Vocabulary Knowledge of Adult ESL Learners

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Abstract

This study assessed Malaysian tertiary students' levels of passive and controlled active vocabulary knowledge. Two tests from the Vocabulary Levels Test were used to collect the data namely the Passive Vocabulary Test and Controlled Active Vocabulary Test. When using the test, the researchers were not particularly interested in the students' total score on the tests, but were interested more in whether the students knew enough of the high-frequency words. 360 first- and second-year university students from five diploma programs were involved in the study. The findings revealed that majority of them did not have enough vocabulary knowledge and vocabulary size to use English as their second language though formal exposure to the language had been given to them for more than 12 years. This paper, besides discussing the students' levels of passive and controlled active vocabulary knowledge and their vocabulary size, highlights the vocabulary levels and vocabulary size they should attain. The probable impact vocabulary knowledge has on the acquisition of other English language skills is another area discussed. Some recommendations for teaching approaches are also put forward.

Keywords: Passive Vocabulary Knowledge, Controlled Active Vocabulary Knowledge, Vocabulary Size

1. Introduction

According to Diamond and Gutlohn (2006), vocabulary is the knowledge of words and word meanings. "Vocabulary knowledge is knowledge; the knowledge of a word not only implies a definition, but also implies how that word fits into the world", describes Stahl (2005). Vocabulary knowledge is not something that can be fully mastered; it is something that expands and deepens over the course of a lifetime. In learning English language, lexis or vocabulary is recognized as a vital factor for ESL or EFL literary development (Coxhead, 2006; Horst et al., 2005; Lee & Munice, 2006). That is, L2 learners' lexical knowledge may determine the quality of their listening, speaking, reading, and writing performances.

Nevertheless, the nature of lexical knowledge, that is the question of what it actually means for a language learner to "know" a word, lies at the very heart of L2 vocabulary acquisition. As Laufer and Paribakht (1998, p. 366) observe, "no clear and unequivocal consensus exists as to the nature of lexical knowledge", apart from the general agreement that it should be construed as some sort of continuum of several levels or dimensions rather than an all-or-nothing phenomenon.

Vocabulary researchers normally differentiate between passive (receptive) and active (productive) vocabulary knowledge (Nation, 2001). Having passive vocabulary knowledge enables one to perceive the form of the word and retrieve its meaning(s). Active vocabulary knowledge, on the other hand, enables one to retrieve the appropriate spoken or written word form of the meaning one wants to express (Laufer & Goldstein, 2004).

In other words, vocabulary knowledge can be viewed from quantitative and qualitative angles. Many people believe that knowing a word means knowing its meaning- breadth of knowledge. Nation and Waring (1997, p. 6) described quantitative vocabulary knowledge as being concerned with the question "How much vocabulary does a second language learner need?" However, Cook (2001) states that "a word is more than its meaning" (p. 61). For Cook, knowing a word involves four aspects: (1) form of the word such as pronunciation and spelling, (2) grammatical properties such as grammatical categories of the word, (3) lexical properties such as word combinations and appropriateness, and (4) meaning- the general and specific meaning. Clearly, "knowing a word requires more than just familiarity with its meaning and form" (Schmitt & McCarthy, 1997, p. 4).

Thus, the notions of Receptive (Passive) and Productive (Active) Vocabulary (RPV) are normally discussed in four different ways. First, RPV processes refer to subconscious mental processes involved in the recognition, recall, retrieval, comprehension, and production of lexical items. Second, the RPV abilities involve the control of what is received and what is produced. Third, RPV skills denote the receptive skills of listening and reading from the productive skills of speaking and writing. Finally, the RPV product is represented by the RPV sizes and what we know about one's own RPV knowledge as viewed through language tasks (Waring, 1999). As a rule of thumb, the receptive vocabulary is at least twice the size of the productive vocabulary.

The study, therefore, addresses the following research objective that is to determine the students' levels of passive and controlled active vocabulary knowledge. This paper, on the other hand, discusses several issues based on the findings namely the levels of vocabulary knowledge that Malaysian university students should attain, their chances of reaching native-like vocabulary size, and the influence vocabulary knowledge has on the acquisition of reading and writing skills besides suggesting some pedagogical approaches.

2. Methodology

2.1 Sample

There are 5413 diploma students at Universiti Teknologi MARA Perlis and according to Wunsch (1986), for a group of 5413 students, at least a sample of 346 are needed to make an estimation with a sampling error of $\pm$ 5 percent at 95 percent confidence level. Nevertheless, 360 students are chosen. Out of the 360 students, 126 students were from Semester 1, 102 from Semester 2, and Semester 3 comprised of 132 students.

2.2 Vocabulary Levels Test

The Vocabulary Levels Test which consists of three different vocabulary tests is used to measure the three dimensions of the respondents' English vocabulary knowledge. The three different vocabulary tests are:

1) The Passive Vocabulary Test for passive vocabulary size (Nation, 1990);

2) The Controlled Active Vocabulary Test for controlled active vocabulary size (Laufer & Nation, 1995);

3) The Free Active Vocabulary Test for lexical richness in free written expression (Laufer & Nation, 1995).

However, for the purpose of this study only the first two tests are used. The Passive Vocabulary Test measures passive vocabulary knowledge and is originally based on words from five word-frequency levels namely the first 2,000 words, 3,000 words, 5,000 words, the University word level (beyond 5,000 words) and 10,000 words. However, in this study only the first four levels are used. Each level is intended to relate to specific vocabulary learning objectives. According to Nation (1990), the 2,000- and 3,000-word levels contain the high-frequency words that all learners need to know in order

to function effectively in English. The 5,000-word level represents the upper limit of general high-frequency vocabulary that is worth spending time on in class. Finally, words at the University level should help students in reading their textbooks and other academic reading material.

The Passive Vocabulary Test involves word-definition matching although, in a reversal of the standard practice, the respondents are required to match the words to the definitions. Each frequency level of the test comprises six sections and each section includes 6 words and 3 definitions. In other words, there are 36 words and 18 definitions at each level. Although there are only 18 words at each level, Nation (1990) argues that 36 words are tested because the respondents need to check every word against the definitions in order to make the correct matches. Words in each level of the test are representative of all the words at that level. In fact, the test is designed to be sensitive to any vocabulary knowledge held by the students. Therefore, each word in the test is distinctly different within each set of words being tested.

The words for each level are also selected on a random basis but with proper nouns and compound nouns are excluded so that the results of the test would give a reasonable indication of what proportion of the total number of words at each frequency level the students have some knowledge of. In addition, all the words in each group belong to the same word class in order to avoid giving any grammatical clue as to the correct definition. On the other hand, apart from the correct matches, care is taken not to group together words definitions that are related in meaning. The test is intended as a broad measure of word knowledge, without the students to distinguish between semantically related words.

The Passive Vocabulary Test has 72 items (18 in each level). It tests the target words out of context because context might provide clues to their meanings. The researchers are only interested in the number of words the students could understand without any clues, rather than their guessing ability. The answers are scored as correct or incorrect. Each correct answer was given one point. Since the test had 72 items, the maximum score was therefore 72. "A weak score at any level is defined as knowing fewer than 15 out of 18 items, or less than 83%" according to Nation's experience using the test (Nation, 1990, pg. 140).

The Controlled Active Vocabulary Test is modeled on the Passive Vocabulary Test, in which it uses the same frequency bands and the same items. It elicits target items from four frequency levels in short sentences with the items' first few letters provided in order to eliminate other possibilities. The students are to provide the missing word in each sentence. The test has 72 items- 18 in each level. The scoring is in terms of correct (1 point) or incorrect/ blank (0 point). An item is considered correct when it is semantically correct- the appropriate word is used to express the intended meaning. If used in the wrong grammatical form, it is not marked as incorrect. A word with a spelling error which does not distort the word is not marked as incorrect either. Most of the incorrect answers are non-words or existing words which are incorrect in the provided context. As in the test of passive vocabulary size, the maximum score is 72. "A weak score at any level is defined as knowing fewer than 15 out of 18 items, or less than 83%", according to Nation's experience using the test (Nation, 1990, pg. 140).

3. Results

3.1 Respondents' levels of passive vocabulary knowledge

The Passive Vocabulary Test which has four word-frequency levels namely the first 2000 words, 3000 words, University Word List (UWL), and 5000 words is used to evaluate the students' passive vocabulary knowledge. A weak score at any level is defined as knowing fewer than 15 out of 18 items, or less than 83% according to Nation's (1990, p. 140) experience using the test.

At the 2000 word level, 120 Semester One students, 93 Semester Two students and 111 Semester Three students are in the weak group. For the 3000 word level, 121 Semester One students, 92 Semester Two and 102 Semester Three students are categorized as weak. Then, 125 Semester One, 99 Semester Two and 121 Semester Three students are in the weak group for the UWL. Finally, none of the Semester One students manages to pass the test at the 5000 Word Level; only one Semester Two and six Semester Three students pass. Those results suggest that majority of the students have weak English passive vocabulary knowledge.

The main scores obtained by Semester One, Semester Two, and Semester Three students in the Passive Vocabulary Test are 33.01, 35.72, and 42.57 respectively. In terms of vocabulary size, the mean scores represent 1528, 1653, and 1968 word families. Comparing the passive vocabulary size of Semester 1, Semester 2, and Semester 3 students, it could be seen that it increases from 1528 to 1653 to 1968 word families in three semesters. In other words, the increase is 440 word families per year.

3.2 Respondents' levels of controlled active vocabulary knowledge

The Controlled Active Vocabulary Test is modeled on the Passive Vocabulary Test. It elicits target items from four frequency word levels in short sentences with the items' first few letters provided in order to eliminate other possibilities. The students provide the missing word in each sentence. A weak score at any level is also defined as knowing fewer than 15 out of 18 items, or less than 83% according to Nation's (1990, pg. 140) experience using the test.

At the 2000 word level, 97 Semester One students are categorized as weak as compared to 62 for Semester Two and 70 Semester Three. As for the 3000 word level, only two Semester One students are not in the weak category. However, Semester Two and Three students have seven and 17 students respectively. Moving to the University Word List (UWL), 120 Semester One, 87 Semester Two, and 115 Semester Three students fail to get the minimum scores of 15 correct answers out of 18 which made them eligible to be put in the good group. Finally, results in the 5000 word level indicate that more students fail the test- 118 Semester One students fail followed by 87 Semester Two and 115 Semester Three. Those results suggest that majority of the respondents are still weak in terms of their English controlled active vocabulary knowledge.

The mean scores obtained by Semester One, Semester Two, and Semester Three students in the Controlled Active Vocabulary Test are 36.53, 45.71, and 46.53 respectively. In terms of vocabulary size the mean scores represent 1691, 2116, and 2154 word families. Comparing the controlled active vocabulary size of Semester 1, Semester 2, and Semester 3 students, it could be seen that the vocabulary size increased from 1695 to 2116 to 2154 word families. In other words, within two semesters the increase was 459 word families.

4. Discussion

Since the findings clearly show that majority of Malaysian university students fail to achieve the passing level of the Passive and Controlled Active Vocabulary Test, a conclusion could be made that they have poor passive and active vocabulary knowledge. The situation is quite alarming because the students before entering university have at least formally been exposed to English language in schools for at least 13 years. There are two questions needed to be answered to evaluate the seriousness of the problem. The questions are (1) What are the levels of vocabulary knowledge that Malaysian university students should attain? (2) Can Malaysian university students acquire a vocabulary size comparable to that of native speakers?

Pondering on several studies on word levels would answer the first question. Based on a research conducted by Francis and Kucera (1982), with vocabulary knowledge of the first 2000 word level, a learner will know almost 80 per cent of the words in a text. However, Liu and Nation (1985) disagree. They claim that such percentage is not sufficient to successfully guess the meanings of unknown words and they are supported by Laufer (1988); 95 per cent coverage or higher is proposed.

To verify the above argument, a few studies on vocabulary size should be quoted. Laufer (1989) in her study focused on what percentage of running words need to be understood to ensure 'reasonable' reading comprehension of a text. She finds that those who score 95% and above on the vocabulary measure have a significantly higher number of successful readers than those scoring below 95%. Laufer (1992) carry out the study further by looking at the relationship between reading composition score and vocabulary size. Finding shows that the minimal vocabulary level where there are more readers than non-readers is 3000 word families. In addition, Hirsh and Nation (1992) study novels written for teenage readers. Findings conclude that a vocabulary size of 2000 to 3000 words provides a coverage up to 97% of the words in those novels. Thus, a vocabulary size of 2000 to 3000 words is necessary to comprehend those novels. Furthermore, Hu and Nation (1995) compare the effect of four text coverages on a reading comprehension of a fiction text. At the 95% coverage level, some readers gain adequate comprehension but most do not. At the 90% coverage level a smaller number gains adequate comprehension, and at the 80% level, none does. Hu and Nation thus conclude that teenage readers basically need to know around 98% of the running words in the text to enjoy a pleasure reading.

All the findings in the above studies zoom in to the conclusion that vocabulary acquisition beyond the 2000 word level is needed to provide a basis for comprehension in any English text and there is no compromise on that.

As for the second question, comparing vocabulary size of native and non-native speakers would be a good move. A study by Zechmeister et al. (1995) indicates that the receptive vocabulary size of a college-educated native English speaker is about 17,000 word families. A word family consists of a headword, its inflected forms, and its closely related derived forms (Nation, 2001). Nation and Waring (1997) estimate that the receptive vocabulary size of a university-educated native English speaker is around 20,000 base words while Goulden, Nation, and Read's (1990) study indicates that the receptive vocabulary size range of university-educated native English speakers is between 13,200 to 20,700 base words with an average of 17,200 base words.

Based on the above studies, approximately 17,000 word families should then be the vocabulary size of university-educated non-native English speakers. The target of 17,000 word families for university-educated non-native English speakers is achievable according to several studies. Since Cervatiuc's (2007) study, for instance, indicates that the average receptive vocabulary size of highly proficient university-educated non-native English speakers ranges between 13,500 and 20,000 base words, the finding is comparable to university-educated native English speakers' vocabulary size which is around 17,000 word families.

Goulden, Nation, and Read (1990) are also optimistic with the 17,000 word- family target. The quotation below indicates their stance:

Clearly, estimates of vocabulary size of adult native speakers which credit them with vocabularies of 216,000 words (Diller, 1978) or 80,000 words (Miller & Gilden, 1987) are greatly inflated. It is more likely that the average educated native speaker has a vocabulary of around 17,000 base words and has acquired them at the average rate of about two or three words per day. If native speakers do in fact acquire vocabulary at this relatively slow rate, it would seem that for second language learners, direct teaching and learning of vocabulary is a feasible proposition.

(Goulden, Nation, & Read, 1990, p. 356)

A longitudinal study by Milton and Meara (1995) also views the 17,000 word-family target for university-educated non-native English speakers positively. The study involves 53 European exchange students who are majoring in management science and some in English language and literature teaching. Finding indicates that adult learners of English as a second language could learn 2650 base words per year. A vocabulary acquisition rate of 2650 base words per year would allow adult learners of English as a second language to achieve a native-like vocabulary size of 17,200 base words in 6.49 years.

Though the studies produce positive findings towards the 17,000 word-family target for adult non-native speakers, several factors which might lead to such a scenario should be considered. Cervatiuc's (2007) study was conducted in Canada, an English speaking country, and the 20 participants were immigrant who had resided in Canada for an average of 11.55 years. Goulden, Nation, and Read's (1990) study involved only native speakers and was also conducted in an English speaking country. In Milton and Meara's (1995) study, the rate of 2650 base words per year may not be applicable to average ESL learners since the participants in the study were top and exceptional learners.

Nevertheless, the 360 participants in this study may not be able to accomplish the 17,000 word-family target due to several reasons. First of all, the 360 participants are residing in Malaysia, a non-English speaking country, so there is a very limited English environment for them. English is normally learned just as a subject in their university. Secondly, the 360 participants are not top or exceptional ESL learners. Their command of English is average or below average so their rate of vocabulary learning is expected to be slower. Finally, the present vocabulary size reveals the whole story. Presently, their receptive vocabulary grows at 440 word families per year so they might take 39.09 years to achieve the 17,200 word-family target. On the other hand, they might take 37.47 years for controlled active vocabulary knowledge based on present growth of 459 word families per year.

5. Conclusion

Having limited vocabulary may expose Malaysian university students to several obstacles. The first obstacle is in terms of overall academic success (Baumann, Kame'enui & Ash, 2003). Academic success is closely related to the ability to read and this relationship seems logical because to get meaning from what they read, these students need to have a big number of words in their memory. Students who do not have large vocabularies often struggle to achieve comprehension. This bad reading experience will create a feeling of frustration which might continue throughout their studies (Snow et al., 2000; Hart & Risley, 2003). As a result, normally these students will avoid reading. Because they do not read very much, the opportunity to see and learn many new words becomes slimmer which automatically produces the well-known "Matthew Effects", Stanovich's (1986) application of Matthew, 25: 29- "the rich get richer and the poor get poorer." In terms of vocabulary development, good readers read more, become better readers, and learn more words; poor readers read less, become poorer readers, and learn few words.

Besides affecting reading ability which is obviously known to everyone, limited vocabulary knowledge may also influence their writing quality which is important to their future. The following studies show the relationship between vocabulary size and writing ability. Linnarud (1986) analyzes compositions written in Swedish by native and non-native speakers of Swedish. She correlates the compositions in terms of total number of words for each composition, a number of words per sentence, lexical individuality, and lexical sophistication. She concludes that vocabulary size is the single largest factor in writing quality. Next, Astika (1993) uses a scoring technique similar to the ESL Composition Profile which analyzes content, organization, vocabulary, language use, and mechanics, to score 210 writing samples. A multiple regression analysis reveals that 84% of the variance could be accounted for by vocabulary. Similarly, Laufer and Nation (1995) use *VocabProfile* to produce a Lexical Frequency Profile (LFP) of 65 student compositions. The aim of the study is to determine to what extend such a profile would correlate with the students' scores on the Passive Vocabulary Levels Test (PVLT). They find that students who have larger vocabularies use fewer high frequency words and more low frequency words than students with smaller vocabularies. Ahmad (2009) did obtain the same results in his study which involved 360 Malaysian university students. In addition, Beglar and Hunt (1999) compared the TOEFL Structure and Written Expression subsection with two of the four versions of the Vocabulary Levels Test (VLT), version A and B, and finds that the correlations are .61 and .65 respectively. The results are just slightly lower than the correlations found with reading comprehension.

6. Recommendations

Since the findings show that adult ESL learners have poor vocabulary knowledge, an effective vocabulary program should be introduced. To be effective, a program of vocabulary instruction should provide them with opportunities for word learning by:

i) encouraging wide reading

Since ESL learners usually learn new words by encountering them in text, the volume of their reading is strongly related to their vocabulary knowledge (Cunningham & Stanovich, 1991). Increasing the opportunities for such encounters means improving their vocabulary, which, in turn, enhances their ability to read more and more complex text. Thus, the single most important thing which could be done to improve their vocabulary is to get them to read more. Although the probability of learning any particular word from context is not big, the cumulative effects of learning from reading can be large (Herman et. al, 1987).

What kinds of reading are necessary to encourage vocabulary growth? Some argue that almost any reading is beneficial to ESL learners but others say that if they consistently select texts below their current reading levels, even wide reading will not help vocabulary growth (Carver & Leibert, 1995). Nor is reading text full of unfamiliar words likely to produce large gains in word knowledge (Shefelbine, 1990). To help ESL learners get the most out of reading, they should be encouraged to read at a variety of levels such as easy texts simply for enjoyment to increase their reading fluency and some texts that challenge them.

Increasing the students' motivation to read is another crucial factor in helping them to obtain the maximum benefits from their wide reading. A powerful motivating factor associated with more reading is a conducive classroom environment; a conducive classroom environment should encourage and promote social interactions related to reading (Guthrie et. al, 1995). Making available a variety of books and setting aside ample time for reading can also motivate reading. Other suggestions could be recommending or providing lists of books for students to read outside of class and modeling the value of reading by telling the students about the books you are reading. Furthermore, helping them to develop reading strategies is another useful way. This will allow them to read more challenging texts with lower levels of frustration. When they have developed such strategies they tend to do more reading (Guthrie et. al, 1995).

Nevertheless, similar to other methods, wide reading also has some limitations. First, it is not effective to very young ESL learners who are not yet able to read very much on their own. Second, it is not effective to ESL learners who intend to master vocabulary related to any specific content area. Wide reading is only effective in producing general vocabulary growth. Finally, it is important to acknowledge that wide reading does not produce immediate, magic results; its effects are cumulative and they emerge over time.

ii) providing direct instructions of specific words

Since some words are rarely used and not knowing them bring no harm in understanding the language, recent research has suggested that it is better for beginning and weak ESL learners to focus on the most frequent words first before moving to acquiring vocabulary related to their interests and needs. In other words, teaching approaches should not focus on average vocabulary size but on learning the "right word" (Cervatiuc, 2007). Lexical studies have suggested that some words are more frequent than others thus more useful for ESL learners. Francis and Kucera (1982) suggest that the 2000 most frequent word families of English make up 79.7% of the individual words in any English text, the 3000 most frequent word families represent 84%, the 4000 most frequent word families make up about 86.7%, and the 5000 most frequent word families cover 88.6%. Therefore, the goal of any ESL learners should be acquiring these 2000 word families first because knowing them means the learners can understand approximately 80% of the words in any English text. To be most effective, direct vocabulary instructions should be dynamic and should involve a variety of techniques.

First, instructions should use both definitional and contextual information about word meanings. In the past, vocabulary instructions normally consisted of learning of words and definitions which is of limited value particularly in improving students' reading comprehension (Stahl & Fairbanks, 1986). ESL learners need to know how a word functions in various contexts. Thus, instructional methods that provide them with both definitional and contextual information will significantly improve comprehension. Activities that provide the students with definitional information include teaching synonyms and antonyms, rewriting definitions, and providing example sentences. As for the contextual information, activities may include having the students create sentences that contain the new word, using more than one new word in a sentence, and discussing the meaning of the same word in different sentences.

Second, instructions should actively involve ESL learners in word learning. Learners remember more when they relate new information to known information, transforming the information in their own words, generating examples, producing antonyms and synonyms, and other vocabulary learning activities.

Finally, using discussion is another effective strategy to teach vocabulary. ESL learners with little or no knowledge of some new words they encounter are often able to guess the meanings from the bits of partial knowledge contributed by their classmates because for words that they do not know or know partially the give-and-take of discussion can generate meanings. Furthermore, discussion also involves them in other ways. For instance, as they wait to be called on, they practice covertly or silently prepare a response. Therefore, even though a teacher calls on only one or a few students,

many other students anticipate that they will have to come up with an answer. As a result, discussion leads to more vocabulary learning (Stahl & Clark, 1987).

Though direct vocabulary instruction does help ESL learners to improve comprehension significantly, some disadvantages may appear. First, teaching vocabulary as they read can distract them from the main ideas of the text. Second, teaching words which are not important to comprehending the text leads them to focus on individual word meanings rather than on the overall meaning of what they read. In fact, the more they focus on word meanings, the less they spend on recalling information that is important to comprehension (Wixson, 1986). Thus, to be effective, pre-reading vocabulary activities should focus on words that relate to the major ideas in a text rather than on interesting or unusual words.

iii) Teaching independent word-learning strategies

Independent word-learning strategies are techniques that teachers can model and teach to ESL learners so as to help them figure out the meanings of unknown words on their own. Graves (2000) notes that if students are to be successful in understanding unfamiliar vocabulary in their reading, they need to learn *about* words not simply acquire new words. Several researchers have found that directly teaching word-learning strategies can help students become better independent word learners (Baumann et. al, 2003; Blachowicz & Fisher, 2000; National Reading Panel, 2000). The effective word-learning strategies they have identified include how to use dictionaries, how to identify and use context clues, and how to use word-part information (morphological analysis).

a) Using dictionaries

According to Nation (2003), the skills required to use a dictionary differ according to whether the dictionary is used in conjunction with listening and reading (receptive use), or with speaking and writing (productive use). Each requires different set of steps. For receptive use, briefly, the steps involve getting information from the context where the word occurred, finding the dictionary entry, choosing the right sub-entry, and relating the meaning to the context and deciding if it fits. As for productive use, the steps are finding the wanted word form, checking that there are no unwanted constraints on the use of the word, working out the grammar and collocations of the word, and checking the spelling or pronunciation of the word before using it.

b) Identifying and using contextual clues

Context clues are clues to the meaning of a word that are contained in the text and illustrations that surround it. They can be definitions, examples, restatements, charts, and pictures. A study by Baumann et. al (2003) shows that middle school students who were taught to identify and use specific types of both linguistic information such as words, phrases, and sentences and non-linguistic information such as illustrations and typographic features were then able to use this information to unlock the meanings of unfamiliar words in text.

Teaching students to use context clues to develop vocabulary is an extended process that involves: modeling the strategy; providing direct explanations of how, why, and when to use it; providing guided practice; gradually holding students accountable for independently using the strategy; and then providing constant reminders to apply it to reading across content area.

c) Using word part information (phonological analysis)

Morphology or *structural analysis* refers to the study of word parts. *Structural analysis* draws students' attention to the morphemes, the meaningful word parts, that readers can identify and put together to determine the meaning of unfamiliar word. Knowledge of morphemes and morphology plays a valuable role in word learning from context because readers can use such knowledge to examine unfamiliar words and figure out their meanings (Carlisle, 2004). It is estimated that more than 60 percent of the new words that readers encounter have easily identifiable morphological structure (Nagy et al., 1989). In addition, Nagy and Anderson's (1984) analysis of printed school English materials also made clear that a large number of words that students encounter in reading are derivatives or inflections of familiar root words. Thus, they can be broken into parts namely root words, prefixes, and suffixes.

To be most effective, word-part instructions should teach students the meanings of particular word parts as well as a strategy for when and why to use them. Successful instructions do not require students to recite the meanings of word parts they encounter. Rather, they involve having the students read texts with words that use the word parts and give them opportunities to learn about word origins, derivations, and usage. Such a concept towards word learning can stir students' interest in learning more about language and building word consciousness (Baumann et al., 2003).

iv) Using computer technology

Using computer technology is cited as a promising technique for increasing vocabulary (National Reading Panel, 2000). A few studies, in fact, do suggest some possibilities for ways that computers might assist in vocabulary learning (Davidson, Elcock, & Noyes, 1996; Heller et al., 1993; Reinking & Rickman, 1990). Wood (2001) suggests that the greatest advantage of computer technology lies in certain capabilities that are not found in print material such as

game-like format, hyperlinks, online dictionaries and reference materials, animations, and access to contend-area-related websites.

Cobb (2007), furthermore, claims that acquiring vocabulary randomly could not promise the most needed and frequent words are learned. He thus suggests an alternative way to learn the 2000 most frequent word families. They could be learned from online frequency-based word lists linked to dictionary explanations. Cobb's (2007) computer program displays word lists linked to a software providing concordances- lists of contexts exemplifying a word or word family. Though using computer-provided contexts might not be as authentic as meeting the words in natural contexts, at least "using computer concordances can get the learning process off to a good start" (Cobb, 2007). ESL teachers can incorporate the use of lexical concordances in their practice, either by using the program itself if the classrooms have access to online technologies or by printing handouts of concordances for the 2000 most frequent words.

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