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both deliberately and incidentally

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# The Case for Teaching High Frequency Vocabulary Both Deliberately and Incidentally

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Research in corpus linguistics indicates that high frequency words are the most important ones for non-native English speakers to learn as they occur the most often in both formal and informal language (Nation, 2001). In texts, 80% or more words are from among the most frequent 2000, giving learners many opportunities to meet each word. Furthermore, Nation argues that rather than learning the next thousand most frequent words, which only add 4.3% coverage, it is more effective for learners to focus on Coxhead's (2000) Academic Word List (AWL). These are 570 high frequency words for special purposes in academic writing, making up 8.5-10% of the words in any academic text. The AWL is important for learners who will use English for academic study.

If learners know less than 80 percent of the words in a text, Hu and Nation (2001) state it is not comprehensible. Laufer (1989) points out that 95% coverage is needed for learners to be able to read without their dictionary. The average coverage Japanese high school students are reported to have for government authorized EFL textbooks is 67% (Browne et al., 2007a). The texts are more difficult than those used by native speakers (Browne, 1996; 1998; 2008). Reading these texts may be nearly impossible, regardless of the purpose or focus which directly contradicts the Japanese Ministry of Education, Culture, Sports, Science and Technology's (MEXT, 2003; 2009) objective for high school EFL reading classes to "further develop students' abilities to read passages and understand the writers intentions, and to foster a positive attitude

towards written English.”

Hirsch and Nation (1992) argue that 5000 words is a very important threshold for learners to be able to read and comprehend general texts including popular books and major newspapers without help. Shillaw (1995) and Barrow et al. (1999) found that Japanese university students had an average vocabulary size between 1700 and 2300 words after 800-1200 hours of instruction. Brown et al. (2007a; 2007b) maintain Japanese students do not know enough high frequency words. The focus in MEXT's high school texts is on teaching low frequency words (Browne, 2008). Not enough attention is given to the most used and necessary high frequency words, in the 1000-2000 range. In addition, while the average coverage of the most frequent 2000 words for native speaker texts was 85% on average, that of Japanese high school EFL reading texts was 77% (Browne, 2008).

Nation (2008) states that both deliberate and incidental vocabulary learning are necessary and complementary. “Deliberate learning can help shorten the time before learners are able to listen or read and thus be ready to do incidental learning” (p. 105). Words that are deliberately learned can be strengthened and enriched by incidental learning. Nation (1982), Paivio and Desrochers (1981), and Pressley et al. (1982) found using word cards to learn vocabulary is the most effective in terms of speed and amount of learning, even though it is non-contextual and non-communicative.

Experimental conditions show that learners vary in their learning rates between 30-100 words per hour. These are much higher than the 3-6 words per hour of reading where the chance of a word being remembered after one meeting is 0.15 (Waring & Nation, 2004). Nation (2008) cautions that form focused learning using vocabulary cards needs to be accompanied with meaning focused input and out-put, and fluency development. Waring and Takaki (2003) show how incidental learning from reading occurs on many levels by enriching word knowledge through repeated exposure.

Because of the high vocabulary load of authentic materials, learners

would need to study the language for several years before being able to read a book where they can recognize 95% or more the vocabulary, it is essential to make use of simplified texts (Nation & Wang, 1999). There should only be one in 50 words that is unknown in a text. English teachers often just guess about the number of words their students know and at what level they should be reading at. They also make decisions on the words their student should study based on past university entrance exams and their own intuition. Crossley et al. (2011, p. 88) argue it is important for textbook publishers and educators to address comprehension factors “not accounted for in traditional readability formulas (i.e., word length and sentence length are proxy measures of decoding and syntactic parsing)” that are used for simplifying text. This can be done by using Vocabprofile (VP) a computer program that performs lexical text analysis suggested by Cobb (n.d.a) on his website:

It takes any text and divides its words into four categories by frequency: (1) the most frequent 1000 words of English, (2) the second most frequent thousand words of English, i.e. 1001 to 2000, (3) the academic words of English (the AWL, 550 words that are frequent in academic texts across subjects), and (4) the remainder which are not found on the other lists. In other words, VP measures the proportions of low and high frequency vocabulary used by a native speaker or language learner in a written text.

Nation (2008, p. 70) reports that the quantity of input “needs to be close to 500,000 running words per year which is equivalent to 25 graded readers per year” to have optimal opportunities for vocabulary repetition. The MEXT approved text readings per year usually have less than 10,000 words. Extensive reading of graded reading materials has been widely used to increase vocabulary size as well as to improve overall ability in English (Day & Bamford, 1998; Susser & Rob, 1990). Important motivators for extensive reading are interesting books at an appropriate word level and a love of reading. Graded readers cover a

200-5000 word vocabulary range and are graded according to difficulty levels. Reading at the appropriate vocabulary level enables learners to process text fluently, and develop successful reading and vocabulary coping strategies.

### **A Vocabulary Program Using Word Cards and Graded Readers**

An individualized research driven vocabulary and extensive reading class for Japanese high school students was started in the early-1990's, after results of a vocabulary levels test revealed they did not know many of the high frequency words. In the class, students directly studied high frequency vocabulary they didn't know and read texts at a 95-98% readability level to increase their vocabulary incidentally. There were multiple reasons why the program was implemented. The first was that the authorized MEXT texts were too difficult for high school students to read; second that they did not provide enough coverage of the most frequent 2000 words and the AWL; and that the reading passages in the MEXT texts were too short (800-1200 words) to allow learners to meet the words often enough to facilitate vocabulary acquisition. The goal for the students was to quickly and systematically acquire more vocabulary in order to enable them to read, write, speak and listen in English more fluently and accurately.

There was one reading class per week devoted to using note cards to study vocabulary directly followed up with an extensive reading program implementing graded readers, so that they could study vocabulary incidentally. Other strategies that were taught included dictionary skills, high frequency derivational affixes, guessing, and speed-reading. For three years, students followed the same study and assessment method, and used most of the same materials. In the first class, students were told the theoretical rationale and procedures under the following headings:

- Why the most frequent words in English are so important.
- How memory works.

- Why it is important to read and meet the most frequent words.
- How to make and study vocabulary cards.
- How to choose a graded reader and write a book report.

### **Materials for Word Card Study and Extensive Reading**

Materials for vocabulary study included a vocabulary booklet made in-house by the teachers and students with West's (1953) General Service list (GSL) and Coxhead's (2000) AWL. Waring and Nation (1997) believe the GSL is the best list of the most frequent 2,000 headwords even though it was developed in the 1940's, based on a written corpus. The list gives information about the frequency of each word's meanings.

The words were listed in frequency order in the vocabulary booklet and had the most used translation in Japanese next to each word to ensure students were studying the meaning with the highest frequency. This was because students who used electronic dictionaries did not have access to the only corpus-based Japanese-English bilingual dictionary, which (at that time) was available only in paperback. In addition, the vocabulary booklet contained diagrams on how to study the word cards in English and Japanese. Explicit information was also given on the assessment procedures.

Students were given a small clear file with pockets used for word study and to store their vocabulary booklet that they would keep for three years and a pack of 100 note cards for when they needed them. Notebooks for book reports on graded readers were also given to the students and they could fit into the clear file at the back. School fees covered the cost for materials. From various publishers, over 1200 graded readers, from 200-4000 word level were purchased by the school and color coded according to word level.

### **Making Word Cards**

To make word cards, students highlighted 100 words they did not know beginning with the first word of the GSL in the vocabulary booklets. Students did not highlight exactly the same words. Once

they highlighted 100 words, they begin to make their own vocabulary note cards in a specified way. Students copied the word and the most frequent meaning from their vocabulary booklet and used a dictionary to complete each card in the L1 and L2 (Figure 1). They studied the most frequently used definition of a word with the understanding that if they met the word in a context that did not fit, they will recognize that it likely had another meaning and so they would use other strategies to determine the word meaning.

The process of making vocabulary cards is time consuming but there is a certain amount of deep processing which has been identified as a factor in vocabulary retention (Nunan, 1991; Coady, 1993). Nation (2001, p. 351) argues “the use of the first language to convey and test word meaning is very efficient.” The best way Nation (2008) states to communicate meaning is through L1 translation. He feels you need to be clear, simple and brief. In addition, information in the L1 on the card helps students to have a greater depth of understanding.

Through this method, students kept track of how many words they learned by means of their word card study by highlighting words in their vocabulary booklet and putting the number of the word on their vocabulary card. These systems give students a sense of progress, as the cards are portable; made by the learner for their own needs; and thus are self-motivating. Targets that are set and met can be seen. Once the cards were made, peers and the teacher checked them, further making students accountable.

L1 Side	L2 Side
<ul style="list-style-type: none"> <li>● Meaning of the word</li> <li>● Part of speech</li> <li>● Collocations and drawing (optional)</li> </ul>	<ul style="list-style-type: none"> <li>● Phonetic symbols</li> <li>● Word to be studied</li> <li>● Number of the word from the GSL</li> <li>● Collocation of the word</li> <li>● Date the card was made</li> </ul>

**Figure 1.** Information on the Word Card

## **Studying Word Cards**

The word study method was based on research by Leitner (1972), Baddeley (1990) and Mondria (1994) where not only the retrieval of words but also the number and the timing of the retrievals are important. Each time a word is met again, the neurological paths between the form of the word and its meaning are strengthened. The stronger this link, the easier future retrievals will be. Nation (2008) states that word cards encourage retrieval and serial learning can be avoided. Both receptive (meaning is retrieved in L1) and productive retrieval (L2 word form is retrieved) can be done as the target word and the meaning are on different sides of the card. Productive retrieval is more difficult than receptive.

To study their word cards, students took 10 cards from their pack of 100. They studied new words by looking at the English word and remembering the Japanese. If they knew the word, it was put at the back of the pack. If they did not know the word, it was put it near the front to be soon met again. They learned all 10 cards by saying the words aloud. Then they shuffled the cards to check their memory again. If they forgot a word, they repeated the study process.

Next they learned new words in English by looking at the Japanese meaning and saying the word in English. This was more difficult. Then they repeated the steps until they learned 10 new words.

The known words were placed in the second pocket of the card file. Then 10 new words were taken and the process repeated itself. With increasingly spaced intervals for rehearsal, students took cards out of their second pocket and tested themselves to see if they could say the word in the L2. Words that were forgotten went back into the first pocket to be studied again and words that they knew were put in the third pocket. The known cards kept moving up into pockets and the forgotten cards went into the pile of unknown words. In class every week, students tested themselves on the words in their card file pockets. Students were encouraged to keep the 10 cards in their pocket



to periodically study them during the day. Studying using word cards is just the initial stage of learning a word.

### **Reading Graded Readers to Strengthen Learning From Direct Learning**

There is a complementary relationship between the decontextualized learning from word cards and the contextualized exposure students receive through reading graded readers. Students were taught how to choose a graded reader from the library. Students chose a book where they could understand every word except two on a page disregarding proper nouns like names of places and people, between 95-98% word coverage. In the first class of every term, students went to the library to choose new books together. They were told to choose a book on topics they like. If they did not like the book, they were encouraged to choose another. Students read the book and in their extensive reading notebook wrote a short reflection according to criteria:

- The title of the book.
- The author of the book.
- The number of pages in the book.
- The genre of the book.
- What the book is about.
- What is the best part of the book.
- What did you like about the book?
- The difficulty level of the book.

Teachers read the entries and made comments and recommendations whether the student should stay at the same level, or move onto the next one. Students read a minimum of 100 pages every six weeks and about 700 pages per year.

Even though it is recommended that learners should read at least 20-30 graded readers a year; pages were counted instead of number of books. In this program, there were students reading at different levels,

therefore counting the number of pages students felt would be a fairer system. For example, books at the 200-level are just a few pages long, while at the 1500-level they are well over 80 pages. Unfortunately the graded readers did not have the number of words listed in each book and that information was not available from the publishers.

### **Assessment of Direct and Indirect Vocabulary Learning**

Students individually were assessed every six weeks on their word cards during regular examinations at the school. During spring and summer holidays, students were also expected to study vocabulary and there was a test the first class of the term. This served to give importance to the activity within the school. Teachers other than the class teachers helped with the one-on-one evaluation. Students brought their own 100 cards to the exam and the examiner from the pack chose 10 randomly. Then the examiner spread them Japanese side up on the desk for the student to say the words in English. Students who know more than 8 out of 10 words, can pass. Students who fail have to keep studying and retesting. When they pass, then they get a new pack of 100 cards from the teachers, and the process of making and studying cards begins again. Thirty percent of their reading grade came from making cards; learning their cards; reading 100 pages; and reporting on the process. Teachers gave the students both written and oral feedback.

After this class had been taught for a number of years, it was part of a MEXT funded Super English Language High School (SELHi) research project from 2005-2007. The purpose of the research was to determine how many high frequency vocabulary words two classes of Japanese high school students could learn through directly studying vocabulary from word cards, and at what word level they were reading.

This was done by analyzing:

- 1) The GSL and AWL word frequency number the student was studying.
- 2) The graded reader word level at testing periods in the school

calendar.

- 3) A pre-post paper-based Vocabulary Levels Test (VLT) (Nation, 1993; Schmitt, Schmitt and Clapham, 2001) was given to measure knowledge of the words at the 1,000, 2,000, 3,000, 5,000, 10,000 levels along with the AWL.

The findings from Kyoto Gaidai Nishi High School's (2007) study showed the average student almost completed their study of the GSL and the AWL by the end of the third year. The least proficient students were studying words at the 2000 level. Before their midterms or term tests, students could be seen studying their word cards repetitively, even though they had been studying through the semester with spaced retrieval. It would have been better for them to test when they were ready and not by an externally determined date. Some students may have been ready to test sooner and could have started learning even more vocabulary. A more learner-centered system would have allowed them to make the decision when they knew the words and were ready to move on. On the other hand, by assessing the students during the school wide testing period the emphasis on the importance of vocabulary study encouraged the students to be more accountable for their learning.

Ideally learners should make 10 cards, study them and then after learning them make more. For students at this school, this approach was tried and it was found that very few were disciplined to do this. In contrast, making 100 cards and then studying them 10 at a time was much more appealing, because the packages come in 100. Students saw a new package of cards as a reward for a job well done when they had passed a test on 100 cards. Most students passed to the next level were all making cards at the same time even though the words were different. Those who did not pass the test regardless of their proficiency level tried very hard to do so as they wanted to progress. There was a sense of community.

Students reported it was motivating for them as they saw the packs of cards accumulate and along with the highlighted words in

their vocabulary booklet. In the years I worked with the program, not a single student lost their cards, or booklet. Points were given to students who made their cards in the proper manner. If students made cards on words they already knew then they were only cheating themselves.

Pre and post results of the Vocabulary Levels Tests (VLT) (Nation, 1993; Schmitt, Schmitt & Clapham, 2001) showed that students in the class improved significantly in all high frequency levels, but were not all able to acquire the first 2000 words. There was a low increase on the AWL. This could be due to the fact that they were reading mostly fiction, which has only about 1.7% coverage (Nation, 2001). These results are a reminder that vocabulary learning is a long slow process that requires the word to be recycled many times for it to become acquired. Nation (2008) points out that it takes three to five years for students to learn the first 2000 words. These findings showed it takes much longer to acquire a word than the 20 times suggested by Waring and Nation (2004). Even though students thought they knew the words when they studied the cards over an extended period, there were many they still did not know. Students could have tested themselves on all of their cards periodically, and then once again studied the words they could not remember.

Through reading graded readers students could meet the high frequency words in different contexts. The results showed there was a wide range in the high frequency vocabulary levels of graded readers students were reading. In their first year, many started at the lowest 200-level, while a few were reading well over the 2000-level. Most students were reading near the 2000-level at the end of the third year. Some students choose to read at much lower levels level than their vocabulary word card study and they were allowed to as they were motivated to read. It was important for students at higher levels to read more at the same level than the lower levels because the chances of them meeting the high frequency words at that level becomes lower. The mean was reported at the 2000 level where students would be able

to read 85% or any text or more. This was a huge increase from the 400 mean when they started.

All students at the end of three years could see their progress when they looked back at their book reports when they were mostly reading at the 200-level. Two students in three years moved from a 300-level to 4000. Perhaps students could have been challenged to read more than 100 pages every six weeks. Students who have finished studying the 2000 words, should be encouraged to read academic texts in an area they are interested in as it could possibly raise their proficiency in the AWL.

## **Conclusion**

This method of learning vocabulary through word card study and graded readers at the high school where I taught, followed Nation's (2008) belief that learners need to take responsibility for their own vocabulary learning which builds autonomy. Students were taught to understand the principles of vocabulary learning and apply them. They had control over the words they studied and books they read, when they would study or read and test themselves on their word cards.

First it is important to know the needs of your learner's vocabulary levels and then design a program to facilitate their learning individually. Teachers should be taught to use the corpus. Even native speakers cannot rely on their intuition. I was as surprised as my students by the most frequent usage of the word "party". "Party" is to many of us "birthday party" when in fact, in terms of frequency, it is a political group as in "political party".

There are better, cheaper, less labor-intensive research driven vocabulary tests and courses of study available on-line that students can access from their cell phones or computers that follow similar methods, but are far more interactive. The tests utilize IRT (Item Response Theory) and elements of Signal Detection Theory to quickly assess the number of English words known by learners, as well as their depth of word knowledge (Browne, 2007a; 2007b). The electronic

word card study is linked with extensive graded reading and listening, and interactive games.

I am still applying what I have learned on how students should study high frequency words in my present university teaching context. I have students on-line check their vocabulary size and high frequency word levels. Even students with large vocabulary sizes have gaps in their knowledge of the most frequent 2000 words as Browne (2008) also found. To inform my vocabulary teaching in a content-based Model United Nations course for advanced level students, course readings were profiled using a Web Vocabprofile (Cobb's, n.d.b; Heatley & Nation, 1994). It was found that 72.58% of the words were in the most frequent 1000 words and 4.46% in the 1000-2000 range. About 11% of the words were from the AWL and 12% were off-list content words and proper nouns. There were 2716 different words and the token per type ratio was 6.95. The words for my learners that are most critical are the AWL, so I gave students the list of those words in the text and had them check to see if they know them or not. For the unknown words I advised them to make word cards and to study with spaced retrieval. The most used content words in the off-list, I gave to the students to learn. For example, the word "caucus" was used 41 times and "agenda", 44 times. The word "utmost" occurred just once, so it was ignored. Low frequency words become important when there is academic subject matter.

Contrary to the usual practice, high frequency word lists for academic fields should be a goal for students only after they have acquired the first 2000 and the AWL. Like Nation (2008, p.1), I believe that "teachers 'most important jobs in order of importance' are planning, strategy training, testing and teaching vocabulary" both deliberately and incidentally.

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