An Analysis of English Vocabulary Learning Strategies used by Senior Students in Hainan Lingshui Middle School of China

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Abstract: *This study aims to investigate which vocabulary learning strategy (VLS) is most frequently used in learning English by Chinese senior students at Hainan Lingshui Middle School, and how they learned the most frequently used strategy. In addition, the study compares the use of VLS between science and arts students, and between high and low achievers. A mixed-methods research approach was used employing a questionnaire, semi-structured interviews interviews, and journal as the instruments. The findings of the study show that the strategy of memorizing the meanings and pronunciations of new words is most frequently used by the students. The most frequently used strategy by the students is in three main situations: formal, informal, and unspecified. Additionally, science and arts students have similar patterns in using VLS; however, significant differences were found among the use of three categories of VLS, namely Cognitive, Memory, and Meta-cognitive strategies, between the high and low achievers. There were no significant differences found in using social strategies between the high and low achievers.*

Introduction

All learning skills, which are reading, writing, listening, and speaking will be muddied or poorly understood without a good working knowledge of words. Learning vocabulary is, therefore, a basic and indispensable pathway for learning any language, English included. Vocabulary learning strategies (VLS) are no doubt an effective tool for success in acquiring new words and they have been investigated and studied by various researchers for several decades (Erten & Williams, 2008; Fan, 2003; Gu & Johnson, 1996; Lawson & Hogben, 1996; Schmitt, 1997). Nation (2001) concluded that VLS are more actions, knowledge and learning methods for learner to train and increase the efficiency of vocabulary learning and using. Erten and Williams (2008) also defined that the area of VLS which is no exception as the effectiveness of strategies for learning new words. VLS as steps are taken by learners to acquire new English words (Asgari, 2011).

Gidey (2008) stated that the main usefulness of VLS is to aid students to have control over their acquisition of vocabulary and make them more responsible for their vocabulary learning. It is believed that effective English VLS enables students to improve their English proficiency, so that they can make more progress in English learning (Hsiao, 2008). Peng (2009) investigated the use of English vocabulary learning strategies and found that they help Chinese senior high school students in Guangxi Province to improve their English proficiency, allowing them to make greater progress in learning English in college and/or university. The conclusion of Yao's study (2011) asserted that the appropriate use of VLS encouraged students to learn, and helped teachers teach English vocabulary in the English program (EP) at Chonkanyanukoon School in Chonburi, Thailand.

As a result, for students learning English vocabulary, the awareness of VLS can assist them in successfully learning and retaining new English vocabulary. The information from a previous

investigation on VLS can provide insights to teachers to better prepare students with the use of appropriate strategies for their individual learning approaches. The research outcome of Oxford (1990) described that the best language learning students have used strategies, ranging from naturalistic language practice techniques to analytic and rule-based strategies. Investigating VLS helps learners find the advisable strategies for learning vocabulary to better their English efficiency, and also helps language teachers to arrange their teaching approach to suit their students' learning styles. Consequently, appropriate VLS is hoped to make students' English language learning to be both more efficient and more effective.

However, after reviewing the related literature, even though learning vocabulary is considered a significant skill in English language learning in China, the problematic situation of English vocabulary learning in China is alarming. Liu (2010) summarized three causes of this problem: 1) as there is limited systematic research in vocabulary learning and teaching, teachers do not use many VLSs in English teaching; thus, vocabulary teaching methodology is not changing much; 2) students do not know many efficient VLSs in learning new words, and positivity is lacking in their studies; and 3) students' abilities in learning English have not been stimulated and they need more directions of VLS in how to learn English vocabulary. According to the Chinese Ministry of Education (MOE) (2003), senior high school students need to understand and master not only three thousand words, and four hundred idioms or phrases, but also the different functions, intentions and attitudes of the words, as well as the semantic changes and production of the new words. This brings about the focus of this study, which aims to investigate use of VLS among senior high school students. The knowledge of specific VLS applied to English language learning by the senior students will undoubtedly provide the teachers with ideas to employ different strategies in vocabulary teaching and encourage their use both in and out of the classroom for future English language learners. Furthermore, the study may attract more attention by researchers to investigate vocabulary learning strategies among different levels of learners in Hainan, China, so as to improve English teaching and learning in Hainan. The investigation is expected to answer the following specific research questions:

1. Which vocabulary learning strategies are most frequently used by senior students at Hainan Lingshui Middle School?

2. How did the students learn the most frequently used vocabulary learning strategy?

3. Is there a significant difference in using vocabulary learning strategies between arts and science students?

4. Is there a significant difference in using vocabulary learning strategies by high and low achievers?

Framework of the Study

According to the inventories of literature review for vocabulary learning strategies (VLS), there have been a number of research studies on VLS over the last several decades. Four areas of VLS are Cognitive strategies, Memory strategies, Social strategies, and Meta-cognitive strategies, which have been mostly utilized as the main conceptual framework in previous research. The researcher is not only interested in investigating about how these four categories of VLS are used by senior students, but also in comparing whether there are differences in the use of these four categories of VLS by senior arts and science students, with high and or low academic achievement levels. Thus, the researcher believes that all of the variables of the study play significant roles in the hypotheses of the study. The detailed variables are as follows:
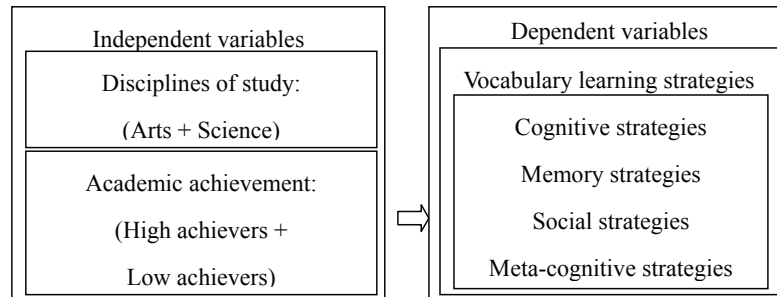
Figure 1: Diagram of the variables of this study

Research Methodology

An explanatory sequential mixed research method (Creswell & Plano Clark, 2011) is implemented in this study. The study first started using quantitative research method employing a questionnaire as the main instrument and then the collected information was analyzed using the Statistical Program Package. After that, qualitative data was elicited through a semi-structured interview and observation, and the resulting transcribed interview and journal entry, were analyzed by means of content analysis.

Firstly, according to the Krejcie and Morgan's (1970) sample size estimation formula, 279 senior students as the sample group were selected from the population of the study comprising 1,020 senior high school students studying in grade 12 in the arts and science disciplines at Hainan Lingshui Middle School, Hainan Province, China.

Secondly, a questionnaire, adapted from the inventories of language learning of Oxford (1990), Gu and Johnson (1996), and Schmitt (1997), was employed as the core instrument to gather information about the use of vocabulary learning strategies for the senior students. The first three sections of the questionnaire focused on the participants' background information. The second part comprised a 55 four-point Likert scale question items that were categorized into four groups of VLS: Cognitive strategies, Memory strategies, Social strategies, and Meta-cognitive strategies. The final section covered four open-ended questions about eliciting more information of the students' opinions and experiences in VLS. In order to assure the content and language validity of the research instruments, three English language experts in English language teaching at Burapha University and two experienced Chinese teachers were invited to evaluate the question items by using the Item-Objective Congruence Index (IOC). Then, the Chinese version of the questionnaire was pilot tested on thirty Hainan former senior students who were freshmen in a university or college in September 2012 to check the reliability of the questionnaire. As a result, the validity (IOC=0.92) and reliability (Cronbach's Alpha= 0.875) values of the questionnaire showed that the questionnaire was a trustworthy instrument.

Thirdly, after developing and trying out the questionnaire, it was distributed to 279 samples (comprising 167 science and 112 arts students, and 140 high achievers and 139 low achievers) during the self-study time in the evening with the help of the local teachers from August 26 to September 6, 2013. The questionnaires were returned within approximately one hour from each classroom, and each questionnaire was marked with a specific number matching their achievement scores and clearly indicating the discipline of each student. Finally, after the questionnaires were collected and the data related to the research questions were analyzed by the Statistical Program Package for means, standard deviations, frequency, and t-test on p-value for examining the differences of VLS used between the two sets of samples from this study.

As for the qualitative approach, first, 14 students out of the 279 samples who responded and shared their own opinions in the open-ended questions section of the questionnaire were identified as informants. After that, the researcher conducted semi-structured interviews from September 9th to the 17th, 2013 to explore how the students acquired the most frequently used VLS. During this period, the journal entries as the supporting data including the reflection and other happenings during the data collection process were recorded daily by the researcher after two interviews. The data from the interviews and the journal entries was analyzed qualitatively through content analysis by the following steps: translating, transcribing, coding, categorizing, and interpreting to describe how the most frequently used strategy was learned.

Research Results

With reference to Research Question 1,"Which vocabulary learning strategy is most frequently used by senior students at Hainan Lingshui Middle School?", it shows that item 20 (I often memorize a new word through its meaning and sound first) under the category of Memory strategies was rated the most frequently used as it received the highest mean score of 3.35. From the statistical comparison, it is obvious that the most frequently used vocabulary learning strategy respondents are concerned with meaning and sound memorization. However, in terms of each particular strategies category, the results of the study also revealed that the Cognitive strategies (=2.33) were the most frequently used among the four categories.

To address Research Question 2, "How did the students learn the most frequently used vocabulary learning strategy?", it was found that the informants specifically stated the three situations of learning that they acquired of the most frequently used strategy, namely: the formal teaching-learning situations (from tutor, school, English teacher), the informal learning situations, such as radio or favorite media, and family members, and the unspecified situations.

According to Research Question 3, "Is there a significant difference in using vocabulary learning strategies between arts and science students?", it was revealed that no significant difference in using vocabulary learning strategies existed between science and arts students. According to Wetcher-Hendricks (2011), if a p-value of a statistical test is larger than the specified alpha value (), this indicates that there is no significant difference. Table 1 indicates that the p-values of the four categories of strategies are all more than.05, which means that the arts and science students employed similar VLS in learning English. The details of Table 1 are shown below:

Table 1: Comparison of the VLS used between science and arts students

Strategy	Discipline	$\bar{x}$	SD	t	p
Cognitive	Art	2.34	.31	-.62	.53
	Science	2.32	.31		
Memory	Art	2.20	.37	-.60	.54
	Science	2.23	.36		
Social	Art	2.15	.42	.49	.61
	Science	2.12	.41		
Meta-cognitive	Art	2.23	.42	-.69	.48
	Science	2.26	.39		

Concerning Research Question 4 "Is there a significant difference in using vocabulary learning strategies by high and low achievers?", it was disclosed that a significant difference in using three categories of VLS (Cognitive, Memory, and Meta-cognitive strategies) existed between the high and low achievers ($p<.05$). However, no significant difference was found in using Social strategies between high and low achievers ($p>.05$). The details from the t-test for the high achievers and low achievers are presented in Table 2:

Table 2 Comparison of the VLS uses between high and low achievers

Strategy	Achievement	$\bar{x}$	SD	t	p
Cognitive	Low	2.28	.28	-2.6	.00
	High	2.38	.34		
Memory	Low	2.17	.31	-2.10	.03
	High	2.26	.41		
Social	Low	2.16	.41	-1.95	.06
	High	2.18	.45		
Meta-cognitive	Low	2.17	.33	-3.17	.00
	High	2.32	.45		

Discussion

It seems that the strategy of memorization on the meanings and sounds of words is as expected, the most frequently used strategy by the senior students because the essential part of a language is a word. There is no doubt that the meanings and pronunciations of words memorization was rated the highest, similarly with many learning outcomes discovered by many researchers (Irvin, Buehl & Radcliffe, 2007; Kuiper & Allan, 2010; Radford, Atkinson, Britain, Clahsen & Spencer, 2009). At the time when learners begin to learn a language, the meanings and pronunciations of the words are the essential unit of a language that has to be mastered first. As a consequence of the experiences, Cognitive strategies are also found to be the most frequently employed by the senior students among all categories. It is interesting to point out that the students in this study were found applying more single-action learning strategies directly related to the meanings and sounds of words, such as dictionary strategies, similar meanings and sound strategies, and less on the multi-action. This implies that the senior students might be more confident in using dictionary strategies for discovering the meanings and sounds of words. Similarly, the dictionary strategies were proved to be most commonly used by learners of various studies (Alfredo, 2006; Gu & Johnson, 1996; Peng, 2009; Zhang's, 2011). This is perhaps because the dictionary strategies can help students discover the form of vocabulary without asking for assistance from others. When students fail to remember the meaning and sound of the word they have learned before, the strategies of using a dictionary may make the students feel more secure than asking help from others, which might cause embarrassment.

The research reflects the issue that formal situations (tutors, teachers, and schools) are employed by the informants for memorizing the meanings and pronunciations of words. This might be because tutors, teachers, and schools give students more reliable and convincible opinions. The second issue is related to informal learning situations (family members, favorite activities via media) used by some students for memorizing the meanings and pronunciations of words. It might be because family members and favorite activities via media are positive support expressing better learning motivation to learners. The final unspecified situation revealed that it might be because some students are attracted by other appropriate VLS rather than the strategy of memorizing the meanings and sounds of words.

An unexpected result is revealed that the science and arts students have similar patterns in using VLS. This might be because the teaching programs of the English curriculum in teaching the senior students in the school of the two disciplines are the same, but taught by different teachers.

As the results show, it is not surprising that the high achievers more frequently employed three categories of strategies (Cognitive, Memory, and Meta-cognitive) than the low achievers; however, it is worth asking why both high and low achievers used Social strategies similarly. The similar findings of Alfredo (2006) reported that asking native speakers about the meanings of words was the strategy less commonly used by the learners. Kafipour and Naveh (2011) also summarized that Social strategies were found as the least commonly used. It is not surprising about the situations of Social strategies, which require interactions with unfamiliar people, like native speakers, or communication in English, and doing extra work with others, would cause more anxiety to Chinese students. Thus, both the high and low achievers in this study employed Social strategies less than other categories. The reasons can be: (1) they have never been encouraged to communicate in English by their teachers; (2) all of them might have never been taught how Social strategies could help them learn vocabulary; (3) they hardly ever have opportunities to speak English with others people especially unfamiliar ones or native speakers, even the high achievers; and (4) they might be rarely encouraged to use Social strategies in English classes.

Limitations of the Study

The sample of the study, which is restricted to the senior students in Hainan Lingshui Middle School of China, might not be considered to be generalizable representing the overall senior high school students in Hainan, China. The four categories of VLS (Cognitive, Memory, Meta-cognitive, and Social strategies), as a limitation, might not adequately represent the overall VLS. Additionally, according to the students' suggestions in the open-ended questions of the questionnaires, the 55 question items of the questionnaire are also a limitation, and might not be adequate to represent all the VLS strategies.

Recommendations

The participants' reflection in the open-ended questions show that they would like to use VLS a lot and know more about the application of useful VLS in and out of class. Some students expressed that the VLS were not taught in the English class. To promote and build up vocabulary learning strategies, all language teachers are suggested to focus on vocabulary learning strategies at all levels. The more effective vocabulary teaching strategies are, the more satisfying progress is created (Burns and Sinfield, 2012). Thus, teachers should be recommended to introduce more optional VLS to subsequent senior students, and be more responsible to guide students to use appropriate VLS in order to help students make more progress. In the statements from the students' responses, it is recommended that teachers should be more active in encouraging the low achievers to use more VLS in learning English, especially Cognitive strategies, Memory strategies, and Meta-cognitive strategies, which are effectively used by the high achievers.

Finally, this study used the vocabulary learning strategies of senior students in Lingshui Middle School of China. Thus, in order to be able to be more generalizable, more extensive samples are recommended for further study, including senior students from different settings (different schools or provinces), and samples from different levels and gender. More VLS items are also recommended in future questionnaires. Comparisons among more sets of sample groups, such as gender and age, in the four VLS categories are further recommended.

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