**Vocabulary Teaching through a Language Textbook**

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**Abstract**

Vocabulary pedagogy, especially recycling in textbooks seems to have been overlooked compared to grammar teaching in high school. To improve the quantity and quality of vocabulary, it may be very important to know the students' vocabulary size and how the both teachers and students learned vocabulary before they entered universities. The aim of this essay is to analyze which vocabulary terms are highlighted in a high school English textbook, and how the target vocabulary terms are presented. The textbook analysis in this essay found that the particular textbook highlights appropriate words in terms of frequency. However, most of these are single words and word association and collocations are often ignored. In addition, the number of target words in each chapter needs to be improved by considering repetitions of partly known words. Moreover, the target words are always presented in the same form or even in the same sentences that does not enhance recycling. Finally, the interval between repetitions is limited. Thus, teachers should emphasize the importance of repeated reviewing for vocabulary learning to retain what students have learned both in and outside class.

**Keywords**: Vocabulary learning experience, Vocabulary size, Learning support, Vocabulary learning strategies, Repeated reviewing

**Introduction**

Although grammar teaching through language textbooks has often been discussed, vocabulary pedagogy especially recycling in textbooks seems to have been overlooked. Barker (2007) points out that vocabulary is often repeated little in textbooks, many teachers do not have systematic vocabulary teaching strategies, and many of them tend to leave vocabulary learning to students. In fact, vocabulary learning is often considered as independent learning by both teachers and students in Japanese high school. In addition, since corpus research has been developed and almost all monolingual dictionaries are based on corpora (Schmitt, 2000), word frequency seems to come in second place in language teaching. However, some textbooks do not seem to select satisfactory vocabulary terms. According to Kennedy (1998), 20% of the most frequent 1000 words in a corpus of learner's textbooks do not appear in the most frequent 1000 words in *Cobuild*. Furthermore, in terms of series textbooks that are divided based on level, there is no clear increase in vocabulary difficulty.

In Japanese English education, the number of vocabulary terms learning requirements from junior high school to high school was lowered from 4,900 to 2,700, and the current requirement for junior high school is 900 while it is 1800 for high school (Idoine-Shirai, 2007; Chujo *et al*., 2007). Many students in the Management course often claim a limitation of their vocabulary. Because of this small amount of vocabulary terms requirement, which vocabulary terms teachers should teach is an important issue.

It seems to be very important to know the vocabulary size of our students not only for us, but also for the students, so when Management course students enter Konan university, they take the GTEC and vocabulary test. In addition, it is also important to know the students' vocabulary learning experiences and how the students learned vocabulary when they were high school students. The aim of this essay is to analyze which vocabulary terms are

highlighted in a high school English textbook, and how the target vocabulary terms are presented. To conduct this research, firstly, previous studies of vocabulary in language textbooks will be introduced. Secondly, the aspects of target vocabulary terms used in the textbook, such as their amount, word families and comparison with the word frequencies used in the *British National Corpus* (hereafter BNC) will be examined. Thirdly, the means of presentation of the target vocabulary terms will be analyzed based on the number of repetition and in what section they are presented. Finally, the results of the textbook analysis will be critically discussed.

**Vocabulary teaching and learning through textbooks**
In terms of the selection of vocabulary, both quantity and quality of words have to be taken into account. First of all, there are several aspects that need to be considered such as, form, structure, syntactic pattern, meaning, lexical relation, collocations, orthography, pronunciation, length, morphology, grammar, semantic features, and so on (Laufer, 1997). In addition, from the learner-centered teaching viewpoint, frequency of use, availability, learnability, opportunism and interest are key factors as well (O'Dell, 1997; Granger, 2003). Although frequency in language teaching has been a controversial issue, it may be one of the most influential factors in vocabulary acquisition. While Widdowson (1991) claims that frequency of information is not any guarantee of vocabulary teaching and learning, Kennedy (1998) suggests the frequency based word list as a useful learning tool. Nevertheless, people have very little intuitive awareness of frequency (Biber & Conrad, 2001; Granger, 2002), thus, it would be helpful to use corpus data. In addition, word frequency and memory seem to interact with each other. Diana and Reder (2006) point out that high frequency words have an advantage when memory is tested with a recall task. In contrast, since low frequency words require more attention to be learnt, they have an advantage when memory is tested with a recognition task. Schmitt (2010) also claims that word frequency makes the difference between productive and receptive skills. If learners actually encounter high frequency words in their life or in the course of achieving their learning goal, the high frequency words would be of low cost and higher benefit (Barker, 2007).

Secondly, in terms of the required amount of vocabulary, 2,000 words are often regarded as the initial goal for second language learners, and knowing the first 2000 words would increase comprehensible input (Schmitt, 2000). Nation (1995) also states that the first 2,000 words should be taught explicitly, and for authentic written materials, 3,000 to 5,000 words would be required (Nation & Waring, 1997). As mentioned before, Japanese junior high and high schools require 2,700 words for the six-year school education. However, the level and amount of vocabulary required for university entrance examination preparation seem to be higher than 2,000 to 3,000 words. Thus, students buy vocabulary books as secondary material that are selected by each school and memorize new words from these books by themselves which is usually complemented by a weekly quiz held at their school. Therefore, both teachers and students believe that learning vocabulary only from textbooks is not sufficient.

The next step of the selection of vocabulary is to analyze how the target vocabulary can be taught and learnt effectively. Some of the factors that may affect vocabulary acquisition are the depth of processing, the number of reviews and attention (Lopez-Jimenez, 2009). As Schmitt (2000) states, vocabulary acquisition is an incremental process, not only introducing new words but also reviewing words that students encountered before is important. In this paper, two micro and macro components that are memory and learning strategies will be discussed.

Firstly, memory consists of long-term memory and short-term memory, with the latter used mainly for temporary information retention. One of the systems of short-term memory, called phonological loop, corresponds to a rehearsal mechanism. Short-term memory can only retain information for a few seconds, but this retention period can be extended by rehearsal. The rehearsal mechanism enhances the process of storing information, by transferring and recording the information in the long-term memory (Schmitt, 2000; Haarmann *et al*., 2003; Field, 2004). However, forgetting is also said to be a learning process, which can be occur even if a word of especially receptive knowledge is mastered well (Schmitt, 2000). However, the speed and rate of forgetting seem to be controlled by repetition and recycling. According to Ebbinghaus (1966), 50% of new information is forgotten after five days if individuals do not review the information. (Ebbinghaus, 1966 cited in Keder, 2009) However, if individuals review the information the day after it was learnt, about 80% of the information is remembered five days later, and if the individuals did a second review between day 3 and 4, about 80% of the information is remembered even two weeks later. The number of recycling times has often been discussed and the claims vary from 5 to 16 (Barker,2007; Lopez-Jimenex,2009). Nevertheless, Keder (2009) argues that Ebbinghaus's forgetting curve shows that the number of repetitions is not the issue but the time when learners review the information is important. However, the forgetting curve does not explain the quality of information. As Nation (2001) claims, recycling leads to not only quantity but also quality of vocabulary learning. In addition, the number of recycling times gives some clues as to the vocabulary's usefulness and its relationship with other language materials. Lopez-Jimenez (2009) presents the distinction between interval, type and number of exposures.

Secondly, in terms of learning strategies, good language learners apply several strategies (Schmitt, 1997). In addition, explicit learning of vocabulary is important especially for students who have limited vocabulary (Nation, 1993). Lopez-Jimenez describes some explicit vocabulary presentation techniques such as synonyms, antonyms, L1 translation, written explanations, definitions and visual presentation. One limitation of synonyms is that there are few words that are exactly similar. Laufer and Shmueli (1997) claim that L1 translation is less time consuming and is retained better than L2 definition. However, using L1 translation requires less access to a target language for learners (Thornbury, 2002), and this may lead to lack of attention to word strings and units which is identified as one of the major causes of non-native speakers' errors (Schmitt *et al.*, 2004). In addition, effective vocabulary teaching and learning strategies are those that involve new and partially known words, promote active processing and provide various exposures (Yip & Kwan, 2006).

Finally, it may true that some vocabulary learning strategies are not directly related to textbook analysis. However, they appear to interact with each other and this interaction may be useful to discuss to some extent. In spite of the fact that there are many claims that applying a variety of strategies enhances students' vocabulary learning outcomes, there seems to be some aspects that need to be considered. For example, although some shallow cognitive processing techniques, such as writing repetition, seem not to affect retention (Schmitt, 2000), one survey, which was conducted by Schmitt (1997), shows that 76% of Japanese students stated that they used a writing repetition method and 91% of them claimed it was helpful. In the CUBE English classes 1 and 2, which are required classes for the freshmen in the Management course, the students are assigned to maintain a *Learning Journal* every week and the students decide their own English studying material by themselves. Many students choose vocabulary study for their *Learning Journal* and about half of them use a writing repetition method. Another research shows that students performed better with their familiar strategies than with new strategies that were suggested by their teachers (O'Malley &

Chamot, 1990). Horwitz (1988) also claims that teachers should consider learners' feeling and not only which strategies are effective but also those that feel comfortable to use for students. Therefore, teachers need to suggest various learning strategies to their students and give them opportunities to use them. In the CUBE English 1 and 2 classes, various vocabulary learning strategies such as using flash cards, corpus, and dictionaries are introduced with emphasis on learning not only individual words but also word association and collocations. Furthermore, materials such as *Quizlet*, an online application, and an online vocabulary quiz on Konan Moodle are used and students also share how they usually study and prepare for vocabulary tests with their classmates.

**The Target Vocabulary in the English Textbook**
**Method**
This section consists of two main questions: Which words are highlighted as target vocabulary terms, and how are they presented in the textbook. The textbook selected for this analysis is the most frequently used in high school first grade among 36 textbooks (16 publishers) in Hyogo prefecture in Japan (Hisamura *et al.*, 2010).

First of all, the whole textbook and the highlighted target words were analyzed in terms of their number, word family and frequency of occurrence in the textbook. Secondly, the data of the whole textbook and the target words were compared with *Lextutor* to find out what types of words are highlighted. Thirdly, all the above data was compared with BNC.

Before presenting the results, one systematic limitation of Lextutor needs to be mentioned. The limitation of obtaining data from Lextutor is that words in a phrase are counted individually and not treated as a chunk of words. This has a negative influence on the result. For instance, the textbook presents two phrasal verbs such as 'think of' and 'think about' differently, but if both words are processed in this system, the result would be 'think=2, of=1, about=1', and this is not the intention of the textbook creators. In addition, although there is no uniform methodology of words presentation, some new words in a phrase are presented both as a single word and as a phrase, such as 'cheer' and 'cheer up', and in the case of these particular words, 'cheer' is always used as 'cheer up'. Thus, if both single words and phrases are examined by this system, the rate of occurrence would be influenced negatively. Therefore, in terms of the target words, only 212 single words were examined, although the process treated some single nouns as two or three different words (e.g. *New Zealand* → *new* and *zealand*). Moreover, there are nine nouns that overlap but are presented separately (e.g. comic, comic-book, heritage, site, world-heritage-site, bear, teddy-bear, independence and the-father-of-independence). However, the number of occurrence of all these words in the textbook is consistent. For example, 'comic' is always used as in 'comic book', thus, to avoid double counting, only the shortest words such as 'heritage', 'site' and 'independence' were added in a target words list. However, in the case of 'teddy bear', both 'teddy bear' and 'bear' are target words, thus 'teddy bear' was included in the list. Finally, proper nouns, such as 'Lake Inle' and 'Intha people', were omitted because they are highly specific, but countries' names were included.

**Result and Discussion**
First of all, the textbook consists of ten chapters, which have reading content, vocabulary and grammar lessons, and two chapters that focus only on reading and vocabulary but not grammar. The target vocabulary terms are shown beside the reading context, and the number of all target words and phrases is 281. There are many words and phrases which overlap or

have some features sharing the same word family but are presented separately such as *wake* and *work*, *think, think about* and *think of*, and *independence* and *the father of independence*, thus the number of word families is less than 281. Figure 1 shows the number of words and target vocabulary terms in each chapter. As we can see, except in two reading focused chapters, the number of words and target words increase gradually. In terms of reading fluency, this word increase may be appropriate, however, for vocabulary learning purposes, the burden of the number of words to be learned increases as well. If we also consider repetition and recycling of words that students have already learnt, and other required vocabulary terms from extra vocabulary learning books that are not related to their main textbook, this would represent a high demand on students. In fact, this may often occur in the teaching and learning context and may result from a lack of attention to repetition and recycling. This quantity based vocabulary teaching may lead to a lack of attention to the specificities of vocabulary knowledge, which would be fostered by recycling, and students may not have time or cannot spend time for reviews. As a result, both quantity and quality of vocabulary knowledge may be insufficient.
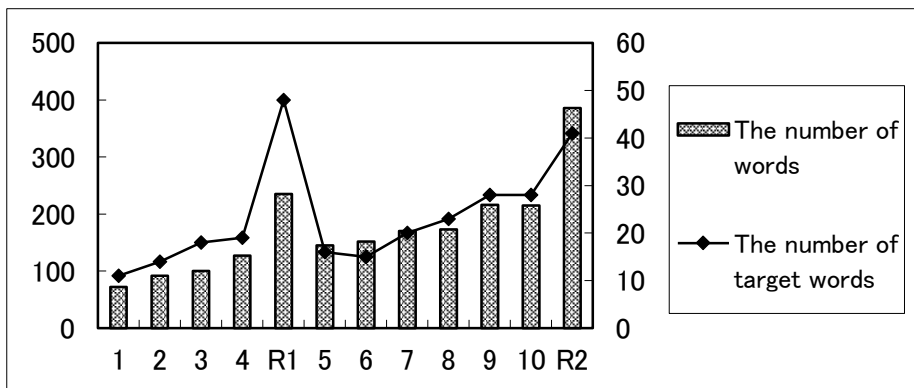


*Figure 1. Number of words and target words in each chapter.*

Secondly, Table 1 shows the number of words and phrases of the target words based on word families. Compared to single words and phrases, approx. 75% of the target words are individual words and about 25% are phrases. In addition, while approx. 47% of the target words are nouns, only about 10% of the words are phrasal verbs. This may decrease the students' attention to word associations and collocations.

| Noun | 132 | Pronoun | 1 |
|------|-----|---------|---|
| Verb | 39 | Phrasal verb | 30 |
| Adjective | 36 | Adjectival phrase | 8 |
| Adverb | 4 | Adverbial phrase | 16 |
| | | Conjunctive adverb | 2 |
| Preposition | 1 | Preposition | 4 |
| | | Other expressions | 8 |
| Single word | 212 | Phrase and expression | 69 |

*Table 1. Number of target words and phrases based on word families.*

Thirdly, Table 2 shows the number and frequency of all the words in the textbook and the target words based on word frequency level in BNC and *Academic Word List* (hereafter AWL) retrieved from *Lextutor*. As table 2 shows, approx. 71% of the target words are high frequency basic words. The remaining 8.45% are academic words and 20.66% are over the 2000-word level. In addition, although only 1.18% of the words in the whole textbook are academic words, 8.45% of the target words are academic words. This may be effective because low frequency words require more attention to be learnt than high frequency words (Diana and Reder, 2006). However, as mentioned before, the data related to the target words in table 2 does not include phrasal words, thus, the actual number and rate would be different if phrasal words were also examined.

| The target words | | | | All words in the textbook | | | |
|---|---|---|---|---|---|---|---|
| | Families | Tokens | % | | Families | Tokens | % |
| K1 (1-1000) | 86 | 91 | 42.72 | K1 (1-1000) | 507 | 6267 | 79.58 |
| (Function) | | (4) | (1.88) | (Function) | | (3404) | (43.23) |
| (Content) | | (83) | (38.97) | (Content) | | (2863) | (36.36) |
| K2 (1000-2000) | 56 | 60 | 28.17 | K2 (1000-2000) | 148 | 437 | 5.55 |
| K1 + K2 | | | 70.89 | K1 + K2 | | | 85.13 |
| AWL | 18 | 18 | 8.45 | AWL | 26 | 93 | 1.18 |
| Off-list | ? | 44 | 20.66 | Off-list | ? | 1078 | 13.69 |
| | 144+? | 213 | 100 | | 681+? | 7875 | 100 |

*Table 2. Number and rate of words and target vocabulary in the textbook*

The selection of target vocabulary terms has been analyzed so far. The next point is how these target vocabulary terms are presented in the textbook. Figure 2 shows the number of repetitions of the target words in the whole textbook excluding the table of contents and the index. As can be seen, 130 target words are repeated only once. As mentioned before, the number of effective recycling times is often claimed to be from 5 to 16 (Barker, 2007; Lopez-Jimenex, 2009). If students read the textbook only once and do not have any other exposure to the target words, a target word repeated five times would be enough, though this would be unrealistic, since only approx. 11% of the target words are repeated more than five times in the textbook. If learners need 16 repetitions and they read the textbook five times, only about 24% of the target words would be within the effective target range. However, some target words are presented both in the reading and in the grammar practice sections, but some words are presented only in the reading section. The former case would enhance explicit learning, but the latter would lead to less attention to the target words. Figure 3 shows the number of target words presented in the reading and in the grammar exercise sections. As can be observed, many of the words are presented in the reading section. Even though there are some words that are repeated in the grammar section, most of these are recycled only once. Furthermore, although some words are repeated, most of these repetitions are made in exactly the same sentence. Therefore, this repetition could enhance memorizing words but would not foster a deeper comprehension of the vocabulary.
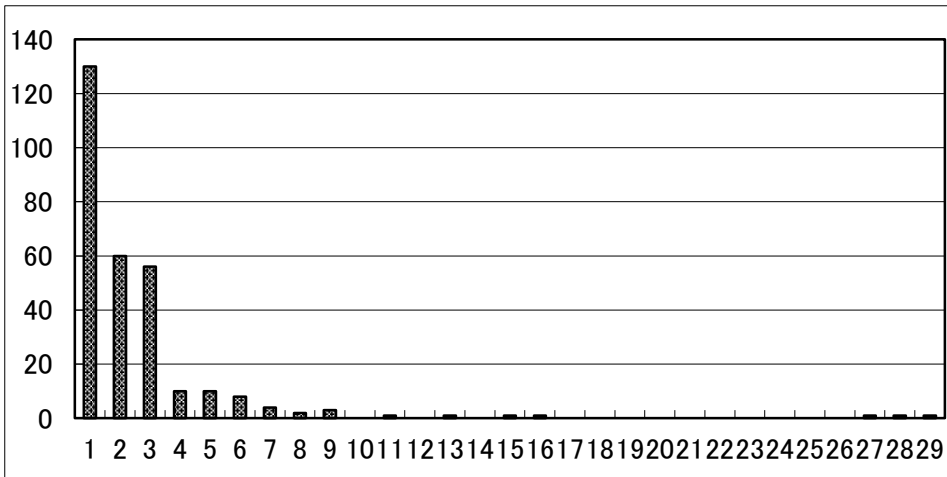
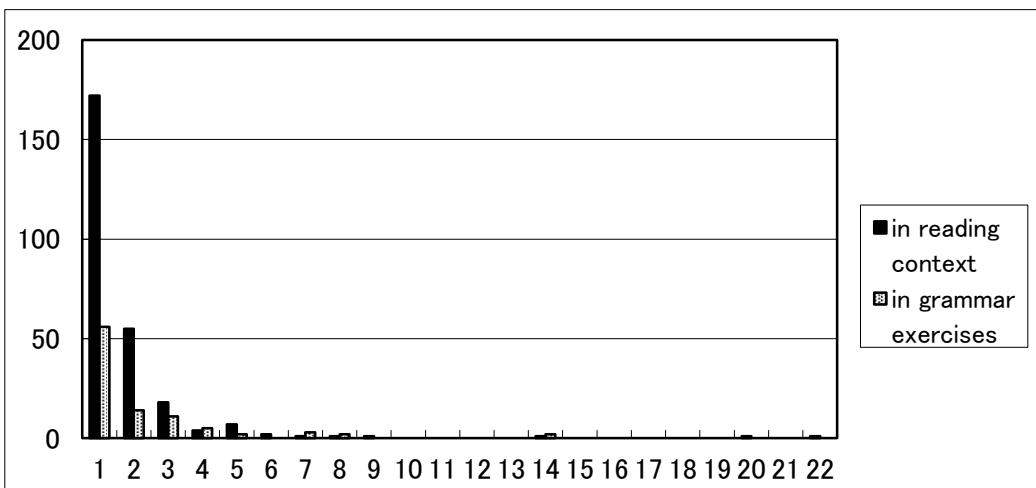*Figure 2. Number of repetitions of the target words in the whole textbook.*



*Figure 3. Number of target words presented in the reading and in the grammar exercise sections.*

Finally, as mentioned before, not only the number of repetitions but also the interval between these repetitions is important. According to the analysis, 81.5% of the target words are repeated only in one chapter. Thus, at the end of one chapter, students do not have an opportunity to review many of the target words. Therefore, intentional repetition and recycling seem to be required for this textbook.

**Conclusion**

Although vocabulary acquisition is recognized as very important, the lack of vocabulary seems to be one of major problem for learners. Japanese English textbooks are often regarded as reading and grammar textbooks in which vocabulary learning is less emphasized. In addition, the key issue in foreign language acquisition is a lack of sufficient exposure (Schmitt, 2000; Kennedy, 2003). Thus, English textbooks in the foreign language learning context need to be rethought carefully because they represent in most instances the only exposure for many students.

The textbook analysis in this essay found that this particular textbook highlights appropriate words in term of frequency. However, most of these are single words and word association and collocations are often ignored. In addition, the number of target words in each chapter

needs to be improved by considering repetitions of partly known words. Moreover, the target words are always presented in the same form or even in the same sentences that does not enhance recycling. Finally, the interval between repetitions is limited, thus, even if students memorize some of the words, these are forgotten at the end of the chapter.

In conclusion, teachers should choose textbooks in which a target vocabulary appears in different ways and is recycled throughout the textbook. Language teachers should teach not only the language itself but also how to learn it (Williams & Burden, 1997), and should also insist that students review the target vocabulary both in and outside the classroom (O'Dell, 1997). Repetition and recycling are very important for both quantitative and qualitative vocabulary acquisition. The limitation of this research resides in the fact that, since vocabulary learning is a longitudinal process, the analysis of a single textbook is not sufficient. An analysis of all the textbooks used in three academic years in high school would be more productive in the examination of whether a transition of vocabulary level and difficulty in the textbooks satisfies the learners' learning development and needs.

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