



## An Action Research on Deep Word Processing Strategy Instruction

Limei Zhang

School of Foreign Languages, Hangzhou Normal University

16 Xue Ling Street, Hangzhou 310000, China

Tel: 86-571-8708-9786 E-mail: yaz\_lm@163.com

### Abstract

For too long a time, how to memorize more words and keep them longer in mind has been a primary and everlasting problem for vocabulary teaching and learning. This study focused on deep processing as a word memorizing strategy in contextualizing, de- and re- contextualizing learning stages. It also examined possible effects of such pedagogy on vocabulary competence and attitude towards word learning. The context of the action research was an 11-week deep word processing strategy instruction program, involving 39 non-English major freshmen. The results showed that teacher's strategy-based instructional intervention affected the changes both in learners' vocabulary competence and in teachers' and learners' attitude toward word learning. These findings were discussed in terms of some issues deserving more considerations. And accommodations for future study were also made.

**Keywords:** Depths of processing, Vocabulary competence, Attitude, Action research

### 1. Introduction

Vocabulary teaching and learning constitute a major problem for EFL instructors and learners, although vocabulary knowledge is an important element in EFL acquisition and serves as the steady basis of and makes a significant contribution to these traditionally basic skills listening, reading, speaking and writing (Barrow, et al, 1999). Usually learners can increase their vocabulary knowledge formally in the classroom or informally through communicating with others in after-class hours. However, as a result of input-poor acquisition environment in China, mainly depending on explicit vocabulary teaching and learning in classroom is their sole option. Teachers become tired of pouring too much time and energy into teaching new words by explaining and providing examples, only to achieve unsatisfying outcome, and learners never feel encouraged when frequently encountering unfamiliar and less familiar words, much less do they have the passion and courage to use them in daily social conversations and exchanges in an appropriate way. In addition, given English language containing a wide range of word families--more than 54,000, which is a learning goal far beyond the reach of EFL learners or even native speakers, how to memorize more words and keep them longer in mind appears to be an immense and daunting task. Thus efficient and effective word teaching and learning deserves a "should-enjoyed" position, worthy of English language instructors' and learners' proper attention.

### 2. Problem and Hypotheses

For consideration of high efficiency of word memorization and retrieval, before action, a word memorizing strategy questionnaire is conducted among 39 Chinese university students in one freshmen non-English major class in order to be aware of what kinds of methods they used to adopt and how frequent they use them, implying certain underlying reasons that results in distressing situation in teaching and learning English words. The result is presented as follows:

Insert Table 1 Here

A conclusion can be drawn from responses to the questionnaire is that rote learning is still topping the list. Reading, spelling and writing repetition are mostly employed among students. That is to say, their processing of words is shadow processing, only stopping at a superficial level where gives much weight on pronunciation and form rather than meaning. In great contrast with these above high-frequency used strategies, learning by context, guessing, and even association, who are grouped as deep encoding, are almost neglected to some extent.

However, Craik & Lockhart (1972) proposed that the deeper a stimulus is processed, the more knowledge of target words is acquired, the more persistent the memory trace will be and naturally the longer the retention will be. Here "deeper" refers to a greater degree of semantic involvement. Also Zhang and Wu's (2002) study on depth of vocabulary processing reveals that word retention has close relation to deep semantic encoding instead of shadow form encoding. The learner is able to store and retrieve information depending on the degree to which the information is processed, and better learning will happen when a deeper level of semantic processing is conducted, endless yet simple repetition has no use. To be specific, learners, through semantic encoding, can find or create an association, such as similarities, distinctions or other types of links, between information in Short-term memory and information previously in Long-term memory which serves as schema. Therefore, learners come to learn to establish a web-like structure of association and consequently have a rather hierarchical, logical and elaborative mental lexicon containing a large

number of highly organized words stored in minds. According to spreading activation model (Carroll, 2000), the organization of mental lexicon is closer to a web of interconnecting nodes, the degree of accessibility of words is determined by both structural characteristics of taxonomic and considerations of association between related concepts. That is to say, the more closely the association is related, the more facilitative it is for successful vocabulary acquisition and production.

Therefore, the hypotheses of the study go: Do deep word processing strategies work effectively for the increase of learners' vocabulary competence? If so, will this increase change long-lasting negative attitudes both teachers and learners possess towards vocabulary learning?

### 3. Plan

This study, with problem and hypotheses at hand, is designed to last for 11 weeks and aims to stimulate learners' interest and motivation, foster learners' cooperative and independent learning spirits and develop learners' vocabulary competence. The 11-week period research plan are implemented as follows:

Insert Table 2 Here

### 4. Action

The 11-week action research is designed and conducted by the author herself for the purpose of testifying the hypotheses generated from that theoretical idea that deep word processing benefits the acquisition of words. 39 non-English major freshmen participated in the study and used *New Horizon College English (Second Edition)* as their English course-book. When a target word is taught by being put into a network made up of interrelated words, it is more easily stored in learners' mental lexicon (Ronald Carter, 1999). In this study, a combined mnemonics of shadow form encoding and deep semantic encoding will be adopted to prompt learners to learn what is meaningful for them and also to learn in ways that are meaning to them. Constructivist believes that knowledge is not passively received but actively built up by cognizing subjects, and cognition is adaptive and serves as the organization of experiential world (Von Glaserfeld, 1994). In the process of learning, learners practice deep word processing skills intensively and construct their own knowledge autonomously by anchoring new information to preexisting knowledge. Except for contextualizing word learning, the procedures of the study includes two more ones, de- and re- contextualizing word learning, compared with "learning in context"--- the most popular teaching/learning strategy at present, as the following figure1 shows.

Insert Figure 1 Here

Needless to say, learning does not take place in isolation. In learning process, learners interact with knowledge, learning environment, and more importantly, with peers. This has led to a favorable consequence not only based on individuals' past experience but also on the collective experiences of the learning community. As a result, in or out of context, they eventually build up their own word network in a personal level.

### 5. Results and Analysis

For testifying H1, vocabulary competence test adapted from Appendix II of *The English-Chinese Dictionary* (Lu Gusun, 2000) are employed twice before and after treatment, each time learners will be given 15 minutes to underline the known words (choosing one real words is given one point). The Appendix includes 10 word groups with each one having words ranging from Level 1 to Level 6. For consideration of time permitted, a word list of 100 items composed of words partly from Level 1 to Level 3 in Appendix and partly from CET4 and course-book are used as target words, in accordance with the participants' present overall proficiency level. Also, for the guarantee of validity of the study, the word list contains a mixture of real words and non-words (who do not exist and are formed by changing one or more letters from real words (e.g. *alleviate* became *alliviate*) (Nation, 1990), ensuring that it really measures what it wants to measure. The final results of pre- and post- test are listed in Table3.

Insert Table 3 Here

Table3 shows that the Mean score of post-test is 79.29, which is 0.53 higher than that of pre-test, and that the Std. Deviation of the post-test is 0.03 lower than that of pre-test, testifying that the hypothesis of deep word processing improving learners' vocabulary competence is proved to be true.

In addition, both student interview and teacher log provide a rich source for the issue that some positive attitude changes of teachers and learners do appear after deep word processing strategy teaching. See Extract 1 to 2 from student interview.

**Extract1:** *Memorizing words has been a headache for me and I'm tired of it. But sometimes when I see other students working carefully and actively, especially our group leader, I gradually realized that it's not because I lack aptitude to learn language but the interests and motivations.*

**Extract2:** *Initially, I would rather mechanically remember these words. Of course, I suffered a lot. It is so frustrating*

*that you can recall only a few words you've been trying to remember. But when I understand how this strategy works, I think, maybe it is not a waste of time, I think I will try.*

The above attitude changes of learners are the result of the benefits deep word processing strategies brought about, which significantly enhances learners' self-efficacy, self-esteem and cooperation spirits. (See Extract 3, 4 and 5)

**Extract3:** *By using the way of deep processing, we can relate new words with other familiar words, thus to enlarge our lexical size and help us to store more words and have an access to words easily and effectively.*

**Extract4:** *We can have a deep impression of the new word after group discussion. I like this way, although sometimes we are talking with each other instead. Learning one word means learning a group of relevant words, how fascinating it is and it is helpful to memorize more words and keep it longer.*

**Extract5:** *I like learn something meaningful for me. I dislike boring classes. I feel writing or speaking based on my personal life is a good way to capture our interests and learn actively. But using more new words seems to be a challenge.*

From the interview we can see that learners are more willingly and autonomously learn words than what they used to be, and tend to gradually construct their own web-like word networks by various means of deep processing. However, some problems rising in the learning process should be paid more attention to. Some learners are worse involved in classroom activities and achieve less than others, some learners feel a bit difficult to handle some tasks, such as topic-based semantic network building, new and old semantic network connecting, experience-based writing or speaking, etc., all of which are also mentioned in the following teacher log.

*The results are as expected. I'm encouraged a lot and have greater drive. Changes are happening unnoticeably. They are no longer overwhelmed by lack of confidence and become more active in classroom engagement, showing great interests in word learning. And another encouraging finding is some of them are apparently friendly and open to me during class break, which, I think, maybe is a chance to stimulate others more positively.*

*In today's class, the result is not as good as what happened in last class. The task seemed too hard for them to tackle. It is wiser to alter the original plan by giving more hints, observing first and imitating later or changing improvising speaking for text retelling, etc., in order to make it suitable for learners' level.*

## 6. Reflection

After all the efforts the author made, conclusions can be drawn that are derived from the results of action research. As is shown, two hypotheses are proved to be true, thus it is testified that deep word processing is a powerful strategy for vocabulary acquisition, facilitative for increase of learner's vocabulary competence and enhancement of learners' and teachers' positive attitude change. However, reflective activities serve as a tool for helping to deepen one's understanding of the complexities of an instructional problem, which has led to the following points to be taken into consideration:

- 1) Although deep word process strategy is taught explicit in classroom setting, teachers can not install this idea into learners' mind directly. On the contrary, teachers should exert a subtle influence on learners to help them to weave new lexical items into preexisting lexical network in their mental lexicon through learning in context.
- 2) Provide learners with more word production opportunities like speaking and writing to practice new words and chunks learned in- or out-of- class reading.
- 3) Deep word processing strategy should be used in combination with other word learning strategies and not be overused, requiring that teachers are able to identify learners' needs and strategies they have already used to diagnose and guide learners' strategy use, and furthermore, indicating when to use it and how to keep balance is a topic for future study.

Of course, there are still some issues hard to express clearly when thinking of the complexities, even though deep word processing is proved to be beneficial to both vocabulary competence and active attitude enhancement. Given limited scale and time, future researches are expected to give much attention to these issues.

## References

- Barrow, J., et al. (1999). Assessing Japanese college students' vocabulary knowledge with a self-checking familiarity survey. *Systems*, 27, 223-247.
- Carroll, D.W. (2000). *Psychology of language*. Beijing: Foreign Language Teaching and Research Press.
- Carter, R. (1999). What is "knowing a word" in vocabulary teaching (translated by Zhu Jialing). *Foreign Language Teaching Aboard*, 2, 19-20
- Craik, F. M. & Lockhart, R.S. (1972). Levels of processing: A framework for memory research. *Journal of Verbal Learning and Verbal Behavior*, 11, 671-684
- Li, Xiao. (2007). Assessing the roles of breadth and depth vocabulary knowledge in second language proficiency.

*Foreign Language Teaching and Research*, 5, 352-359

Lu, Gusun. (2000). *The English-Chinese Dictionary*. Shanghai: Shanghai Translation Press.

Nation, I.S.P. (1990). *Teaching and learning vocabulary*. Boston: Heinle & Heinle Publishers.

Sun, Lan. (2006). Modality effect of L2 lexical access. *Foreign Languages in China*, 3, 45-49

Von Glaserfeld, E. (1994). Constructivism in Education. In T. Husen & N. Postlewaite(Eds.) *International Encyclopedia in Education [Suppl.]*. Oxford: Pergamon Press,

Zhang, Qingzong. & Wu, Xiyan. (2002). Depths of processing and L2 vocabulary learning. *Modern Foreign Languages*, 2, 176-186

Table 1. A Survey of Basic Vocabulary Learning Strategies Used by Students

	Strategy	Ratio (%)		Strategy	Ratio (%)
1	Read repeatedly	84.5	7	Guessing	25.8
2	Write repeatedly	45.8	8	Association	8.4
3	Word formation	33.7	9	Review regularly	56.8
4	Synonym or antonym	37.6	10	Practice	96.7
5	Use context	23.4	11	Error analysis	40.6
6	Use dictionary	35.9			

Table 2. Schedule for Action Research on Deep Processing Vocabulary Teaching

	1	2	3	4	5	6	7	8	9	10	11
Consciousness-raising lecturing	V										
Contextualizing word learning		V	V	V							
De-contextualizing word learning					V	V					
Re-contextualizing word learning							V				
Extra-curriculum reading								V	V		
Improvising speaking										V	
Vocabulary competence pre-test	V										
Vocabulary competence post-test											V
Student interview											V
Teacher log	V	V	V	V	V	V	V	V	V	V	

Table 3. Statistics of Pre-test and Post-test

	N	Mean	Std. Deviation
Pre-test	39	78.76	5.45
Post-test	39	79.29	5.42

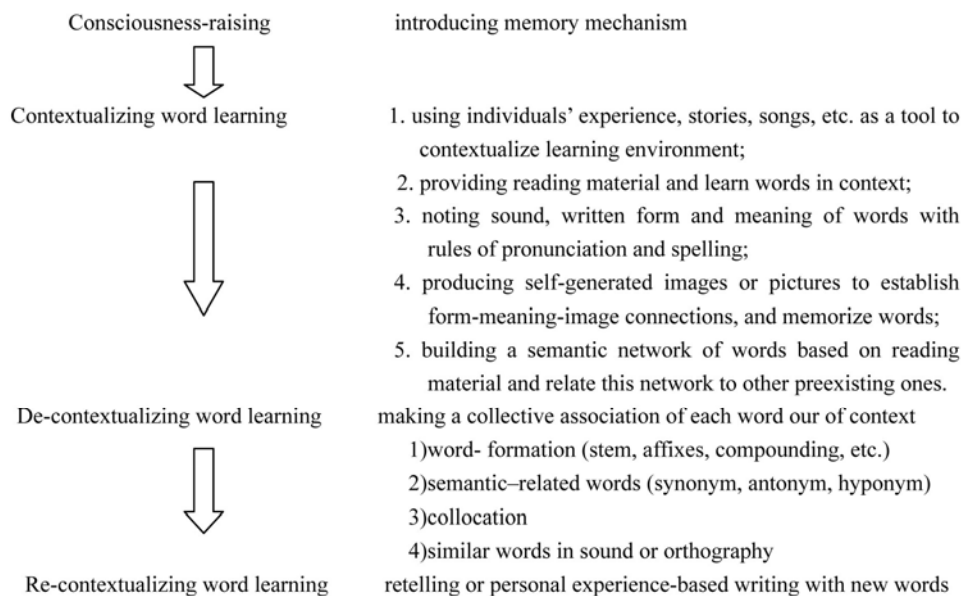


Figure 1.