

Literature Review of the Breadth and Depth of Vocabulary*

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Abstract—As the basic element of language, vocabulary is the cornerstone of language communication. However, the majority of English learners just remember vocabulary by rote-learning and could not put them into practical use. As a result, their efficiency in vocabulary learning is still not satisfactory. Many effective approaches have been proposed in the foreign language teaching field so as to enhance L2 learners' English Proficiency. This paper aims at exploring the essence of the breadth and depth of vocabulary for the sake of promoting learners' competence of vocabulary learning.

Index Terms—vocabulary breadth, vocabulary depth, literature review

Nowadays, English means a lot to everyone. We all have learned English since primary school. However, the English level of second language learners is still poor. Generally speaking, problems do exist in current English vocabulary teaching, especially in college among non-English majors. In college English instruction, teachers focus on the grammar and vocabulary size, but pay less attention to depth of vocabulary knowledge. In addition, limited English class is another main reason. As a result, the learners could not express their thoughts effectively in writing or actual communication. In the past decades, many scholars attached great importance to vocabulary acquisition and appropriate vocabulary acquisition strategies for foreign language learners. However, literature review of the breadth and depth of vocabulary have not aroused broad concern. In this chapter, a brief review of L2 vocabulary will be made, especially the depth of vocabulary knowledge. The related studies on vocabulary knowledge are listed from various aspects, and finally put forward the method and significance of L2 vocabulary acquisition. This study will not only attach more importance to depth of vocabulary knowledge but also provide a new way to college English teaching, especially in vocabulary instruction.

I. THE DEFINITION OF A WORD

The definition of a word is controversial and it has occupied many scholars' attention for a long time due to different aspects, backgrounds in their studies. It is necessary to define the basic elements of words and vocabulary. As an elusive concept, word needs instant reaction. Mastering a word is not just acquainted with the written and spoken forms, literal meaning but to learn its syntactic properties and then to have the ability to use it correctly in various situations.

Nation (1986) argued that word could be defined according to extra learning needed or not. In his view, "like" and "dislike" are supposed to be one word if the people know the word "like". The reason is that no extra knowledge will be required to comprehend the word "dislike" if the learner masters the prefix -dis. However, the same form word "heavy" (weighty) and "heavy" (greasy) should be considered as two words with different meanings in various situations. Schmitt (2000) defined word based on the process of acquisition. He held that words were acquired gradually through long-term exposures.

Ye Feisheng (1997) believed that words were those smallest significant symbols independently applied in a single language. Word was a typical grammatical unit appearing in different forms. Zhang Weiyu (2011) stressed that, to sum up, the definition of a word would include the following points. "1) a minimal free form of a language; 2) a sound unity; 3) a unit of meaning; 4) a form that can function alone in a sentence. A word is a minimal free form of language that has a given sound, meaning and syntactic function." It means that words can be defined from different aspects such as written and spoken language, semantics, syntactic, pragmatics. Compared to the definitions mentioned above, different linguistic dictionaries defined the word according to certain dimension. Oxford Advanced Learner's Dictionary of Current English with Chinese Translation (1995) defined the word as sound of combination of sounds (or the written or printed symbols) forming a unit of the grammar or vocabulary of a language. A general definition was proposed but it ignored the diversity of the words. And then, from a new perspective, Nation (2001) presented three aspects of a word: form, meaning and use.

A few definitions about word have been presented according to different studies with various approaches and purposes. In this paper, the author's aim is to study the knowledge of vocabulary depth. The author holds that the process of mastering a word is progressive with continuous exposures. In other words, the definition of Schmitt is more

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suitable to this study.

II. VOCABULARY KNOWLEDGE

Language is a growing store rather than a set of numerous words and fixed expressions. It can be defined as a means of verbal communication with instrumental, social and conventional characteristics. Learners' vocabulary knowledge has been considered as the most crucial factor in language competence related to language proficiency. However, during the past decades, studies have been found that there is no accordant definition of vocabulary knowledge.

In recent years, two influential approaches about vocabulary knowledge have aroused scholars' attention. The one is named "the dimensional approach" and the other one called "the developmental approach". The former aims at the pedagogical objectives. The definition is from various aspects of a word based on the classroom observation. Cronbach (1942) firstly presented the question: What is it meant to know a word? He divided vocabulary knowledge into two parts: the meaning of a word and the levels of accessibility. He put forward that to comprehend a word includes five parts: generalization, breadth of meaning, precision of meaning, availability, application. Although a relatively comprehensive explanation has been proposed it lacks of other aspects of vocabulary knowledge (pronunciation, spelling, origin, morpho-syntactic, variant and word associations). The latter is an empirical approach according to the quantitative and qualitative data collected from L2 learners. However, the experiments of this approach are more controversial because of the long-time and uncertain factors from subjects. So this research will focus on the dimensional approach.

The next influential linguist is Richards who extends the definition of vocabulary knowledge. He was the first one who listed different kinds of vocabulary knowledge. Richards (1976) held that to understand a word should include these aspects called eight assumptions: the feature of native speakers' vocabulary knowledge, association, syntax, frequency, derivation, register, semantic features and polysemy. Some empirical studies at home and abroad are proceeded based on the framework of vocabulary knowledge presented by him. His framework firstly presents the extensive aspects of vocabulary acquisition and it is a significant breakout in the study of the depth of vocabulary acquisition. Richards's framework reflects the essence of vocabulary acquisition, but some fundamental elements are still not mentioned such as pronunciation, collocation, the relations between these aspects of vocabulary acquisition, the conditions of vocabulary acquisition and so on.

A. *Breadth and Depth of Vocabulary Knowledge*

Researches on L2 vocabulary acquisition have been divided into two parts: the one is bilingual mental lexicon in psycholinguistic field; the other one is to focus on language teaching from two dimensions: vocabulary breadth and vocabulary depth.

The extreme significant parts in learners' language abilities are the breadth and depth of vocabulary knowledge. The breadth of vocabulary knowledge is about vocabulary size and belongs to the quantitative aspects as the minimum knowledge of the meaning. As Meara (1996) held that: All other things being equal, learners with big vocabularies are more proficient in a wide range of language skills than learners with smaller vocabularies. Yoshida's (1978) case study reflected that the number of active words of the learners' vocabulary size was 300 at the final stage. Schmitt and Meare (1997) used a test to measure three aspects of vocabulary knowledge: word association, vocabulary size and suffix. The results showed that the three aspects interacted with each other. In addition, the breadth of vocabulary knowledge meant a lot to second language acquisition and closely related to other aspects in foreign language learning conducted by Nation and Laufer (1995).

In a word, the studies on vocabulary size have thrown a light on vocabulary knowledge for further researches. However, the related studies in the breadth of vocabulary knowledge only present superficial information of a given word. Thus, more studies are supposed to be conducted in another aspect-the depth of vocabulary knowledge.

In contrast to vocabulary size, the depth of vocabulary knowledge is another primary aspect of vocabulary knowledge, which refers to how well the learners grasp a word or the knowledge of a given word from different levels and belongs to the qualitative aspects. The depth of vocabulary knowledge contains more complex knowledge rather than the literal meaning or form of a word. Laufer (1998) presented that vocabulary development was not only composed of vocabulary size but also the improvement from superficial to deep level, and it included two significant aspects: knowing the basic meaning and deepening the known words. However, only a few studies have been conducted concerning the depth of vocabulary knowledge. Richards (1976) held that to have a good command of a word, the learners were supposed to comprehend the word completely from different components, which could do good to the learners' language proficiency, especially in writing. The depth of vocabulary knowledge is composed of form, morphological property, syntactic property, meaning, register and frequency.

The process of vocabulary acquisition is gradual from superficial level to full mastery of a given word rather than the basic elements of meaning and form. Vocabulary in cognitive domain usually may not exist at the same level, some are in the initial stage but others are grasped well from various aspects.

B. *Previous Studies on the Depth of Vocabulary Knowledge*

In this part, it will focus on the empirical researches related to the depth of vocabulary knowledge in the domestic

and overseas. In the west, the researches on this domain appeared in the 1990s and conducted by Nation, Richards, Schmitt. In China, the related researches started in 2000 with the paper of Wu Xudong and Chen Xiaoqing. The most influential domestic researchers include Wu Xudong, Chen Xiaoqing, Liu Shaolong. Although the empirical researches are limited, they still presents significant outcomes.

Plenty of studies about the depth of vocabulary knowledge have been conducted based on the framework of Nation and Richards. According to Nation's framework, Schmitt and Meara (1997) tested the depth of vocabulary knowledge from two dimensions: suffixes and association. The research lasted for an academic year and it aimed at exploring the changes of suffixes and association. 95 Japanese English learners were selected as the subjects. In the post-test, the learners' vocabulary size had increased by 330 words. The study showed the subjects had a finite knowledge of suffix and word association. It revealed that the two aspects vocabulary knowledge (word association and suffix) interacted with each other and associated with learners' vocabulary size and Language competence. However, only verbs were selected as the target words in this study, other word classes were ignored.

Later, Schmitt (1998) conducted a study to measure vocabulary knowledge from four aspects: association, spelling, grammatical information and meaning. The subjects were 3 adult English learners who had a good command of the vocabulary knowledge. The result presented that the subject did better in spelling, but the derivation word of the given words were still at superficial level. He had not reference to related empirical researches in his paper and just provided rough information about the depth of vocabulary knowledge. What's more, the result lacked validity because of a small number of subjects.

In China, based on Nation's framework, Wu Xudong and Chen Xiaoqing (2000), the pioneers, conducted a study from a new aspect. The subjects were Chinese high school and university students and the test contents were from four aspects: meaning, collocation, synonym and inflectional affix. It revealed that the four aspects of vocabulary knowledge could be acquired at the same time due to the feature of cognitive process in vocabulary learning. What's more, the learners could get hold of meaning with high efficiency rather than the other three kinds of lexical knowledge.

Liu Shaolong (2002) tested the dimension development and acquisition patterns of English vocabulary knowledge. The Chinese English learners with three different English levels were selected as the subjects. The test contents were composed of three aspects of vocabulary knowledge including affix, meaning and part of speech which were based on 10 high frequency words. This quantitative study focused on vocabulary depth knowledge. It showed that the process of second language acquisition is complex and inconsistent. And then, some studies added weight to the findings we have presented above (Mo Qingyang and Sun Lan (2004)). Meaning could be acquired quickly than collocation. In addition, there was a "plateau" phenomenon in language acquisition process and each kind of vocabulary knowledge would be affected by various acquisition patterns.

The researches having been mentioned above are all based on the Nation and Richard's framework. Although the studies vary from details, the results confirm Nation and Richard's statements and reflect the complicated elements of second language vocabulary acquisition.

C. *Measures of the Depth of Vocabulary Knowledge*

In recent years, researchers have attached importance to the depth of vocabulary knowledge and provided significant instruments. In this part, two approaches will be present to analyze the measures of depth of vocabulary knowledge: the developmental and the dimensional approach.

The former uses scales to test the different stages of word acquisition. In other words, the lexical knowledge can be measured by the scales. Paribakht and Wesche (1996) adopted the Vocabulary Knowledge Scales (VKS). This test format was designed from five levels.

Target word:

I. I don't remember having seen this word before.

II. I have seen this word before, but I don't know what it means.

III. I have seen this word before, and I think it means _____ (synonym or translation)

IV. I know this word. It means _____ (synonym or translation)

V. I can use this word in a sentence: _____ (If you do this section, please also do Section IV.)

This format contains five scales with both advantages and disadvantages. On the one hand, it simplifies the complicated dimensions of vocabulary competence and provides a fixed linear scale to clearly present the gradual process of vocabulary acquisition from two aspects: receptive to productive of vocabulary knowledge. The scale I is to measure receptive vocabulary knowledge and the rest for productive one. In addition, the synonym or translation (scale II and scale III) is an indicator to learners' superficial level of the target word. First, this format provides us a comprehensive aspect of vocabulary knowledge and presents us a better understanding about the process of vocabulary acquisition. Second, the complex vocabulary knowledge can be tested easily. Third, this format pays more attention to both receptive and productive vocabulary knowledge from different dimensions.

On the other hand, some disadvantages exist in this format. First, it only tests one meaning and one related use of the target word so that the multiple meanings have been ignored. Second, the design of the scales lacks of theoretical support because no study has exactly described how many stages in second language vocabulary acquisition. Third, no study has proved the process of full mastery of a headword ranging from scale I to scale V. Fourth, the intervals are confusing if the process of vocabulary acquisition is a continuum. Fifth, the format is time-consuming if more target

words need to be measured. Maybe the subjects' emotion or attitude will be influenced by long time test.

All in all, although more studies should be conducted in assessing depth of vocabulary knowledge, this format is still an influential one in this aspect.

The latter one reflects the mastery of various aspects of lexical knowledge. This approach is based on the framework put forward by Richards (1976). The measurements in depth of vocabulary knowledge include two dimensions: interview and pencil-and-paper test. Read (1988) and Schmitt (1988) both conducted interviews to measure the learners' word knowledge by presenting specific questions. And then, Read (1993) adopted a test to measure two parts of the depth of vocabulary knowledge from synonyms and collocations. In addition, the format were turned out having a high validity and reliability. In Read's test, 50 items were selected as the target words followed by four synonyms and collocations. Here is the format of this test:

Heavy
 Synonyms: A complex B weighty C tense D grave _____
 Collocations: E impression F food G traffic H smoker _____

This format is designed to test the knowledge of vocabulary depth. Each item consists of one target word, which is an adjective. The content consists of two aspects of vocabulary knowledge: synonyms and collocations, each including four words. One to three words can be regarded as synonymous to one aspect, or the whole meanings of the target word among the four words in the first line. However, there are one to three words can collate with the target word among the four words in the second line. Each target word has four right choices.

What's more, some studies have regarded meaning and collocation as the significant aspects of vocabulary knowledge. However, there are some disadvantages in his format because of the limited contents. Only the high frequency adjective is selected as the target word. It only deals with two aspects of vocabulary knowledge: synonyms and collocations. As English teacher, we can adopt this format so as to test freshmen' vocabulary competence (Appendix 1). All the target words are composed by high-frequency vocabulary of high school.

According to the format mentioned above, Nation developed another test from four aspects in the depth of vocabulary knowledge: synonyms, word class, affix and collocation. Nation's format meets the need of measuring vocabulary knowledge from multidimension. The format is as follows:

Respectful

(A) lucky	(A) noun	(A) respect	(A) spectator
(B) ordinary	(B) verb	(B) respectable	(B) advantage
(C) polite	(C) adjective	(C) respective	(C) tone
(D) necessary	(D) adverb	(D) respected	(D) objective

Nation's format can test vocabulary knowledge from four aspects. According to this test, the depth of vocabulary knowledge can be measured systematically. In addition, the four aspects mentioned above are regarded as the primary dimensions of a word. On the one hand, it reveals that second language learner's language competence can be reflected by the test; on the other hand, English teaching always conducted based on the four aspects. However, there are some disadvantages in its content and design. Firstly, the correct options are not fixed. What's more, this format is complex and difficult, it is not suitable for second language learner in low level. Secondly, it only measures the words with numerous affixes, meanings and word classes. That is to say, the headwords are supposed to be high-frequency vocabulary to some extent. Thirdly, this format is time-consuming. Maybe the subjects will be influenced in many aspects such as motivation, affective filter, attitude and soon.

III. CONCLUSION

Vocabulary is the essence of communication. The poor vocabulary competence exists generally among college English learners. This paper reviews the vocabulary knowledge in terms of breadth and depth, especially depth and presents the primary test measures of vocabulary depth. It lays the groundwork for vocabulary research.

APPENDIX. DEPTH OF VOCABULARY KNOWLEDGE TEST

Background questionnaire:

Name: _____

Age: _____

Gender: _____

Major: _____

This test is designed to test the knowledge of vocabulary depth. Each item consists of one target word, which is an adjective. The content consists of two aspects of vocabulary knowledge: synonyms and collocations, each including four words. One to three words can be regarded as synonymous to one aspect, or the whole meanings of the target word among the four words in the first line, However, one to three words can collate with the target word among the four words in the second line. Each target word has four right choices. The subject is given one point for each correct answer and the total score is 100 points. Here is an example.

Sudden

beautiful B. quick C. surprising D. thirsty _____
 A. change B. doctor C. noise D. school _____

In this case, quick and surprising are synonyms of the stimulus word of sudden, change and noise can collate with sudden. You answer it in the following way.

A. beautiful B. quick C. surprising D. Thirsty BC
 A. change B. doctor C. noise D. school AC

Here is the test

1. loud

同义词 A. noisy B. satisfactory C. tall D. great _____
 搭配词 E. hand F. milk G. voice H. dress _____

2. average

同义词 A. lucky B. ordinary C. low D. necessary _____
 搭配词 E. age F. advantage G. intelligence H. speed _____

3. heavy

同义词 A. complex B. weighty C. tense D. grave _____
 搭配词 E. impression F. food G. traffic H. smoker _____

4. clear

同义词 A. neat B. distinct C. distant D. tidy _____
 搭配词 E. building F. conscience G. sky H. water _____

5. adequate

同义词 A. potential B. essential C. competent D. enough _____
 搭配词 E. attitude F. supply G. preparation H. weather _____

6. outstanding

同义词 A. long B. prominent C. refined D. excellent _____
 搭配词 E. professor F. achievement G. water H. rain _____

7. positive

同义词 A. assured B. active C. guilty D. favorable _____
 搭配词 E. mirror F. fact G. attitude H. bamboo _____

8. private

同义词 A. free B. handsome C. secret D. informal _____
 搭配词 A. life B. school C. heaven D. letter _____

9. familiar

同义词 A. naughty B. acquainted C. pleasant D. close _____
 搭配词 E. song F. surrounding G. stop H. learning _____

10. sound

同义词 A. round B. present C. healthy D. reasonable _____
 搭配词 E. tie F. economy G. mind H. party _____

11. fresh

同义词 A. splendid B. firsthand C. fair D. up-to-date _____
 搭配词 E. comprehension F. air G. start H. bread _____

12. distant

同义词 A. secure B. remote C. indifferent D. similar _____
 搭配词 E. look F. occupation G. law H. education _____

13. blank

同义词 A. empty B. vacant C. wide D. special _____
 搭配词 E. check F. look G. performance H. skip _____

14. definite

同义词 A. decisive B. explicit C. limited D. eager _____
 搭配词 E. statement F. answer G. school H. writer _____

15. artificial

同义词 A. unreal B. limited C. manmade D. interested _____
 搭配词 E. education F. silk G. smile H. destination _____

16. modest

同义词 A. humble B. fearful C. moderate D. shy _____
 搭配词 E. price F. tape G. right H. minute _____

17. favorable
 同义词 A. favorite B. helpful C. advantageous D. subject _____
 搭配词 E. position F. situation G. cat H. cry _____
18. delicate
 同义词 A. fine B. faithful C. jealous D. sensitive _____
 搭配词 E. taste F. strike G. child H. difference _____
19. faithful
 同义词 A. grateful B. loyal C handsome D.reliable _____
 搭配词 E. friend F. room G advantage H. heart _____
20. broad
 同义词 A. vast B. funny C. roomy D. sweet _____
 搭配词 E. book F. smile G punishment H. band _____
21. generous
 同义词 A. personal B. plentiful C. artistic D. openhanded _____
 搭配词 E. person F. offer G gift H.meal _____
22. easy
 同义词 A. delayed B. comfortable C. effortless D. humorous _____
 搭配词 E. life F. work G leather H. acquaintance _____
23. curious
 同义词 A. visual B. strange C. interested D. empty _____
 搭配词 E. child F. sea G. antique H. look _____
24. critical
 同义词 A. crucial B. impolite C. faultfinding D. inexperienced _____
 搭配词 E. dictionary F. situation G. wood H. thinking _____
25. original
 同义词 A. careful B. genuine C. first D. proud _____
 搭配词 E. condition F. data G. edition H. sister _____

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