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# Didactic considerations of vocabulary breadth and depth in EFL/ESL contexts - a literature review

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## Abstract

This literature review analyzes and synthesizes current studies on the relationship between vocabulary knowledge and reading comprehension in the context of English as a foreign or second language (EFL/ESL). It concludes that vocabulary knowledge is important to reading comprehension. There are some aspects which learners, teachers, curriculum designers, textbook writers and researchers should pay attention to. Both the knowledge of vocabulary breadth and vocabulary depth are important to reading comprehension in EFL/ESL contexts; EFL/ESL language teachers need to focus on mid-frequency vocabulary while carrying out vocabulary instruction for promoting reading comprehension performance; teachers should apply different classroom activities and teaching methods to meet the needs of their students. These issues will be reviewed and discussed in the following article.

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# 1 Introduction

Vocabulary knowledge is an essential part of learning a language, both L1 and L2 learning. This has been proven by many researchers who strongly stress the importance of vocabulary knowledge in language acquisition (Laufer & Sim, 1985; Nagy, 1988; Nation, 1990; Taylor, 1990; Nation, 2001). More specifically, "vocabulary knowledge is fundamental to reading comprehension; one cannot understand text without knowing what most of the words mean (Nagy, 1988)". Additionally, Nation (2001) emphasizes that EFL/ESL learners have to know a certain amount of words in order to comprehend unsimplified texts. Therefore, he claims that direct vocabulary study is especially important for EFL/ESL learners because of the limitation of time they can spend on English learning.

The importance of vocabulary knowledge is also reflected in the English curriculum in some non-English speaking countries. For example, the requirement for vocabulary knowledge of learning English as a foreign language is clearly listed in the Chinese curriculum for upper secondary school: "students have to learn 1,200 words more except those words they learn from the English education from junior high school; gaining the knowledge of 750 phrases is also required"<sup>1</sup> (Chinese National Agency for Education, 1996). The Swedish curriculum for upper secondary school also mentions the necessity of vocabulary knowledge in language teaching. It does not state how many words students have to know after certain courses, but it requires that English teaching should offer students opportunities to understand "how words and phrases in oral and written communications create structure and context by clarifying introduction, causal connection, time aspects, and conclusions" (Swedish National Agency for Education, 2011 ). These two examples are an indication for English language acquisition that curriculum designers have agreed upon the fact that vocabulary knowledge is important for EFL learning and teaching.

Along with the studies on vocabulary knowledge, researchers have also investigated learning strategies and teaching approaches of vocabulary in EFL/ESL contexts. Some researchers claim that teaching learners learning strategies is effective for language acquisition (Kojic-Sabo & Lightbown, 1999; Hunt and Beglar, 2005); others, however, state that vocabulary instruction should focus on enlarging learners' vocabulary size at the beginning of the learning process. Despite the fact that researchers, curriculum designers, text-book writers and teachers agree on the effect of vocabulary knowledge on reading comprehension, how to inform students the importance of vocabulary knowledge, i.e. carry

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<sup>1</sup> the translation is mine.

out vocabulary instruction in language learning, is still a heavy task for EFL/ESL teachers. One of the reasons mentioned by Nation (2001) is because EFL teachers do not have enough instruction time for teaching vocabulary. Another reason is that it is difficult to know how well students know a word, because most vocabulary measures focus on its most frequent use.

Furthermore, vocabulary knowledge is proven to be an effective predictor of reading comprehension. Some researchers suggest that vocabulary instruction should focus on enlarging learners' vocabulary size; whereas others claim that the knowledge of vocabulary depth is a better predictor of reading comprehension. What on earth should vocabulary instruction focus on in order to promote reading performance in EFL/ESL contexts? This article will overview research in this field, focusing on the most recent studies. If vocabulary size is a better predictor to reading comprehension, then which frequency band should we focus on, high-frequency vocabulary, mid-frequency vocabulary or low-frequency vocabulary?

## **2 Approaches to teaching/learning vocabulary in EFL/ESL contexts**

Hunt and Beglar (2005) state that both explicit and implicit vocabulary instructions contribute to vocabulary learning in EFL contexts. Before carrying out vocabulary instruction, language educators have to be aware of what is involved in teaching a word (Nation, 2001). Nation (2001) states that there should be three factors involved in knowing a word, i.e. the form, the meaning and the use of a word. Similar to Nation and Beglar's (2007) statement, Harmer (2007) points out that learners should learn words in context to see how they are used. Grammar, then, is a necessary aspect to add in vocabulary teaching if the teacher wants to explain to the student how a word is used in different contexts (Nation, 2001). According to the result of a study on lexical processing strategy use<sup>2</sup>, instruction concentrating on lexical processing strategy use does not directly affect vocabulary learning, but it does also indirectly contribute to language learning (Fraser, 1999).

Furthermore, Harmer (2007) suggests teaching vocabulary through classroom-activities, "Class-robot" and "Invitations" as examples (pp.230-231). "Class-robot", according to Harmer (2007), can be carried out by two students, one of the students acts as a robot whereas the other give instructions to the robot. "Invitations" focuses on lexical phrases or chunks.

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<sup>2</sup> L2 learners usually apply some strategies such as, ignore, consult, infer when encountering unfamiliar words in reading process (Fraser, 1999).

Students work in pairs, one student makes invitations and the other accepts or refuses. Nation (2001) is quite positive about classroom-activities in vocabulary teaching. He also suggests several vocabulary teaching procedures, e.g. *recycling words*, *the second-hand cloze* and *the vocabulary interview* (p.107). However, he also reminds us of the fact that, "Rich instruction involves knowing what the learning burden of a word is so that the variety of activities used can focus on useful aspects of knowledge"(Nation, 2001, p.108).

In their study, Basoz and Cubukcu (2014) compare two types of vocabulary instruction, i.e. "Computer Assisted Vocabulary Instruction (CAVI)" and "Vocabulary Instruction through Communicative Language Teaching (CLT)". They also conclude that there is not one type of vocabulary instruction which is suitable for all learners, but according to them, CAVI saves time for teachers in preparing teaching materials, and therefore CAVI can be a useful and effective way to teach vocabulary, especially for teaching beginners. Among those approaches presented above, it seems that it is difficult to decide which approach to teaching vocabulary is the best. Hence, teachers should vary their ways of vocabulary instruction in order to accommodate different learning styles (Basoz & Cubukcu, 2014).

Nagy (1988) states that learners have to know the meanings of most words in the text in order to catch the meaning of the text. He also points out that effective approaches to vocabulary instruction contribute to reading comprehension. There are strategies we can use in order to understand a text, guessing in contexts as an example (Nation, 1988, p. 104). Hunt and Beglar (2005) suggest several strategies for vocabulary learning, e.g. orthographic decoding, using dictionaries and learning vocabulary through extensive reading. It is recommended to use learning strategies in vocabulary acquisition; however, not all strategies are universally useful to all learners. Hence, EFL learners have to consider applying more strategies, instead of focusing on a single strategy in vocabulary learning (Kojic-Sabo & Lightbown, 1999).

Laufer and Sim (1985) recognize the effect of learning strategies for vocabulary acquisition. But they also emphasize that EFL learners have to cross a language knowledge "threshold" to be able to use strategies to comprehend academic texts. They have developed a "threshold hypothesis" which claims that learners have to reach a certain level of vocabulary knowledge in order to apply strategies to assist reading. Furthermore, they conclude that vocabulary knowledge, among other factors such as subject matter knowledge, syntactic structure and strategies, is the most important element to help EFL learners cross the "threshold". Therefore, teaching vocabulary knowledge is more important than teaching EFL learners learning strategies, for example. Hu and Nation (2000) define the term "threshold" in

two ways. One of the definitions is similar to the "threshold hypothesis" developed by Laufer and Sim (1985); the other definition means that in order to comprehend certain texts, a learner has to know a certain amount of words to cross the threshold, otherwise it is not possible. Hirsh and Nation (1992) discuss the relationship between vocabulary size and the coverage of texts. They suggest that 4,000 word families are needed to reach 95% coverage of academic texts.

Vocabulary knowledge has been proven by studies as a necessary element in reading comprehension (Laufer & Sim, 1985; Nagy, 1988; Grabe & Stoller, 2001; Kaivanpanah & Zandi, 2009; Kang, Kang, Park, 2012). There are studies which show that applying more useful strategies in vocabulary acquisition leads to successful learning; There are also researchers who claim that learners have to learn a certain number of words to understand different types of texts, i.e. vocabulary size.

### **3 Measuring vocabulary knowledge**

Vocabulary knowledge is a necessary element to reading comprehension (Nagy, 1998; Nation & Coady, 1988; Laufer & Sim, 1985; Nation, 2001; Hirsh & Nation, 1992; etc.). Measuring vocabulary, then, has also become a necessary procedure to predict reading comprehension. Many researchers have shed light on this area (Hirsh & Nation, 1992; Schmitt & Schmitt, 2014; Nation, 2006). According to studies in this field, ESL learners have to know 3,000 word families to be able to comprehend graded readers (Schmitt & Schmitt, 2014; ), Laufer (1992) points out that 3,000 - word level is a threshold for beginners to read unsimplified texts. Nation (2006) also concludes, based on the result of his study, that 8000-9000 word families are needed to read and understand 98% coverage of a text without assistance.

Nation (2012) highlights the important role of measuring vocabulary knowledge in language learning. He states that knowing how much vocabulary knowledge learners have is significant for syllabus designers and language teachers. Vocabulary is an essential building block of language, and therefore it is beneficial to be able to measure learners' vocabulary knowledge and then make use of it in language classrooms (Schmitt, Schmitt & Clapham, 2001). Despite the importance of measuring vocabulary knowledge, most earlier L2 language studies have been mainly focused on investigating means of measuring learners' vocabulary size, because it is easier to develop measures of size than syntactic knowledge (Qian, 2002). Read (2001) points out that it is important to test lexical knowledge of vocabulary; however, it is also necessary to test how well learners know a word in different contexts. Because

knowing, for example, syntactic knowledge of a word and how to use this word in different contexts is more useful and practical for learner than merely knowing the primary meanings of this word (p. 320).

## **4 Vocabulary breadth and vocabulary depth**

Many researchers have studied this subject in detail because of the important role of vocabulary knowledge in reading comprehension. Vocabulary knowledge is no longer treated as a single component; instead, vocabulary knowledge is considered comprising at least two primary dimensions, one is breadth, and the other is depth (Qian 1998; Read 1988, 1989; Wesche & Paribakht 1996). In relation to the development, vocabulary knowledge, therefore, is not merely measured by the number of words, but also depth of vocabulary knowledge, i.e. *vocabulary depth*. Qian (1999) makes a definition of vocabulary breadth as vocabulary size, i.e. "the number of words for which a learner has at least some minimum knowledge of meaning"; vocabulary depth, meanwhile, refers to "a learner's level of knowledge of various aspects of a given word". Vocabulary size, in fact, can be seen as the number of words that a language learner knows; and vocabulary depth means how well a word is comprehended or used by language learners (Nation, 2006).

### **4.1 Vocabulary breadth and reading comprehension**

There is plenty of evidence to show that vocabulary breadth (or vocabulary size) plays a significant role in predicting reading comprehension ability (Freebody & Anderson, 1983; Beck & McKeown, 1991; Nation, 2006; Verhoeven & Leeuwe, 2008; Pasquarella, Gottardo, & Grant, 2012). Anderson and Freebody (1979) conclude that vocabulary size is a major factor to influencing reading comprehension. Qian's (1999) empirical study on the relationship between vocabulary knowledge and reading comprehension has produced results confirming the importance of vocabulary breadth on reading comprehension. Vocabulary breadth not only predicts reading comprehension, but also directly affects learners' reading process (Verhoeven & Leeuwe, 2008). Whenever more words are recognized by learners, the reading comprehension ability of the learners is enhanced (Chun & Plass, 1996).

Some researchers, more specifically, have carried out several empirical studies on the effect of vocabulary breadth on reading comprehension in EFL/ESL contexts. Baleghizadeh and Golbin (2010), for example, conducted a study to investigate the existence of the effect of vocabulary breadth on the reading comprehension of Iranian EFL learners. A total of 80 EFL



freshmen from a university in Iran participated in this study. Two tests were applied in this study, one is the reading comprehension part of the TOEFL test (January 2004 version) and the other is Nation's (1990) Vocabulary Levels Test. According to the results of this study, vocabulary breadth is a significant predictor of reading comprehension in EFL contexts. This study is useful for further studies because of its results based on the data collected during the study illustrate that vocabulary breadth is strongly correlated to reading comprehension; however, it is also problematic because the limited range of vocabulary in the test applied in the study. This will be discussed more in detail and compared with other studies in the following sections.

Laufer and Ravenhorst-Kalovski (2010) carried out a study, which focused on investigating the relationship among lexical text coverage, learners' vocabulary size, and reading comprehension. In their study, 735 out of 745 participants were EFL students who had had 8 years of English education and also attended an academic college in Israel. In other words, most of the participants were at a relatively high language proficiency level. Before participating in the study, all participants took a psychometric test, which was a reading comprehension test and consisted of three parts: logical thinking, verbal intelligence in L1, and reading comprehension. In this psychometric test, 109 of the participants scored 83 (out of 150), which corresponded with knowing approximately 1,000 word families; 199 participants received 90 points which corresponded to knowing around 2,000 word families; 204 participants scored 102 and 200 participants received 111 which corresponded with knowing approximately 3,000 and 4,000 word families, respectively; and 23 participants scored 122 out of 150 which meant that they knew approximately 5,000 word families. This group of data indicated that the more words the participants knew, the higher points they received. In other words, vocabulary size is an effective predictor of reading comprehension. The validity of this study is strongly supported by its large number of participants and statistics collected through those three different measures (There were two more measures than the psychometric test applied in this study, but only the psychometric test is presented here because of its relevance to this review article), hence, its result is useful to further EFL/ESL research and pedagogical activities. However, the study also has its weaknesses, because it did not take into consideration other factors which affect reading performance. Therefore, Laufer and Ravenhorst-Kalovski (2010) recognize that there may have been other factors affecting reading comprehension ability, such as reading skill.

According to Pasquarella, Gottardo and Grant (2012), vocabulary size is the only predictor of reading comprehension for learners who speak English as a first language;

however, for ESL learners, there is more than one factor that contributes to reading comprehension, e.g. decoding, vocabulary (knowledge in general), and the interaction of decoding and vocabulary. Laufer and Ravenhorst-Kalovski (2010) claim that effective reading skills may also contribute to promoting reading performance. Grammar is often ignored in improving reading performance; however, the syntactic structures in a text are important. Grammar knowledge allows readers to access the text more effectively and faster. Once readers are able to understand the syntactic structures in a text, their reading comprehension is promoted (Akbari, 2014).

## 4.2 Vocabulary depth and reading comprehension

Vocabulary depth, as another dimension of vocabulary knowledge, has also been proven a key element to improve reading performance, even though the relationship between vocabulary depth and reading comprehension has not been widely investigated. Kang, Kang and Park (2012) carried out a study on the effect of the two dimensions of vocabulary knowledge on reading comprehension. In this study, a total of 98 female students (63 first year and 35 second year) from a high school in Seoul participated. They were divided into three groups. The students in each group represented different language proficiency levels. Before the students participated in this study, they had received 7.9 years of formal English education. Three tests, a standardized Passage Comprehension subset of the Woodcock Reading mastery Test-Revised (WRMT-R: Woodcock, 1998) (test for reading comprehension), a standardized The Peabody Picture Vocabulary Test-Revised (PPVT-R: Dunn & Dunn, 1981) (test for English vocabulary size) and the Word Comprehension subset of the Woodcock Reading mastery Test-Revised (WRMT-R: Woodcock, 1998) (test for English vocabulary depth) were applied in this study. Through the English vocabulary depth test, test-takers' knowledge of antonyms, synonyms, and analogies in English was assessed. For example, *close* is the word which test-takers were expected to provide for a synonym of the word *near* in the synonyms subtest, *night* was asked for *day* in the antonyms subtest, and *fly* for *dog-walk* in the analogies subtest. According to the data collected during the study, depth of vocabulary knowledge is a more effective factor in predicting reading comprehension ability in comparison to breadth of vocabulary knowledge.

Furthermore, Kaivanpanah and Zandi (2009) investigated the effect of vocabulary depth on reading comprehension in EFL contexts. They concluded that vocabulary depth is a significant predictor of reading comprehension together with the knowledge of grammar. A

total of 57 EFL students (aged from 13 to 28) who had joined in language classes in order to compensate for the deficiency of English education at high school participated in the investigation. The depth of vocabulary knowledge test (DVKT) (Qian & Schedl, 2004) and an English language proficiency test (comprising a TOEFL test with 40 grammar items, 30 vocabulary items and 30 reading comprehension items) were administered to the participants. The TOEFL test applied in this study focused on testing vocabulary independently, rather than vocabulary depth knowledge, while the DVKT tested vocabulary in context. The results of this study showed that all participants received better result in the DVKT, and grammar is a sufficient catalyst to promoting reading comprehension (The researchers even stated that grammatical knowledge was a better predictor to reading comprehension than vocabulary depth knowledge). However, the Depth of Vocabulary Knowledge Test was considered not well developed for lower proficiency levels (Kaivanpanah & Zandi, 2009). Taking into account the weaknesses of the test, should we doubt the validity of the conclusion of the study? Is it true without grammar knowledge, depth of vocabulary knowledge cannot stand alone and function as an effective predictor of reading comprehension?

### 4.3 Vocabulary breadth vs. depth, which one is the better predictor of reading comprehension?

Studies on the relationship between vocabulary breadth and vocabulary depth are twofold, some conclude that the breadth of vocabulary knowledge contributes more to promoting reading comprehension (Baleghizadeh & Golbin, 2010; Laufer & Ravenhorst-Kalovski, 2010; Farvardin & Koosha, 2011), others insist that vocabulary depth is the stronger predictor of reading comprehension (Nation, 2006; Verhoeven & Leeuwe, 2008; Pasquarella, Gottardo, & Grant, 2012; Kang, Kang and Park, 2012; etc.). Can we confirm that vocabulary breadth predicts reading comprehension more significantly than vocabulary depth? Or is it dogmatic to state that one is better than the other? The answer is unclear. The study carried out by Baleghizadeh and Golbin (2010) claims the effective role of vocabulary breadth in reading comprehension; however, the study has its limitations, because the vocabulary test applied in the study focuses on the vocabulary size of the 3,000 word level; according to Nation (1999), The 3,000 word level is a threshold to be able to read unsimplified texts. In other words, the 3,000 word level is a basic level at which it is enough to know the primary meanings of these words to understand texts at this level. On the contrary, Kaivanpanah and Zandi (2009), who emphasize the importance of vocabulary depth in reading comprehension, also point out the

limitation of their study that the DVKT test is not well suited for learners at lower language proficiency levels. Which is a better predictor of reading performance, breadth or depth?

A reasonable answer to this question is provided by the result of a study carried out by Rashidi and Khosravi (2010), who state that both vocabulary breadth and depth of vocabulary knowledge are effective predictors of reading comprehension. Rashidi and Khosravi studied 71 students (all students have Persian as L1) learning English as a foreign language. All participants took a language proficiency test at the beginning of the study. Then, only 38 of them who were at the intermediate level of language proficiency were selected to remain for the study. Apart from the language proficiency test, the vocabulary size (VS) test, depth of vocabulary-knowledge (DVK) test and reading comprehension (RC) test were also arranged for participants. Person correlation was used for computing the relationship between DVK, VS, and RC scores in this study. *Person correlation* displayed a positive correlation of .87 between the scores on the DVK and RC, and a relatively close correlation of .75 between the scores on the VS and RC ( $p < .01$ ). The data showed that reading comprehension correlated strongly with both vocabulary size and depth of vocabulary knowledge. The researchers divided the 38 participants further into two groups in accordance with their proficiency level, high and low. They took two additional tests and the results showed that students at a higher language proficiency level and with more vocabulary depth knowledge performed better on reading comprehension tests. The study concluded that both vocabulary size and depth are important predictors of reading comprehension. However, it might be necessary to apply a more thorough examination of the study on the relationship between vocabulary size and reading comprehension among learners at a lower language proficiency level. Does vocabulary size contribute more to promote reading performance when learners are at a lower proficiency level? It might be worth doing more research on this subject in the future studies.

Qian (2000) gave the VS, RC, DVK and MK<sup>3</sup> to 74 EFL learners (including 41 Korean speakers and 33 Chinese speakers) who had the knowledge of 3,000 word families (word families are a group of words that have a common feature or pattern.) or more. T-tests were conducted in the study in order to compare the two groups' scores on the RC, VS, DVK and MK. T-tests did not show a significant distinction of the effect vocabulary size and depth on reading comprehension between Korean and Chinese EFL learners. According to the data showed in Pearson correlations (that is a measure to show how well two sets of data are related. High correlation is from 0.5 to 1.0), the scores on the RC, VS, DVK and MK were

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<sup>3</sup> VS refers to the vocabulary size test, RC to the reading comprehension test, DVK to the depth-of-vocabulary-knowledge test, and MK to the morphological knowledge test (Qian, 2000).

strongly correlated. In accordance with Rashidi and Khosravs' study (2010), Qian's study (2000) also implies that both breadth of vocabulary knowledge and vocabulary depth have an effect on reading comprehension. Furthermore, Qian (1999) emphasizes that in order to comprehend academic texts, depth of vocabulary knowledge is a more important component in the reading process. Both of these studies (Qian, 1999; Rashidi & Khosravs, 2010) provide good evidence to confirm the effect of vocabulary breadth and depth on reading comprehension. However, neither of them provides information on whether the EFL learners' L1 has an influence on the relationship between vocabulary size, depth and reading comprehension. In Rashidi and Khosravs' study (2010), all participants speak Persian as L1; although Chinese and Korean belong to different language families (Sino-Tibetan and Ural-Altaic), they still share certain similarities in syntactic structures (Swan & Smith, 2001).

## **5 Vocabulary and EFL/ESL teaching**

In the previous sections, some approaches to vocabulary learning and teaching in EFL/ESL contexts are reviewed. The mentioned approaches are useful for EFL learners in the language acquisition process; however, they are not specified to vocabulary size or depth. In the next part of this section, the aspects of vocabulary depth and vocabulary instruction will be on the stage. Nation (2001) divides vocabulary into four categories, i.e. high-frequency words, academic words, technical words and low-frequency words. Schmitt and Schmitt (2014) critically point out that academic words and technical words are not appropriate elements to fill the gap between high-frequency and low-frequency bands. Hence, they break vocabulary into the following three categories: high-frequency vocabulary, mid-frequency vocabulary and low-frequency vocabulary. In order to enlarge vocabulary size, which category of vocabulary should curriculum designers and EFL/ESL teachers focus on? This question will be discussed in the later part of this section.

### **5.1 What vocabulary depth knowledge should be taught in EFL/ESL contexts?**

There have been many studies that confirm and emphasize the importance of vocabulary depth knowledge (Kang, Kang and Park, 2012; Kaivanpanah and Zandi, 2009, etc.). Many of them suggest that planning good vocabulary instruction in vocabulary depth knowledge is an important and inevitable task for teachers in the EFL/ESL classroom. Why do they suggest

teaching vocabulary depth knowledge? Some researchers think that EFL/ESL learners' reading comprehension can be improved by providing them with instruction in synonymy and polysemy of words, not merely the primary meanings of these words (Mehrpour, Razmjoo, Kian, 2011). High-school EFL learners know a fair number of words, therefore, in order to improve their EFL learning competence, explicit guidance and instruction on vocabulary depth knowledge is needed (Kang, Kang, Park, 2012). Ouellette (2006) points out that the semantic knowledge of vocabulary is an important element for reading comprehension, but this element is often not paid much attention to by linguistic researchers. We should investigate more the effect of instruction on vocabulary depth knowledge on reading comprehension, even on the whole language acquisition process. The effect of vocabulary depth knowledge on promoting reading performance is also well proven by Qian (1999). He suggests curriculum designers and teachers taking consideration of the importance of vocabulary depth knowledge in their ESL syllabi and teaching activities.

According to those researchers, language vocabulary instruction should not merely focus on increasing vocabulary size, but also depth of vocabulary knowledge. Then, what aspects should educators pay attention to while teaching vocabulary depth knowledge in EFL/ESL contexts? There are suggestions given by some researchers. Depth of vocabulary knowledge is known as the quality of words, in other words, how well learners know the words. Qian (1999) points out that it is not enough to merely teach primary meanings of words. He suggests that synonymy, polysemy of words and syntactic properties of words are also important in ESL language classrooms. Sharing a similar standpoint as Qian (1999), Ehsanzadeh (2012) calls for tasks that cover different aspects of words for teaching and learning vocabulary depth knowledge in EFL/ESL contexts. Haastrup and Henriksen (2000) state that in order to know a word, there are three dimensions of vocabulary knowledge we have to take into consideration. The depth of knowledge dimension focuses mainly on the semantics, syntax and even morphology of the word. It might be difficult for EFL/ESL teachers to teach all of the words that learners need to know; however, teachers can choose a certain number of academic words and focus on how these words work in different contexts (Kelly, Lesaux, Kieffer and Faller, 2010).

## 5.2 How should depth of vocabulary knowledge be taught in EFL/ESL contexts?

Approaches or principles to teaching the depth knowledge of vocabulary have been paid attentions to by some researchers. Nation (2001) suggests some teaching activities to teach the three aspects of vocabulary depth knowledge (i.e. form, meaning and use): (1) repeated meetings as in repeated reading; (2) depth of processing through the use of images, elaboration, deliberate inferencing; (3) repetition; and (4) explicit guidance and feedback (p.35). Nation (2001) states that "Knowing a range of associations for a word helps understanding its full meaning and helps recall the word form or its meaning in appropriate contexts" (p.104). He emphasizes the importance of gaining depth of vocabulary knowledge. Furthermore, he suggests some activities on associations of words, e.g. explaining connections, making word maps and classifying words (pp.104-105).

Grabe (2008) reviews some previous studies on vocabulary instruction, and then makes a summary of suggestions on teaching vocabulary. Among the principles he lists, "teaching a limited set of key words for depth, precision, and multiple encounters; focus on word relationships (parts-of-speech variations, word families, synonyms, antonyms, graded relations)" are possible to apply in the instruction of vocabulary depth knowledge. Hedge (2000) also sheds light on vocabulary instruction. Some teaching principles suggested by her can be useful in teaching depth of vocabulary knowledge (p.126). She means that developing a variety of techniques for the teaching of meaning is effective. Using techniques such as *verbal explanation* is useful for students to learn words in different contexts and with semantic varieties.

### 5.3 Which words should be taught, high-, mid- or low-frequency words, in order to enlarge vocabulary size in EFL/ESL contexts?

According to Schmitt and Schmitt (2014), high-frequency vocabulary consists of the first 3,000 word families, low-frequency vocabulary begins at about the 9,000 frequency level, and mid-frequency vocabulary covers from the 3,000 and 9,000 levels. Nation (2006) sheds light on the relationship between vocabulary size and different texts. What Nation (2006) found might imply that vocabulary instruction to EFL learners with lower language proficiency should focus on teaching high-frequency words; and low-frequency vocabulary is more important to EFL learners with higher language proficiency. There is a dilemma for language teachers in choosing vocabulary that is important to their students, because teachers have difficulties in identifying useful vocabulary in the flood of 1 to 2 million English words. Only

the 2,000 or 3,000 words are focused by many textbook writers and publishers. However, research suggests that up to 7,000 words are needed for fluent speech, and being able to understand authentic written texts requires 8,000 to 9,000 word forms (IATEFL conference, 2011).

Schmitt and Schmitt (2014) share part of Nation's (2006) point of view and suggest that teaching the first 3,000 words is a basic requirement to English language programs. They emphasize the importance of mid-frequency vocabulary in language learning, "in fact, the best improvement in the reading scores came from vocabulary increases from the 5,000 - 6,000 and 5,000 - 7,000 levels." Despite the significant importance of mid-frequency vocabulary to reading comprehension, however, mid-frequency is not on focus in EFL classrooms. Some language teachers do not even teach vocabulary in the classroom. They assume that their students receive vocabulary knowledge through different classroom-activities or gain vocabulary knowledge naturally outside the classroom (Schmitt & Schmitt, 2014).

There are studies that show that even language teachers seldom use mid-frequency vocabulary in the classroom. Tang and Nesi (2003) describe that in a high school in Guangzhou, language teachers usually carry out vocabulary teaching based on the text-books, and vocabulary contained in textbooks is often high-frequency words. The language teachers' task is to make sure that their students learn what is written in the textbooks, therefore, there is little mid-frequency vocabulary in teachers' spoken instruction in the classroom. A similar study carried out by Horst (2010) ends in a result that in a high-intermediate/ advanced adult ESL class, only 2% of the vocabulary used by the teacher goes beyond the first 3,000 vocabulary level.

Vocabulary size plays a role as the threshold for language learners, i.e. learners have to understand a certain number of words in order to comprehend certain texts (Sim & Laufer, 1985; Nation, 2001). According to vocabulary frequency and range, Nation (2001) categorizes vocabulary into four aspects, i.e. high-frequency vocabulary, academic vocabulary, technical vocabulary and low-frequency vocabulary. He states that high-frequency vocabulary contains the first 2,000 word families. This group of words functions as a threshold, learners have to cross the threshold to continue academic study. Schmitt and Schmitt (2014) adapt Nation's (2001) categorization of vocabulary size. They point out that academic vocabulary and technical vocabulary cannot fully bridge the gap between high-frequency vocabulary and low-frequency vocabulary, instead they give the words from 3,000 to 9,000 levels another name, i.e. mid-frequency vocabulary.



It seems that these two categorizations are quite different to each other. Nation (2001) insists the importance of high-frequency vocabulary in language learning; Schmitt and Schmitt (2014) emphasize the unique role of mid-frequency vocabulary in successful language learning. However, even though he focuses on the role of high-frequency teaching and learning, Nation (2001) still implies that word levels after high-frequency vocabulary, i.e. After the first 2,000 word families, are important for learners in academic study. In fact, Nation (1992) makes a suggestion that in order to reach a high-level of understanding of an academic text, 4,000 word families are necessary.

Despite the fact that there have been researchers who shed light on the important role of mid-frequency vocabulary in language learning, there still exists a gap in vocabulary research and EFL/ESL language pedagogy. On the one hand, studies in pedagogical vocabulary have mainly concentrated on high-frequency vocabulary, e.g. textbooks and graded readers focusing on high-frequency vocabulary. On the other hand, some teachers think that learners can learn new words automatically by listening or watching while taking part in different language activities or various activities outside the language classroom. However, the possibility for EFL/ESL learners to pick up mid-frequency words by this way is not great. Schmitt and Schmitt (2014) points out that mid-frequency words are seldom applied in EFL/ESL teachers' talk in the language classroom. Hence, the situation of mid-frequency vocabulary instruction in EFL/ESL contexts is far too optimistic. Due to the unique importance of mid-frequency vocabulary and the lack of pedagogical experiences in this field, it is necessary to call for more linguistic research support, i.e. research on teaching materials that cover mid-frequency vocabulary, EFL/ESL teachers' awareness of mid-frequency vocabulary and principled approaches to teaching mid-frequency vocabulary.

## **6 Conclusion**

This review focused on factors which contribute to promoting reading performance in EFL/ESL contexts. It has been more than 20 years since Nagy (1988) pointed out the importance of vocabulary knowledge to reading comprehension. More recent studies also show that vocabulary knowledge is a necessary element in reading comprehension. With so much evidence provided by those studies, vocabulary knowledge should be highlighted in EFL/ESL teaching. However, the situation is not very optimistic for EFL/ESL teachers because of the two dimensions of vocabulary knowledge, i.e. vocabulary breadth and vocabulary depth. Because these studies make difficult for teachers to know what to focus on.

There has been a debate on the effect of vocabulary breadth and vocabulary depth on improving learners' reading comprehension ability in the research area of EFL/ESL. Some reviewed studies prefer vocabulary breadth, and others tend to prefer depth of vocabulary knowledge. However, most studies reviewed in this article have their weaknesses.

The study carried out by Baleghizadeh and Golbin (2010) ends in the result that vocabulary breadth is a strong predictor to reading comprehension ability. However, this study has its limitations. Only the first 3,000 word families were included in the reading test. According to Nation (2010), the 3,000 word level is the limit between graded readers and academic texts. In other words, learner who do not have the knowledge of 3,000 words will have difficulty reading more complex texts. Additionally, being able to read academic text requires learners to gain more in depth knowledge of vocabulary (Kelly, Lesaux, Kieffer, & Faller, 2010). Hence, the study focuses partially on investigating the importance of vocabulary breadth and ignores the role of vocabulary depth in reading comprehension. Kaivanpanah and Zandi (2009), with stating the importance of vocabulary depth knowledge in reading comprehension, also point out the effect of grammar knowledge on promoting reading performance. Can the results of this study also be interpreted to mean that vocabulary depth knowledge is not a very strong predictor to reading comprehension without grammar knowledge?

Based on the categorization of vocabulary made by Nation (2010), Schmitt and Schmitt (2014) re-categorize vocabulary into three main parts, i.e. high-frequency vocabulary, mid-frequency vocabulary (instead of Nation's academic and technical vocabulary) and low-frequency vocabulary. Nation (2010) gravitates toward high-frequency vocabulary instruction. There is also some research that provides EFL/ESL teachers with useful approaches which can both enlarge students' vocabulary size and develop depth knowledge of vocabulary. However, Schmitt and Schmitt (2014) point out that even though high-frequency vocabulary is important to ELA (English language acquisition), mid-frequency vocabulary is in fact the most important predictor to reading comprehension. Because high-frequency vocabulary merely covers the range of the first 3,000 word families, and mid-frequency vocabulary include word levels from 3,000 to 9,000. As stated previously, the 3,000 word level is merely a threshold to reading more complex texts. In other words, gaining the knowledge of mid-frequency vocabulary is a requirement to comprehending unsimplified texts, i.e. to approach a higher language level.

However, according to Schmitt and Schmitt (2014), despite the importance of mid-frequency vocabulary, there has not been much research on this subject. The reasons vary.

Because of the important implication of mid-frequency vocabulary for teaching English as a foreign language, it is worth doing more research on this subject in future studies.

In view of the relationship between vocabulary knowledge and reading comprehension, future studies should focus on investigating: (a) the measures of vocabulary depth knowledge in EFL/ESL contexts, because previous vocabulary measures mainly focus on testing vocabulary size and it is necessary for teachers to know how much vocabulary knowledge their students know; (b) the materials that are suitable for teaching mid-frequency vocabulary, (c) models of mid-frequency vocabulary instruction and its effect on improving reading comprehension in teaching English as a foreign language in classrooms at upper-secondary schools, because according to Schmitt and Schmitt (2014), mid-frequency vocabulary is a key element to successful reading comprehension and there has not been much research on this subject. Ultimately, according to Oxford (2001), assessing learning styles in L2 classrooms is essential for effective teaching, because L2 teachers can apply teaching styles and models of instruction that are suitable to every student. Thus, future studies also need to take consideration into students' learning styles. With the development of teaching materials of mid-frequency vocabulary and effective models of mid-frequency vocabulary instruction, the reading comprehension ability of EFL learners at upper-secondary schools can be improved.

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