

Study on English Vocabulary Teaching from the Perspective of Memetics*

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Abstract—As the famous linguist Harmer (1990) said, "If we compare language structure as the skeleton of language, vocabulary provides it with the most important organ as well as blood and flesh". Obviously, vocabulary plays a crucial role in language learning. However, it has been shown that vocabulary learning is one of the weakest links in English learning for most students in China and a great majority of students have difficulties in words learning because traditional vocabulary teaching mode can't arouse students' interest, they often feel difficult and bored; as a result vocabulary becomes a big challenge for them.

Memetics, based on Darwin's evolutionary viewpoints, is a new theory that explains cultural evolution, meaning that information is copied from one human brain to another by imitation. The theory, which mainly inspects language and related phenomena, not only reveals the rules of language developments, but also offers a new idea for English language teaching. By studying its origin and definition, lifecycle and transmission mode, this paper will adopt mechanism of language meme to teach English vocabulary and focus on developing students' interest in vocabulary learning and cultivating students' vocabulary learning strategies so as to improve the efficiency of English vocabulary teaching and learning.

Keywords—*memetics; English vocabulary teaching; interest; vocabulary learning strategies*

I. INTRODUCTION

Just as the famous linguist Harmer [1] has said, "If we compare language structure as the skeleton of language, vocabulary provides it with the most important organ as well as blood and flesh." and another linguist D. A. Wilkins [2] has also mentioned, "Without grammar, very little can be conveyed; Without vocabulary, nothing can be conveyed", thus it is well known that vocabulary plays a very crucial role in language learning.

Vocabulary is the most basic material of language and vocabulary learning is the foundation and key of language

*Project: This paper is one of the achievements of college-level project Demonstrative Course Development for Applied Majors "Linguistics-A Course Book" in 2017 (project number: sfkc201752) and project of Education Department of Sichuan Province: The "memes" indispensable in western minority areas (project number: 18SB0503).

learning. When students learn a language, they start with vocabulary first and when teachers teach a language, they also teach from vocabulary first because vocabulary is the premise and guarantee of other teaching activities such as listening, speaking, reading, writing or even translation, undoubtedly vocabulary teaching is important and arduous in English teaching.

However, most Chinese teachers don't attach great importance to vocabulary teaching. They mainly adopt traditional teaching model as follows: teachers usually lead students to read the words first, and then explain the usage and important collocation of the words with examples on the blackboard or PPT. Second, they will ask the students to copy and recite the words in class. Last, they will dictate words next class to test the effect of vocabulary recitation. This method overemphasizes mechanical memory of words and pays little attention to develop students' interest in vocabulary learning or to guide them to figure out more vocabulary memorizing methods, as a result, many students feel difficult and bored to learn English words, which is mainly manifested in memorizing vocabulary and applying vocabulary learning strategies. To be specific, first, students have little interest in remembering vocabulary and lack vocabulary learning strategies, thus their devotion to vocabulary memory is not in proportion to the effect. Second, students accept knowledge often in a passive state, their memory of words and use of words lack of motivation. Last, vocabulary teaching is often divorced from real language environment, thus students do not understand cultural background, resulting in the inability to accurately understand and use the vocabulary, as a result of which the vocabulary learning is not satisfactory. How to arouse and improve their interest in vocabulary learning, how to make students master effective vocabulary learning strategies and how to improve their achievements in vocabulary learning has become a problem to be solved urgently in English teaching.

Memetics, as a new theory in pragmatics provides a new perspective for vocabulary teaching and learning. By studying its origin and definition, transmission stage and transmission mode, this paper applies memetics to teach English vocabulary aiming at stimulating students' interest in vocabulary learning, offering students useful vocabulary learning strategies, and motivating students to learn

vocabulary more effectively, and thereby improving English vocabulary teaching and learning efficiency.

II. MEMETICS

A. The Origin and Definition

Memetics is a new theory to explain the law of cultural evolution based on Darwin's Theory of Evolution. Meme was first proposed by Richard Dawkins in his book *The Selfish Gene* which was published in 1976. Based on Darwin's evolutionary theory, he thought that there was cultural evolution and he defined the meme as a unit of intellectual or cultural information that survived long enough to be recognized as such, and which could pass from mind to mind [3]. The word "meme" originates from the Greek, meaning "the things which can be imitated", so imitation is the fundamental basis to judge a meme. Any information, as long as it can be replicated through the general process of imitation, it can be called as meme [4].

As for the creation of "meme", on one hand it is modeled on the word "gene". As gene passes down from parents to children in biological evolution, meme passes down from one brain to another brain in cultural evolution, which means that a meme is a replicator and a unit of cultural evolution. On the other hand, the word "meme" is quite close to the first four letters of "memory", which means that memes exist in the individual's memory. Then what is meme? According to *Oxford Dictionary*, "meme" is defined as a cultural unit such as an idea or value or pattern of behavior that is passed from one person to another by non-genetic means, especially by imitation, While *Merriam-Webster Dictionary* defines it as an idea, behavior or style that spreads from person to person within a culture.

Language is the heritage of society and culture, and is the main carrier of cultural transmission as well, and meanwhile a remarkable cultural phenomenon, and even the carrier of memes. From the perspective of memetics, language itself is a kind of meme. Every language, each word, phrase, sentence or paragraph and even every chapter, they are all memes if they are replicated and transmitted through imitation [5].

B. Memetic Lifecycle

Francis Heylighen [6] thinks that the life cycle of a meme can be divided into four stages, that is, assimilation, retention, expression and transmission which go round and round in sequence. Assimilation refers that the present meme is noticed, understood and accepted by a receptor. That is to say, a meme should draw attention of the receptor and then be understood, accepted and internalized into his or her own cognitive system. Retention means that the meme must be kept in mind or stored in memory for a period of time. Expression means that the meme needs to be transferred from the memory pattern to the physical forms through such "expression" ways as audio, image and language which can be perceived by other receptors. For example, if you deliver a speech, sing a song or compose a piece of music, draw a picture or write an article and so on, you express your idea in

mind out to others. Transmission means that the expressed meme will draw others' attention, be noticed, received and understood by others and successfully infect other hosts.

C. Memetic Transmission Mechanism

According to He Ziran, there are two ways to reproduce and transmit language memes. One is genotype referring to "the same contents in different forms" and the other is phenotype meaning "the different contents in the same form" [7].

Genotype means that memes replicate and transmit with the methods of repetition or synonymy in similar situations, and it is represented by the same information in the same form and the same information in different forms. The same information in the same form refers that the information could be directly transmitted without changing its original meaning in some suitable situations which contains various kinds of quotations, sayings, idioms, proverbs, classical lines, slogans and aphorisms. The same information in different forms means although information mutates and is different from the original information in the period of replication, those changes do not influence the original information and the content is still as the same as the one before being replicated, which means that the core information of kinds of variants is always unchanged and still the same.

Phenotype means to use the same form to express different contents in different contexts according to different needs, which mainly takes analogy as a way of replication and transmission and memes usually use this way to create and initiate some new variants to be transmitted. It includes the following three approaches: the first is analogy with the same sound which forms new memetic variants by imitating the pronunciation of words to express different meanings. The second is analogy with the same form which means to adopt the same form but in different contexts to evoke different associations. The third is analogy with the same structure which means to imitate the known language structures to express different meanings and to create a variant with some new content.

III. MEMETIC GUIDANCE FOR ENGLISH VOCABULARY TEACHING

A. English Vocabulary Teaching from Memetic Lifecycle

1) *English vocabulary teaching from assimilation*: The first stage of memetic lifecycle is assimilation. It is believed that in order to be assimilated, the presented meme must be noticed, understood and accepted by the host, and must be able to cater to the existing knowledge structure of the host, and the host must also be willing to know about it and take it seriously.

Theoretically, at this stage, in vocabulary teaching, interest is the best teacher and being suitable to students' cognitive level is of great importance; so, what teachers should do is not to ask students to memorize target vocabulary directly, but: 1) design interesting and various lead-ins to activate students' physical senses such viewing, listening, touching, or even smelling and tasting to receive

the intended new words, draw students' attention, arouse their curiosity and develop their interest in learning new English words so that they are willing and active to learn instead of being crammed; 2) make sure that the new vocabulary is in accordance with students' cognitive level, neither too difficult nor too simple, instructional scaffolding should be offered if necessary; 3) relate new words to students' life and make them realize that what they are going to learn is important and useful so as to stimulate their learning motivation; 4) guide students to understand the surface and deep meaning of new English words as much as possible so as to deepen their impression and to make a good paving for the retention stage.

Practically, when teachers teach new English words, they'd better first introduce them in an interesting way to attract students' attention and make connection between what students are familiar with and what they are unfamiliar with so that the target words will be easier to understand and accept. Traditional methods such as Direct Method in which teachers often use entity, body language, picture, music or video clip through multimedia machine to teach new words, Pronunciation Method in which teachers teach the spelling of new English words according to the pronunciation, Finding Differences in which teachers guide students to spot out differences among a group of similar or close words according to different criteria and learn new English words, Storytelling Method in which teachers tell a story to involve new words in and so on are still useful. Besides, there are many other ways, among which two ways are introduced as follows. One is that some English words can be written backwards and then become another new English words, for example, when "live" is spelt backwards, it is a new word "evil", when "are" is spelt backwards, the new word is "era", when "but" is spelt backwards, the new word is "tub" and when "mood" is spelt backwards, the new word is "doom" and there's a lot of words like this, like "deer-reed", "door-rood", "meet-teem", "liar-rail", "pans-snap" and so on. Teaching the words from old to new and from familiar to unfamiliar by spelling words from the last letter to the first letter is more interesting and much easier for students to understand them. The other is that teachers can also use some English puzzles, riddles, brain teasers, jokes or even tongue twisters to introduce new words or topic words. For example, "What will you break once you say it?-silence" "A mouse has a large pocket. What is it?-kangaroo" "People often say how time flies, why does time fly so quickly? -To get away from all those who are trying to kill it", students are encouraged to figure out answers by themselves under teachers' guidance step by step, and it's very helpful to arouse their interest and exercise their imagination.

2) *English vocabulary teaching from retention*: The second stage is retention. The longer the meme stays in memory, the greater the chance is to infect the host and spread itself. The length of retention depends on how significant the meme is and how often it is repeated. If the information is fairly important and interesting to students, they will pay more attention to it and spend more time memorizing it. Besides, it has been proved that repetition is

a good way to strengthen memory. So in this stage, theoretically teachers should attach great importance to new words, teach students some memory strategies to help students remember the new words from short-term memory into long-term memory and guide students to review them again and again to strengthen the memory.

Practically, traditional memory methods like repetition or recitation, classification, grouping are advisable, but teaching students following memory strategies such as keyword memory, contrastive memory, associative memory, word map and contextual memory and so on are quite helpful to increase memory space and time. For example, when teachers teach adjectives, contrastive memory method is often used. Teachers should guide students to consciously memorize antonyms of adjectives, noun and verb, like optimistic-pessimistic, success-failure, upload-download, etc. Moreover, associative memory is also a good method. For example, "family" can be imagined and split into "father and mother I love you", with the father, mother and child as well as love, it will make a happy family. Similarly, "Holland" can be imagined and split into "hope our love lasts and never dies" and "realm" equals the word "real" plus the letter "m" meaning "mother", so in Chinese it is "祖国 (realm) 就是我真正的 (real) 母亲 (m)" while "isolate", the first letter "I" shares the sound of "爱" in Chinese and the rest letters could be divided into "so late", "爱-so-late", "爱得如此晚" means "单身狗, 孤立, 隔离". In this way, it will be more interesting and much easier for students to understand and remember the new words.

3) *English vocabulary teaching from expression*: In expression stage, memes need to be expressed from memory pattern into the physical forms through audio, image and language and behavior and so on consciously or unconsciously. That is to say, the meme is not in the sleeping mode in the mind, but is activated, expressed and used by its host, which means in vocabulary teaching, teachers should guide students to use the words they have learned, and this is not limited to classroom exercises or homework, teachers should also encourage students to use the words everywhere in their daily life and create opportunities and environments for students to use them as much as possible. Traditional methods like different listening, speaking, writing and translation drills are useful. Dictation, write down the missing letters in words, write down the words according to given pronunciation, blank-filling, look at pictures and write down the words, listen and say the words, write out or translate the words according to giving meaning, make sentences by using the giving words, write a composition by using the giving words, role play, group discussion, debate and so on are often used. Moreover, in daily conversations with students, teachers can consciously speak English to talk to students by using what they have learned, or create an English corner where students can bravely speak out. This will not only help students review the words they have learned, but also help them practice speaking. In short, at this stage, teachers

should give students enough time and opportunity to practice and use words. Ways like Words Relay, Talking about Pictures, Word Guessing Game and Story Chain are recommended to help students remember words. For example, when teaching words such as "earthquake", "crack", "right away", "ruin", "destroy", the teacher can guide students to talk about the following pictures one by one by using these words. (See "Fig. 1")



Fig. 1. Pictures about earthquake.

The reference answer is like this: "The earthquake came and people ran out of the room right away. The house collapsed and the ground cracked. People's houses were destroyed and turned into ruins." which not only makes students to practice words, but also exercises their imagination. Another example is Word Guessing Games, usually for higher-level students who can use English to express their idea basically. In this game, students are divided into groups of five or six and in each group, there will be one guesser and the rest are describers who will work together to guess six words. The describers can look at the word in PPT and describe the word in English from different aspects such as classification, color, meaning, feature and so on and help the guesser to guess the word right, but they are not allowed to pronounce or spell the word or say its Chinese meaning, and when the guesser figures out the word, they move to next word or if they have difficulty in describing or guessing the word, they can give up by just saying "pass" and skip to next word. There will be a competition among different groups, and finally the group which guesses the most words right in the least time will be the winner. This game is very helpful to stimulate students' interest, exercise their imagination and involve them in the activity to practice their vocabulary.

4) *English vocabulary teaching from transmission:* In transmission stage, the information is not kept only to the host, but also extended to others and infect others. The key point of transmission is that the host should express the information out to other people and have communication and interaction with them so that they are impressed, understand and accept this information. To be successfully transmitted, a tangible vehicle with strong stability such as books, photos, CD and internet is needed. As we all know, as one language, the main function of English is to communicate and exchange ideas. Ways such as speaking English with others, writing letters in English to others, singing songs for others or drawing pictures for others and so on are ways to deliver information to others and infect them possibly. In fact, the teaching and learning of English vocabulary can be regarded as the transmission and reproduction of vocabulary meme between teachers and students or even between students and students, that is to say, when teachers teach a new word and

if students understand, accept it and know how to use it, the vocabulary meme is transmitted from teachers' brain into students' brain and if a high-level student help or tutor a lower-level student in vocabulary learning, the latter accept what the former teaches, then the meme is transmitted from the high-level student into the lower-level student.

B. *English Vocabulary Teaching from Memetic Transmission Mechanism*

1) *English vocabulary teaching from genotype:*

Genotype meme means that the same information can be transmitted in different contexts in the same form or different forms. In vocabulary teaching, the same information in the same form usually refers to fixed collocations or phrases which pass down from generations to generations unchanged while the same information in different forms means lexical closeness or similarity which are substitutable to each other in most cases, synonyms are what we call it. For the former type, the students are required to understand and memorize them exactly because even if they are used in different contexts, the meanings are unchanged. As for the latter, teachers can place the words in different sentences and ask students to replace them with other words of similar meaning and guide students to use them over and over again.

For example, the word "well", meaning "good, yes, satisfactory." Teachers can use the word in a general situation, and then slowly put the word in some special contexts to achieve the purpose of practicing vocabulary. Some examples are as follows:

- Well done!
- The kids all behaved well.
- The conference was very well organized.
- They lived well and were generous with their money.

In the first sentence, the word "well" is an adverb which means in a good, right and acceptable way. In the second, third and last sentence, even "well" is used in different sentences respectively, it has the same meaning and conveys the same information, so "well" here is a typical genotypic meme, which is copied and transmitted between teachers and students. To understand the same information in different forms, teachers can ask students to paraphrase or rewrite the sentence by using different expressions or structures but keeping the same meaning, e.g. they can be respectively rewritten into "Good job", "The kids all had good behavior or manner", "The conference was organized in a very good way", "They lived a good life and have enough money to spend".

2) *English vocabulary teaching from phenotype*

a) *Analogy with the sound:* For analogy with the same sound, in vocabulary teaching, usually there are three types. One is homophone, which means some words share the same pronunciation but have different forms and different meanings, such as rain and reign, night and knight, air and

heir, alter and altar, bare and bear, brake and break. So, in English vocabulary teaching, the teacher should consciously teach students new words according to the same pronunciation of old words, and help students to distinguish the words with similar sounds, increase their vocabulary and improve students' learning efficiency.

The second is homonym, meaning the words happen to have the same pronunciation and the same form but different meanings, such as bank, watch, fast and so on, which can refer to both "the financial organization for keeping and lending money" and "the side of a river, canal and so on", both "a type of small clock that you wear on your wrist" and "the act of watching sb. or sth. carefully" and both "moving or able to move quickly" and "to eat little or no food for a period of time, especially for religious or health reasons". For this type, we can only figure out the meaning in specific contexts.

The last is to remember the English words according to similar Chinese pronunciation, which is only for beginners in a short run, not advisable for English learning in the long run, for example, "toe" shares the sound of "头" in Chinese, "ambulance" sounds like "俺不能死" in Chinese.

Quite often, similar English pronunciation with different meanings is often used to achieve humorous effect, especially in jokes and riddles, for example, "My senior high school desk mate is called Jack and we haven't seen each other for years. Then one day I saw Jack on the opposite side of the street, excitedly I greeted him "hi, Jack", but he didn't hear me. Then I ran toward him in a hurry and shouted "hijack", to my surprise, he ran away immediately." Here in this joke, when "hi, Jack!" is pronounced quickly, it sounds quite close to "hijack", that's where the humor is. Another joke is between a mother and a little boy. "After finishing breakfast, there was still some butter left on the plate, the little boy took the butter and threw it through the window, the mother saw it and asked him why he threw butter out of the window, the boy answered that he wanted to see the butterfly." Here, "butter-fly" and "butterfly" are pronounced the same but mean totally differently. In this context, different associations are evoked by resorting to similar sounds. In the riddle "Who is closer to you, your mom or your dad?" -"Mom is closer, because Dad is farther." Here, "farther" sounds very close to "father".

According to what's mentioned above, methods such as teaching students or helping students to summarize the homophone and homonym, guide them to remember the English words according to similar Chinese pronunciation, or even use English jokes or riddles to introduce or review new words are helpful to deepen their memory and increase their vocabulary.

b) *Analogy with the form*: As for analogy with the same form, in vocabulary teaching, it usually refers to homograph and polysemy. The former is that the words are the same or close in form but different in pronunciation and meaning, such as tear [teə(r)] and tear [tiə(r)], desert [ˈdezərt] and dessert [dɪˈzɜːrt], lead [li:d] and lead[led]. The latter means one word has different interpretations and

associations when used in different contexts. Here take the word "develop" as an example. By looking up the dictionary, the word "develop" has different meanings in different contexts, so teachers should guide students to guess the different meanings according to different collocations so as to strengthen their understanding and memory. Eg: develop a good habit 培养好习惯, develop natural resources 开发天然资源, develop a new model 研发新模型 and develop a film 冲胶卷. By memorizing such phrase collocations, the different meanings of "develop" will be much easier to understand and remember. Sometimes jokes also resort to this method, e.g. once a professor walked into his classroom and found his students were talking loudly, so he said "order" in anger, but the students replied "beer". Here "order" could be understood in two ways, one is to keep order, to be quiet in class and the other is to order food or drinks in a bar or restaurant, the humor lies that the professor meant the first while the student interpreted it into the second.

What's more, conversion which means changing the word class of the same word and making it have different meanings also belongs here, such as record [ˈrekərd] and record [riˈkɔːrd] with the shift of stress, water [ˈwɔːtə(r)] and water [wɔːtə(r)] with no shift of stress and so on. Conversion is often used in English tongue twisters, such as "Don't trouble about trouble until trouble troubles you." "If you notice this notice, you will notice that this notice is not worth noticing." "I wish to wish the wish you wish to wish, but if you wish the wish the witch wishes, I won't wish the wish you wish to wish." The point of these tongue twisters lies in the conversion between the Noun of "trouble, notice and wish" and the Verb of these words.

To teach and learn this type of vocabulary, homograph, polysemy and conversion should be taught, English jokes and tongue twisters are helpful and contextual memory is adopted because only when we put these words in specific contexts, can we understand and memorize them correctly.

c) *Analogy with the structure*: For analogy with the same structure, in vocabulary teaching, it is often closely related to such word formation especially as derivation (prefix and suffix), inflection and analogical creation, so teachers should teach students derivational affixes such as prefixes and suffixes and inflectional affixes such as -ing, -s/es, -ed, -er, -est and so on as well as other regular word formation rules.

Derivation is the process of adding derivational affix such as prefix, suffix or both to a word based on lexical reasons, like the adjective "different", its noun form is "difference" and the noun is formed by changing the word final "t" to "ce". There are a lot of words in English that resemble this structure. E.g.: important and importance, distant and distance, consequent and consequence. Another example is "international", it is formed by adding the prefix "inter-" and suffix "-al" to the root "nation", teachers should guide students to learn the prefix "inter-" such as internet, interact, and interrelate which means "between, mutually" and the suffix "-al" such as national and industrial which means "have the nature of..., like..."

As for inflection, the process of adding an inflectional affix to a word or changing it in some other way according to the rules of the grammar of a language, it usually refers to the plural form of Noun such as "-s" in "apples", the possessive case of Noun such as "'s" in "my son's", the third person singular in present tense such as "-s" in "He likes drinking", the past tense as "-ed" in "He liked drinking", the present participle and past participle of Verb such as "-ed" in "he have left for London" and "-ing" in "he has been working as a lawyer", the comparative degree and superlative degree of Adjective (or adverbs) such as "-er and -est" in "happier and happiest", which lays the general rule for other words to imitate and change like these.

Analogical creation means that words or phrases are created or re-formed according to the existing patterns in the language. Take "landscape" as an example, which consists of two words "land" and "scape", meaning the scenery of land, following this word formation structure, "land" can be changed into "moon" and "mars" while "scape" remains unchanged, thus there is "moonscape" and "marscape" meaning "a view of the surface of the moon" and "a view of the surface of the Mars". Similarly, analogy with "blue-collar workers", words like "white-collar workers, gray-collar workers, pink-collar workers and gold-collar workers" can be formed.

To sum up, in vocabulary teaching, teachers should teach students the above-mentioned word formation to help students memorize words firmly, arranges the words with similar structure, guide students to figure out word formation rules and make students learn English vocabulary systematically.

IV. CONCLUSION

By applying lifecycle of memetics to English vocabulary teaching, it is found that the teaching process can be divided into four steps from the perspective of memetics: vocabulary assimilation stage, vocabulary retention stage, vocabulary expression stage and vocabulary transmission stage. The first stage requires teachers to introduce words in ways as new and diversified as possible to arouse students' interest, and at the same time to assist students to use the old knowledge they have learned to maximize assimilation and absorption. In retention stage, teachers should attach importance to new words learning and teach students some scientific and effective memory methods. In expression stage, the most important thing is that the teacher should give students enough time and create opportunity to practice the words by various exercises and different activities. In transmission stage, teachers should encourage students to learn how to express what they have learnt and share what they have known with others by tangible vehicles of sound, pictures, and books and so on so as to spread the meme to more people and infect more potential hosts.

By applying memetic transmission mechanism to English vocabulary teaching, it is found that for genotype, lexical repetition and similarity are often used while in phenotype, for analogy with sound, methods such as homophone and homonymy, remember English words according to similar

Chinese pronunciation, or even use English jokes or riddles to introduce new words are helpful. For analogy with the form, homograph, polysemy and conversion should be taught, English jokes and tongue twisters are useful and contextual memory is often adopted. For analogy with the structure, teachers should teach students such word formation methods as derivation, inflection and analogical creation to help students memorize words firmly and systematically.

This paper is only a theoretical exploration of English vocabulary teaching from the perspective of memetics, and does not conduct any specific experiments and surveys, thus lacks the corresponding data support. To enhance the authenticity and objectivity, the future research should go into schools and colleges and apply memetics to English vocabulary teaching in real classroom.

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