test of the 3000-word level, which suggested that the average number of English words known by incoming students was between 2000 and 3000 (Van Moere, personal communication). KUIS is a reasonably high-level university; at other universities, the average vocabulary level of incoming students might be a little lower, perhaps between 1500 and 2000 words.

Of course, it is almost impossible for a student to go from the average incoming level of vocabulary knowledge to anywhere near the level of a native speaker in four years of study at university. Even the 10,000-word level would not be a useful objective for most students because of the low likelihood of achieving it. What, then, would be a suitable level? Although students spend fewer years in university than in secondary school, there is much greater emphasis on English and more exposure to it in university English programs. As such, it is reasonable to expect that students will more than double their vocabulary knowledge during their time at university, especially if they make use of vocabulary learning strategies (see below), rather than relying on the most common means of learning—rote memorisation and incidental learning.

This suggests that knowledge of about 5000 English words is an attainable objective for university students. It is probably greater than the current average vocabulary level of graduates in most English programs at Japanese universities. Such an advance on current levels of acquisition is not without its challenges—for students and teachers—but it would not be overly demanding. The 5000-word level results in considerably better comprehension of authentic communication than the 2000-word level. Corpus studies show that, for learners with a knowledge of the most frequent 5000 words, the number of unknown words in authentic written and spoken texts is close to half the number of unknown words for learners with a vocabulary of only 2000 words (Nation, 2001). That might not seem like a substantial difference, but the decrease in unknown words corresponds to much better comprehension because the relationship between unknown words and lack of comprehension of a text is more exponential than linear. Not only does the 5000-word level bring better comprehension of authentic texts but it also makes it more likely that learners will be able to guess from context the meaning of unknown words.

It is not enough, however, simply to settle on a certain number of words without consideration of which words should be learnt. Careful attention needs to be paid to the selection of words. The main criterion should be frequency of use in authentic texts. This ensures that students are likely to hear or read the words in their communication in English, thereby understanding more of the communication and at the same time reinforcing their knowledge of the words. However, students cannot consistently identify frequent words by themselves. Even teachers' impressions of word frequency are not always accurate. It is safer—and easier—to use a list from a large-scale corpus study, such as the University of Birmingham's

Bank of English. This corpus is based on many tens of thousands of authentic written and spoken texts from Britain, the USA, Canada and Australia and contains 450 million running words (University of Birmingham, 2005).

As well as word frequency, students' need and interests should be a factor in selection. In the case of Japanese university students, their needs might include academic vocabulary and vocabulary that often appears on the TOEIC test. Academic vocabulary can be taken from the Academic Word List—a list of 570 words that often appear in academic texts (Coxhead, 1998, cited in Nation, 2001). As for students' interests, multiplicity makes it impossible to cover these in one general list. However, if students were required to add a certain number of words to a list by themselves, they would be able to include, as part of their formal vocabulary study, words related to their interests. Allowing for student input based on personal interest in this way introduces more autonomy and active learning into the process and is likely to raise students' motivation for vocabulary study (Dornyei, 2001).

One other factor that should be taken into account in the selection of words is ease of acquisition. If certain words are easier for students to learn, then giving those words more priority, somewhat independent of their frequency, makes sense because students are able to acquire more vocabulary from the same amount of study. Not only would that raise their English level, but the quick progress could also increase motivation (Dornyei, 2001) and would boost confidence. Some words that might be easier to learn include—among others—cognates of gairaigo (loanwords in Japanese) from English. The benefits of gairaigo seem to have been largely ignored by English teachers in Japan. In fact, gairaigo have probably attracted more attention for the potential problems that they pose. Nicholls (2003) points out that many gairaigo have phonological differences and some have semantic differences from their English cognates. She claims that it is a challenge for Japanese learners of English to override the interference from their L1 and learn the English cognates. That is a fairly common assertion among language teachers and researchers in Japan. However, Daulton (1998) found that Japanese high school and university students performed better on receptive and productive tests of English cognates of gairaigo than they did on tests of non-cognates. Ringbom (2007) points out that language acquisition is usually better when the L2 is related to the L1 and one reason for this is the large number of similar words. He states that "learners should be guided to make use of the built-in lexicon, gairaigo, which provides a powerful tool for more effective learning" (p.4-5). Of course, gairaigo do present some possible pitfalls—slight pronunciation and semantic differences—for learners but overcoming them is probably much easier than learning a new word the usual way—that is, by establishing a connection between a new combination of phonemes and a meaning, a process that fails more often than it succeeds (Waring, 2002).

Strategies

Over the past two decades, researchers in second language acquisition have investigated the effectiveness of various learning strategies for vocabulary acquisition. These strategies include rote rehearsal, the context method, semantic mapping, the keyword method and visual aids. Despite some inconsistencies among the results of the studies, it is clear that some of the strategies are more effective than rote memorisation. Unfortunately, teachers and learners rarely use these strategies and tend to rely on rote memorisation or incidental learning through exposure to new words in communication.

With the advent of communicative language teaching in the 1970s and '80s, incidental learning gained cachet among language teachers because it derived from the use of language to communicate, without a focus on form. However, there are several disadvantages to relying on incidental learning of English vocabulary at the university level. Incidental learning requires certain conditions which rarely occur spontaneously in university classrooms or materials. Firstly, multiple exposures— about 5 to 15—to a new word are usually required for acquisition (Crothers & Suppes, 1967; Tinkham, 1993, cited in Nation, 2001). Furthermore, exposure needs to occur in texts where learners know at least 95% of the words (Liu & Nation, 1985, cited in Nation, 2001), though 98% seems to be optimal for learning (Coady & Nation, 1988, cited in Nation, 2001). For students to learn 3000 words in this way, teachers would have to prepare materials of about 600,000 words in length (3000 new words x 10 exposures each x 20 known words for each new word). That is over 1600 A4 pages of very carefully written text! As well as the vocabulary issues, grammatical constraints would probably also need to be considered in preparing the materials, making the preparation even more difficult. Clearly, such an approach is beyond the capability (not to mention willingness) of most universities' English language faculties. It might be claimed that graded readers could easily perform the same function but any series of graded readers would only contain a small fraction of the target words of a university program and those words that do appear would rarely be repeated a sufficient number of times for acquisition to take place. From the students' point of view, incidental learning takes a lot of time and effort and might not be a very reliable means of increasing vocabulary, all of which has negative effects on motivation. However, despite the drawbacks, incidental learning should—and inevitably does—play a role in vocabulary learning. Although it should not be the mainstay of a vocabulary program, it can complement other learning strategies. Students should be encouraged to do extensive reading and listening, especially with texts that are close to their level. They will acquire some new words this way and reinforce and develop their knowledge of previously learnt words, as well as improve other English skills.

The context method has some similarities to incidental learning. The method involves learners reading a new word and its definition or translation and then reading three or so simple sentences in which the word appears. It differs from incidental learning in that there is a focus on form—i.e., learners are encouraged to notice the word, think about it and remember it—and the exposures are more concentrated in time than is usual with incidental learning. From the perspective of students and material writers, the method is much more convenient than incidental learning while offering many of the benefits. Crow and Quigley (1985, cited in Brown & Perry, 1991) tested similar semantic-based strategies and found them to be more effective than rote memorisation. Brown and Perry (1991) and Wang and Thomas (1995) found that context method groups outperformed keyword method groups, though in Brown and Perry's study the difference was not significant. In contrast to those positive findings, Lawson and Hogben (1996) found that the use of strategies similar to the context method correlated poorly with recall of words on a post-test. Overall, though, the context method's good results in other studies suggest that it has some part to play in facilitating vocabulary acquisition. It might be that it is better suited to later stages of a word's acquisition. Used then, it can add durability to the acquisition and provide deeper understanding of meaning and usage.

The keyword method is a mnemonic technique that has consistently achieved good results in vocabulary acquisition studies. It involves matching a target word in

the L2 with a similar sounding word—known as the keyword—from the L1. The meanings of the two words are then combined in one mental image or sentence, called the keyword image. For example, a Japanese speaker trying to learn the English word "mud" could use "mado"—meaning "window"—as the keyword and then imagine a window covered with mud. The method aims to assist acquisition of vocabulary by creating associations for the form and meaning of the target word with existing semantic and phonological knowledge. Gruneberg (1998) claimed that about 50 studies have found that it facilitates vocabulary acquisition, with only about five studies failing to find an advantage. McDaniel and Pressley (1989) found it to be more effective than the context method. In a study involving Japanese university students, Rodda (forthcoming) also found that the keyword method was significantly more effective than the context method for immediate acquisition and long-term retention. In the study, the main advantage of the keyword method was at the stage of initial acquisition where vocabulary learning using other strategies often fails—as Waring (2002) puts it, "Initial word knowledge is very fragile." (p.11) The keyword method seems to overcome this problem by making semantic and phonological connections from the new word to existing knowledge in the L1. Furthermore, although there have been concerns that the keyword method is not suitable for abstract words, Rodda found that the keyword method resulted in significantly more acquisition of abstract words than the context method did. It is clear from the combined evidence of many studies, that the keyword method is a powerful strategy for learning vocabulary. As a bonus, it might also be more interesting for students than other forms of vocabulary study (Avila & Sadoski, 1996). Its widespread use would probably boost acquisition considerably among university students.

Another feature of Rodda's study with Japanese university students was a comparison of the effectiveness of Japanese translations and simple English explanations of new words. Students were far more likely to remember words that were presented with a Japanese translation than those with an English explanation. This suggests that English-only policies for language classes might not be the best approach at universities. Although an explanation in English of a new word gives students slightly more English exposure, it seems to do so at the expense of vocabulary acquisition. This view is supported to a degree by Yoshii's (2006) study of vocabulary acquisition among Japanese university students reading English texts. He found some benefits for the use of Japanese glosses for unknown English words in comparison with the use of English glosses. In particular, the Japanese glosses resulted in significantly less forgetting of learned words. Although more research needs to be done, the above two studies indicate that the use of Japanese translations might be important when introducing new vocabulary to students.

Review is an important part of all vocabulary learning, whether it is incidental or intentional learning. Waring (2002) points out that, "It is easier to forget a word than remember it"(p.11). Griffin (1992, cited in Nation, 2001) found that this forgetting begins soon after the first learning session. In order to counter the 'forgetting curve,' many researchers (e.g. Baddeley, 1990; Pimsleur, 1967) recommend spaced repetition, which involves reviewing each new word at gradually longer intervals. For example, a word could be reviewed one day after the first learning session, then again three days later, followed by a third review session a week after the second one and so on. Spaced repetition is one of the best-supported recommendations in vocabulary research, yet in practice it is rarely followed. Although teachers often recycle new vocabulary in lessons, it is difficult for them to achieve multiple reviews at gradually longer intervals for a large

number of words. As for students, few of them, even if they are motivated, have the high level of organisational skills needed to keep track of review times for hundreds of words. Fortunately computers can facilitate spaced repetition quite well. There are several software programs (e.g. SuperMemo and Mnemosyne) that present study materials to users for easy and fast review at appropriate times based on the principle of spaced repetition. Although anecdotal, there are reports of high school and university students achieving very good results with vocabulary acquisition using spaced repetition software (e.g. Szynalski, n.d.). Such reports are not surprising given the solid findings in second language acquisition—and psychology research, in general—for the benefits of spaced repetition.

Rote rehearsal is another strategy that deserves consideration in any vocabulary program. It is a simple and fast strategy that involves repeatedly saying the target word out loud for about 10 seconds. Several studies have found benefits for the strategy. Ellis and Beaton (1993) found that rote rehearsal was more effective than the keyword method for productive knowledge of vocabulary. Ellis and Sinclair (1996) found that use of rote rehearsal resulted in better scores on tests of receptive and productive knowledge of words than the use of silent rote memorisation. They attribute the success of the method to its maintenance of the new word in the phonological short-term memory for longer than is normally the case, thus promoting long-term retention. Learners seem to use rote rehearsal often of their own accord. Lawson and Dogben's (1996) study of strategies used spontaneously by learners in vocabulary study found that rehearsal of the word was a frequent strategy and that it correlated significantly with success on a post-test of vocabulary. Although, in general, rote rehearsal does not seem to be as effective as the keyword method, the above studies show that it is a valuable strategy. Given its ease and speed of use, it should be included in vocabulary learning programs. It is probably most valuable at the initial stage of acquisition—the first learning session for a word—when the transition to long-term memory is most prone to failure. It might also be worth using at a later stage in the acquisition of each word, when it can promote the advance from receptive to productive knowledge.

Many researchers who have investigated vocabulary learning strategies have concluded that the most effective approach involves using several strategies to learn each word. Wang and Thomas (1999, p285), who studied acquisition from the perspective of cognitive psychology, stated that "the most optimal training program may include a variety of strategies." Brown and Perry (1991), found that a combination of the context and keyword methods was more effective than either one alone. Lawson and Hogben (1996), observing students learning L2 words, found that:

> …there was a strong tendency for those students employing many strategies for word learning to recall more word definitions than those students employing fewer strategies. (p.121)

The robust agreement on this point should not be ignored. Clearly, a good vocabulary program makes use of a variety of learning strategies.

Outcomes

In an ideal world, after receiving a list of words to learn and instruction in learning strategies, university students would diligently and carefully go about learning the words. Reality, though, is rarely so rosy. Robb (2002), in discussing self-directed learning among students at Japanese universities, claims that it is not very

effective without assessment because most students are not autonomous learners. Without assessment of the acquisition of words on the vocabulary list of this program, only a very small percentage of students will make an effort to learn all of the words. Some students might learn a few of the words and give up. Others would forget about the list as soon as they received it. Of course, they would learn some of the words anyway, through incidental learning in class or rote memorisation of words for tests in individual classes. But the whole purpose of the vocabulary program proposed here is to advance from such haphazard approaches and modest results. So, assessment with consequences—positive and negative—is necessary in order to ensure students make the efforts that the program requires.

In Japanese universities, vocabulary acquisition is typically assessed in a variety of ways. Perhaps the most common way is the vocabulary quiz, written by a class's teacher and based on words that have appeared in earlier lessons. There is sampling of the content so not all new words are tested. Furthermore, students do not need to answer each question correctly; often, answering only half of the questions correctly is considered an acceptable result. Vocabulary might also be assessed as one component of presentations or essays. In such cases, there are no clear objectives for students and assessment tends to be based on the impressions of raters. What all the above methods of assessment fail to do is determine what words students know. This is only partially determined by in-class quizzes because many new words are not included on the quizzes. Even that partial information of students' vocabulary knowledge is soon lost as it is converted into a test score and then mixed with other assessment scores for a course grade at the end of the semester. With such assessment procedures, it would not be possible to determine whether students have achieved the objectives of the vocabulary program.

Rather than the usual forms of assessment, outcomes-based methods of assessment seem preferable. Based on performance and with the purpose of determining what learners can actually do in the language, these approaches developed out of the broader communicative language testing movement, which emerged in the 1970s. On a practical level, the trend towards this kind of assessment has also been advanced by demands for clear vocational standards. Rather than giving marks or grades, outcomes-based assessment typically gives either a pass or fail—i.e., either the student can do this or cannot do it (Brindley, 1994). Furthermore, there is no sampling of objectives; all objectives are assessed (ibid).

Docking (1994) outlines many benefits of outcomes-based approaches. He claims that certification decisions are more easily justified because they are based on real standards rather than a normative basis. Outcomes-based approaches result not only in better assessment but the clear specification of expected outcomes enhances teaching and learning. Although some view outcomes-based approaches as too prescriptive and likely to diminish student autonomy, Docking claims that they encourage learners to take more responsibility for their learning, leading to self-directed and active learning. There is some support for this in Dornyei's (2001) claim that clear and specific objectives increase student motivation. Dornyei goes on to claim that if objectives are challenging but realistic, they increase students' motivation, which should lead to better achievement, according with Docking's claim that outcomes-based approaches can raise standards. One other benefit of this kind of assessment is that students get clear information about their areas of weakness (Brindley, 1998) and can therefore take steps to improve them.

Although the standard use of communication tasks in outcomes-based assessment would not be practical for vocabulary assessment, the principle of requiring proof of proficiency with all objectives in outcomes-based assessment is

consistent with the aims of the program. What that translates to in the context of the program is a requirement for students to show they understand each word in the program by the end of their time at university. Given the need to test knowledge of all the words on the list, assessment would be somewhat time-consuming for both students and teachers. Ideally, students would be able to take the tests when they like and be able to retake tests of failed objectives multiple times until they pass.

Conclusion

Judging from average acquisition in secondary school, students in English programs at Japanese universities should be able to extend their vocabulary knowledge to 4000 words simply using the same methods of rote memorisation and incidental learning. If they make use of more effective strategies—such as the keyword method, rote rehearsal, spaced repetition and the context method—they could quite easily reach the 5000-word level.

The words that they learn should be primarily the most frequent English words. Perhaps 3500 words on the vocabulary list would be chosen on the basis of frequency—that is, the 3500 most frequent words in a corpus, such as the Bank of English. As students probably learn most of the first 2000 words in secondary school, they would learn the next 1500 most frequent words at university. A further 500 words would come from the Academic Word List and 500 from gairaigo or other words that are easy to learn. The remaining 500 words could be chosen by each student based on personal interests and needs.

In order to ensure optimal learning, students would be instructed in the use of effective strategies for vocabulary learning. They would receive materials that facilitate the use of the strategies—e.g. vocabulary lists with keywords and keyword images. The context method and rote rehearsal would also be encouraged. Students would also have access to software programs that provide review with spaced repetition. Some target words could be added to class materials so that incidental learning would complement other strategies. Although instruction in how to use the strategies would take place in class, most of the learning would be done outside of class. Because the above strategies lead to faster learning, the program would not place great demands on students' time—about 90 minutes a week would be enough. Using the strategies, students would make considerably greater gains in vocabulary acquisition, leading to better English proficiency, more confidence in their learning ability and possibly more motivation to learn (Covington, 1998, cited in Dornyei, 2001).

Outcomes-based assessment is most congruent with the approach of the program—that is, specification of clear objectives that could and should be attained by all students. In assessment, it is worth making a distinction between receptive and productive knowledge of words. Because productive knowledge is more difficult, tests of production should come at a later stage. The overall objective of the 5000-word level could be broken down by year level to enhance student motivation (Dornyei, 2001) as well as management of the program. For example, first-year students would need to show receptive knowledge of the 3000-word level, second-year students the 4000-word level, third-year students the 5000-word level and fourth-year students would need to show productive knowledge of the 5000-word level.

The vocabulary program proposed here is based on strong findings in research and the views of several leading researchers. It is not a very difficult program for teachers to implement or for students to follow yet it would result in

considerably greater acquisition of vocabulary. In turn, we could reasonably expect that it would lead to higher English proficiency, better achievement in English content courses and better TOEIC results. Other benefits could include more motivation and self-directed learning among students. While we should not expect too much from the program, the research suggests that a little effort along these lines would lead to impressive rewards.

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