Exploring Students’ Adoption of Vocabulary Learning Strategies - A study of English majors at a university in China

Hu Xu
EN2460
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School of Teacher Education
Kristianstad University
Tutor: Carita Lundmark
Abstract

As fundamental components of a language, words are essential for successful language learning. Vocabulary learning strategies thus become a vital important field to be focused on. This investigation is based on the framework of O' Malley and Chamot's (1990) taxonomy about language learning strategies, which include metacognitive strategies, cognitive strategies, and social/affective strategies. This study aims at studying the relationship between students' attitudes toward vocabulary learning, their vocabulary learning strategies and their vocabulary level. The participants of this study are fifty English majors from a university in China. A vocabulary test and a questionnaire are used so as to collect data from the investigated students. Finally, this study generates the following results: (1) the students hold a neutral attitude toward vocabulary learning, and they believe vocabulary learning sometimes is interesting, but sometimes not; (2) the students adopt all the three strategies, but cognitive strategies are most frequently used; (3) the correlation analysis shows that there is a significant relationship between the students' attitudes and their strategy use, the strategy use and their vocabulary level; (4) the successful learners are more positive as regards English vocabulary learning, and adopt learning strategies more frequently than less successful learners. Based on the findings of the investigation, some pedagogical implications are provided to suggest teachers encourage and help students to hold an active and positive attitude toward English learning, and introduce more learning strategies to promote the students' English acquisition.

Key words: vocabulary learning strategies; metacognitive strategy; cognitive strategy; social/affective strategy
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1. Introduction

It is words that constitute the fundamental component as well as the essence of any language. Nation has put forward that both learners and researchers have considered vocabulary as a very crucial, if not the most crucial, element in language learning (1990). Moreover, Wilkins even agrees that very little can be conveyed without grammar, but nothing can be expressed without vocabulary (1972). Therefore, it is safe to say that vocabulary plays a central role in language acquisition, and without the knowledge of words, one will become a failure in the second or foreign language learning. Correspondingly, in the process of the second or foreign language learning, lexical strategies that language learners employ so as to learn and remember the information about the new words become increasingly important. Oxford indicates that generally, language learning strategies are being widely paid attention to throughout the education (1990).

Similarly, in the field of English language learning, without a good mastery of vocabulary, other parts, such as listening, reading and writing, will turn out to be castles in the air. There have been some research studies conducted by several scholars to examine the vocabulary learning strategies adopted by language learners, such as Parry (1991) and Harley (1996). However, little attention has been paid to the language learners’ attitude towards vocabulary learning by the scholars before researching the learners’ utilization of lexical learning strategies. There are great differences among different language learners in their attitude of learning vocabulary as well as the strategies they use to enlarge their vocabularies. Therefore, in order to study how Chinese college students view English vocabulary learning and how they deal with it, a detailed and relatively comprehensive picture is required. Furthermore, understanding what strategies the Chinese college students employ in English vocabulary learning also makes a contribution to the improvement of vocabulary teaching. Thus on this issue, this research can promote both vocabulary learning and teaching.

1.1 Aim

The aim of this study is to investigate the relationship between students' attitudes toward vocabulary learning, their vocabulary learning strategy use and their vocabulary level. To be specific, the first step is to investigate Chinese English majors’ general attitude towards English vocabulary learning; second, to study English vocabulary learning strategies adopted
by Chinese English majors; third, to see whether there is any correlation between their attitudes and their strategy use, the English vocabulary learning strategy use and their vocabulary level; fourth, to see whether there is any difference in English vocabulary learning strategies used by high-score students and low-score students. Based on the analysis and findings, this study attempts to offer some pedagogical implications for English vocabulary teaching.

1.2 Method and Material

In order to collect ample and reliable information and data, this study includes one vocabulary test and one questionnaire for the students majoring in English in a Chinese university. Fifty students are asked to participate in the vocabulary test and the questionnaire for collecting information. Through the detailed analysis and comparison of the students’ responses to the test as well as the questionnaire, this study attempts to reach a sound conclusion. Detailed information about the material and method in this study will be shown in the following subsections.

1.2.1 Participants

Fifty freshmen of English majors in a university in China were involved in this investigation. All of them are native Chinese speakers with some experience in vocabulary learning, because as freshmen, they have had 6 years of English learning experience in secondary school, and are going to finish their first year’s learning as English majors. Thus as far as their English learning experience is concerned, they should have acquired a relatively large amount of language knowledge and have mastered some strategies in coping with English vocabulary learning, all of which will make the results of the study more reliable.

1.2.2 The vocabulary test

In order to test the students’ lexical level, as well as to have some practical knowledge of the students’ adoption of strategies in vocabulary learning, a test of vocabulary (see appendix 1) was conducted. The vocabulary test was adopted from the TEM-4 paper in 2010. TEM-4 stands for Test for English Majors, which is one of the authorized tests for English majors in China, and it is organized and administered by the Department of Higher Education, the Ministry of Education of the People's Republic of China. In addition, in most of the universities in China, the performance of the English majors is highly connected to their graduation. Furthermore, choosing the test in 2010 is because it is the latest version so that it
can test the students' vocabulary knowledge in a better way. For example, the vocabulary in this test might be more familiar and more frequently encountered by students in their daily study than those in the early version of the tests. Thus it should be an effective test to evaluate the students’ English level including their vocabulary level.

The subjects are required to write down their names in the first type of test so that the results can be compared with their vocabulary level, because the fourth step is to investigate the differences in English vocabulary learning strategies used by high-score students and low-score students. However, when their data is put into the computer, their names are replaced by serial numbers and I am the only person who has access to the data, and their anonymity is protected. The main body of the test consists of 30 multiple choices, and one point for each item. Thus the total grade of the vocabulary test is 30. The test was conducted in the classroom and the time for the test is 20 minutes.

1.2.3 Questionnaire

The questionnaire (see appendix 3) made for this investigation is based on Gu and Johnson (1996) who have done similar studies about vocabulary learning strategies, but it is adapted in accordance with the framework of O’ Malley and Chamot’ s (1990) taxonomy about language learning strategies, including metacognitive strategies, cognitive strategies, and social/affective strategies. In addition, in order to make the students understand the items in a more convenient and easier way, Chinese annotation of some words in the questionnaire given to the students are available. The questionnaire involves two sections. Section one shows the instructions, in which the information, such as major and class are required. In addition, it also emphasizes that there is no fixed or expected answer to each of the questions because it is not a test. It also stresses that they should make a response that can truly reflect their real thoughts and situation, and moreover, their answers will not be marked and be taken into consideration while evaluating their tests.

Section two is the main body of the questionnaire. It includes a total of 35 items. The first five questions aim at exploring the students’ attitude towards vocabulary learning. Those who hold a positive attitude will consider vocabulary learning as a creative as well as interesting activity, whereas those who hold negative views will regard vocabulary learning as a monotonous and mechanical process. To be specific, question 1 asks the students whether they think vocabulary learning is a mechanical activity or not; question 2 deals with repetition
which indicates monotonousness and tediousness, and asks the students whether it is the key to remember new words; question 3 indicates whether the students view vocabulary learning as a creative activity; question 4 copes with the students interest in vocabulary learning; question 5 indicates whether the students derive pleasure from the vocabulary learning. The next 30 questions involve various English vocabulary learning strategies. In fact, a total of 30 English vocabulary learning behaviours are identified so as to represent three major strategies: metacognitive strategies, cognitive strategies and social/affective strategies.

Moreover, metacognitive strategies include learner autonomy, planning-making, selective attention, as well as reviewing and testing; cognitive strategies include memorization, guessing, dictionary use and note-taking; social/affective strategies include affective control and social activities. Thus, there are altogether 10 categories. Three items are designed for each category in order to find out whether the students adopt some specific strategy or not. Thus, questions 6 to 8 are designed to investigate the strategy of learner autonomy; questions 9 to 11 are designed to study the strategy of planning-making; questions 12-14 are designed to study the strategy of selective attention; questions 15-17 are made to investigate the strategy of reviewing and testing; questions 18-20 are made to study the strategy of memorization, and they are further divided into repetition, association and grouping, thus item 18 is for repetition, 19 for association and 20 for grouping; questions 21-23 are designed to study the strategy of guessing, and they are further divided into using back-ground knowledge and using linguistic cues. Items 21 and 22 are for the strategy of using background information, while item 23 is for the strategy of using linguistic cues; questions 24-26 are designed to investigate the strategy of dictionary use, which are further divided into looking-up strategies and dictionary use for comprehension. Item 24 is for the former, and items 25 and 26 are for the latter; question 27-29 are designed to investigate the strategy of note-taking, which are further divided into meaning-oriented, note-taking strategies and usage-oriented, note-taking strategies. Items 27 and 28 belong to the former strategy while item 29 is for the latter strategy; questions 30-32 are designed to investigate the strategy of affective control; questions 33-35 are designed to investigate the strategy of social activities.

The questionnaire uses a 5-point scale rating system. The points stand for the following: ‘5’ refers to ‘Absolutely Agree’; ‘4’ refers to Basically Agree’; ‘3’ refers to ‘sometimes yes and sometimes no’; ‘2’ refers to ‘Basically Agree’; ‘1’ refers to ‘Absolutely Disagree’. The
participants are required to choose the option that best represents their thoughts and behaviors.

1.3 Procedures

This investigation was conducted through a systematical and carefully designed procedure. With the convenience of the internet, the test and the questionnaire were sent by e-mail to my friend who is a teacher in a Chinese University. Two classes including a total of fifty-six students in English major were selected to take the test and do the questionnaire, but six of them were absent, thus the investigated subjects are fifty freshmen in English major. With the help of the teacher, the students were gathered in the classroom to take the test and the questionnaire within the time limit. The students were first asked to take the test, and then were required to fill in the questionnaire to find out the English vocabulary learning strategies they use in their lexical learning. After collecting all the responses to the test and to the questionnaire, the information was to be sent to the researcher via e-mail again for analysis. In addition, the SPSS (Statistic Package for Social Science) program was used as an instrument to do statistic analysis.

2. Theoretical Background

Serving as the basis for the following analysis and discussion, the theoretical background information will be introduced in this section. To begin with, it will focus on the importance of vocabulary knowledge in language learning. In order to have a good mastery of vocabulary, it is better for the learners to know about different learning strategies. Therefore, definitions and classifications of learning strategies will be explored in this section. Among various learning strategies, three types of learning strategies: metacognitive strategies, cognitive strategies and social/affective strategies established by O’Malley and Chamot (1990) will be chosen as the framework for the classification of learning strategies for this research. Thus, detailed information about these three specific strategies, such as their definitions and classifications, will also be included in this section. At the end of this chapter, relevant research on vocabulary learning strategies will be presented.

2.1 The importance of vocabulary knowledge in language acquisition

Vocabulary plays a central role in language learning. McCarthy (2001) points out that vocabulary constitutes the largest part of the meaning of the languages, and that vocabulary
also becomes the problems for most language learners. Thus vocabulary learning is at the heart of learning a second or foreign language. In addition, vocabulary also makes a contribution to achieve meaningful communication. Meara (1996) argues that vocabulary competence plays the most essential role in communication. This is particularly true, because however good at grammar or pronunciation, learners will not have a meaningful communication with others if they lack a certain command of vocabulary. Communication can be frequently interfered with, and moreover, it will be easily broken down when people do not use words properly or lack key words in their expressions.

Furthermore, McCarthy (2001) even remarks that the comparatively successful language learners are those who have developed techniques as well as disciplines for vocabulary learning, for example, keeping a notebook, using a dictionary frequently and properly or keeping reading much out of class. Therefore, this indicates that it is of vital importance for students to enlarge their vocabularies on their own, because it is understandable that the students cannot acquire all the vocabulary they need all at once in the classroom. However, in other words, it is the teachers' current task to aid students to acquire vocabulary on their own. Thus, the need for the teacher to teach vocabulary learning strategies in the classroom again evidently reflects the importance of vocabulary knowledge in language learning. The vocabulary is so essential that it will become of great significance for us to continually explore its learning strategies.

2.2 Definition of learning strategies

According to Ellis (1997), the opinions about learning strategies came into being in 1956 when Blunna put forward "cognitive strategy". However, in recent literature, there are different opinions among different researchers about the definition of learning strategies. According to Ellis (1997), different definitions of learning strategies from different researchers can be seen in Table 1 which is cited and adapted from Ellis (1997).
<table>
<thead>
<tr>
<th>Source</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weinstein and Mayer: 1986</td>
<td>Learning strategies refer to the behaviours as well as thoughts that the learners undertake during the learning which is intended to affect the learners’ encoding process.</td>
</tr>
<tr>
<td>Chamot: 1987</td>
<td>Learning strategies are referred to as techniques or actions taken by the students so as to facilitate their learning, to remember linguistic and content information in a better way.</td>
</tr>
<tr>
<td>Rubin: 1987</td>
<td>Learning strategies make contribution to the development of the language system that the learners construct and also influence their learning directly.</td>
</tr>
<tr>
<td>Wenden: 1987</td>
<td>Learning strategies, first, are language learning behaviours that the learners employ to learn a second or foreign language; second, they are referred to as what the learners know about the strategies they adopt; third, they also refer to what the learners know about aspects of their language learning.</td>
</tr>
<tr>
<td>Oxford: 1990</td>
<td>Learning strategies are certain behaviours the learners take in order to make their learning much more successful as well as enjoyable.</td>
</tr>
<tr>
<td>O’Malley and Chamot: 1990</td>
<td>Learning strategies refer to special actions or thoughts that the language learners possess so as to make them understand and grasp new information better.</td>
</tr>
<tr>
<td>Cohen: 1998</td>
<td>Learning strategies are referred to the learning process that the learners consciously take, and they also encompass both the language learning strategies and use strategies.</td>
</tr>
</tbody>
</table>

From the above-cited definitions, we can see that the definition of learning strategies are...
various among different researchers. Generally speaking, they are incomplete definitions, because their focuses are different. Some perceive the strategies as behavioral, while some consider them as mental, or as both. For example, both Wenden (1987) and Oxford (1990) consider learning strategies as language learning behaviours the learners take so as to learn a second or foreign language, while Cohen (1998) believes that learning strategies are the process that the learners consciously take, and in addition, both Weinstein and Mayer (1986) as well as O'Malley and Chamot (1990) agree that learning strategies are special actions or thoughts the learners possess in their learning process. Hence, in order to find one of the best ways to define learning strategies, Ellis (1997) tries to list the main characteristics of the strategies, and the following list of the characteristics of the strategies is based on Ellis (1997):

(1) Strategies are regarded as including both the general methods and specific behaviours used in order to learn L2.
(2) Strategies are used to solve problems.
(3) Generally speaking, language learners know what strategies they are using while learning the language, and if they are required to concentrate on what they are thinking or doing, they can, to a great extent, identify how the strategies are constituted.
(4) Strategies include both the linguistic and the non-linguistic behaviours.
(5) Some strategies are mental whereas some are behavioral. Thus some strategies that are used by the students may be noticeable, while others are not.

Thus, according to these characteristics, we can see that the definition given by O'Malley and Chamot (1990) is comparatively much easier, clearer and also more comprehensive for people to understand, because they definitely and briefly point out that learning strategies are special actions or thoughts the learners possess in order to understand new information better. As a matter of fact, language learning strategies can be concluded as certain behaviours, steps and actions that the language learners take so as to promote their language learning, and moreover, they also encompass the language learners' knowledge about languages as well as some elements that have influence on language learning.

**2.3 Categories of learning strategies**

With the rapid development of research, more people become curious to know about the relationship between different language learning strategies. Thus many scholars begin to focus on this issue and make attempts to put forward different classifications of the learning strategies, such as Rubin (1987), Oxford (1990), Stern (1992) and Ellis (1994). In what follows, the four most well-known taxonomies, namely, those of Rubin's (1987), Oxford's (1990), Cohen's (1998) and O'Malley and Chamot's (1990) will be dealt with.
To begin with, Rubin (1987) proposes two primary categories of learning strategies. One makes a contribution to language learning directly, whereas the other influences language learning indirectly. The former includes some specific learning strategies, such as memorization, clarification and practice, whereas the latter consists of some activities that can create chances for language learners to use their language knowledge.

Second, in Oxford's opinion, there are also two classes of learning strategies: direct strategies and indirect strategies (Oxford: 1990). On the one hand, direct strategies deal with the target language directly, since they need people to process the language with their mind. Thus, the subcategories, like cognitive strategies as well as memory strategies belong to direct strategies. On the other hand, indirect language learning strategies achieve successful learning by the means of planning, evaluating, and concentrating, which indicates that metacognitive strategies, social strategies and affective strategies are considered as subcategories of indirect learning strategies, according to Oxford (1990).

Third, according to different purposes, Cohen (1998) divides language learning strategies into two categories: language learning strategies and language using strategies. The former is concerned with the strategies that can help the language learners to distinguish the materials which can be used for learning from others, to organize the materials so as to facilitate learning and enable the language learners to focus on the materials with high concentration; thus they can make an effort to remember the materials. The latter category involves strategies like communication strategies and retrieval strategies, which make it possible for students use language in an active way.

Last but not least, in O' Malley and Chamot's (1990) taxonomy system, three types of language learning strategies are established as a framework: metacognitive strategies, cognitive strategies as well as social/affective strategies. Metacognitive strategies can be applied to many different language learning tasks, and in O' Malley and Chamot's (1990) view, metacognitive strategies are executive skills at a higher level compared with cognitive strategies and social/affective strategies, consisting of planning, selective attention, monitoring and evaluation. However, directly coping with the incoming information, cognitive strategies aim at promoting learning by using specific ways to understand the information properly. O' Malley and Chamot (1990) have listed specific learning strategies
entailed by cognitive strategies, for example, organization, summarizing, and imagery. At last, social/affective strategies encompass social activities that involve interaction with others, and affective control. Thus, in general, they can also be applied to a variety of language learning tasks.

From the above discussion, it is evidently that these four well-known taxonomies share quite a few strategies. However, in this study, O' Malley and Chamot' s (1990) taxonomy is chosen as the framework of classification for investigation, because although most of them touch upon metacognitive strategies, cognitive strategies or social/affective strategies, only O' Malley and Chamot point out the inner relationship between these three, and they argue that metacognitive strategies are at the higher level compared with the other two, and at the same time, it is also in charge of the use of the other two. It is this hierachical relationship that makes this study more understandable and more comprehensive by conducting the investigation to study these three strategies, and also makes it possible to present the result of this investigation in a clearer and comprehensive way. Consequently, in order to take this advantage, this essay will adopt Malley and Chamot' s taxonomy framework.

2.4 The importance of learning strategies

There is such a great amount of information the language learners need to handle in their learning process that adopting language learning strategies to help them to deal with the tasks and new information becomes a kind of necessity (Hismanoglu: 2000). When it comes to the classroom situation, both the teachers and the students can benefit from using different language learning strategies. By adopting different language learning strategies, the students can process new information and approach problems which are encountered during the process of language learning in a better way. As to the teachers, from the language learning strategies adopted by their students, they can get valuable information about how their students tackle and remember new information, thus teaching a way that can better contribute to the students' learning. According to Hismanoglu (2000), Fedderholdt (1997) has even pointed out that the more language learning strategies the learners adopt, the better their language abilities can be improved. Furthermore, language learning strategies are also essential tools for cultivating communicative competence, which is agreed by Lessard-Clouston (1997). Thus, while striving for helping students to develop communicative competence, it is better for the teachers to encourage or teach their students to use various kinds of learning strategies
to deal with the information when communicating.

From successful language learners, it is possible for us to find some language learning strategies which compared with other language learning strategies, can better improve the language learners' language competence. In this way, the poor learners can somehow use these kinds of strategies as a source of reference to help them to change their learning strategies, and guide them in a successful direction. However, that does not mean the poor learners will definitely become successful after adopting the successful learners' learning strategies, because there will still be other possible reasons that cause them to be unsuccessful. As a matter of fact, according to Oxford (1996), Vann and Abraham (1990) point out that it is always possible to find evidence that although the unsuccessful language learners are short of metacognitive strategies that can help the learners to approach the tasks, they can still be found using the language learning strategies that are similar to the ones adopted by the successful learners. Thus, we should know that using the same strategies as the successful learners does not ensure that the unsuccessful language learners can become successful immediately, because success needs other factors too. However, the above discussion does show the important role that various language learning strategies play in the process of language learning, and moreover, in order to help students become successful learners, it is a good way for the teachers to take the advantage of different language learning strategies to assist their students in succeeding in learning the second or foreign languages.

2.5 Categories of vocabulary learning strategies

Schmitt (1997) points out that among various studies of language strategies, there are quite a few of them doing with strategies that can be specifically applied to vocabulary learning. Thus language learning strategies can be applied to different language learning tasks, including vocabulary learning. As was pointed out in section 2.3, O' Malley and Chamot's taxonomy of learning strategies will be chosen as the framework for this investigation, and moreover, it can be applied to various language learning tasks, including vocabulary learning. Thus, in this section, details about specific classifications of vocabulary learning strategies, including metacognitive strategies, cognitive strategies as well as social/affective strategies will be dealt with.
2.5.1 Metacognitive strategies

According to O' Malley and Chamot (1990), metacognitive strategies can be used by the language learners to help themselves to direct their overall language learning process, and to a great extent, they can manage and make an estimate of their language study on their own by adopting metacognitive strategies. Moreover, they believe that metacognitive strategies concern thinking about the learning process, planning making for learning, selective attention, self-monitoring of the learning tasks as well as self-evaluation of one's own language tasks performance. Thus, it can evidently be seen that metacognitive strategies are closely connected with the students' consciousness or autonomy, and in other words, the learners' thinking about learning, namely their autonomy shows an important metacognitive strategy that affects the students' vocabulary learning.

O' Malley and Chamot (1990) argue that planning enables the students to preview the organizing concepts of the language tasks, makes them put forward strategies to deal with the tasks, and produces plans so as to handle specific language tasks. Learning vocabularies needs the students' perseverance and the adoption of planning can to a great extent help students to insist on their behaviours of learning vocabularies. Thus, planning making is an important metacognitive strategy for the students to learn vocabularies.

As to the selective attention, O' Malley and Chamot (1990) point out that it deals with the decision which is made in advance to focus on the perspectives of the language details that are helpful for performing the language tasks. Accordingly, in a language like English, almost every learner knows the fact that it is impossible for them to learn every word, since even the native speakers only know a fraction of all the words. As a matter of fact, it is also impossible for the learners to focus on all the new words with limited resources. Thus selecting the most important as well as useful new words to concentrate on becomes a priority. Furthermore, these kinds of words which often are decided to be selected as the ones to remember are those that are often used by people with a high frequency. However, as to the low frequency words, according to Nation (1990), Li (1983) points out that it is advisable to take the following factors into consideration while deciding whether to learn a low frequency word when coming across it: 1) Is this an essential technical word in your field? 2) Is this word only a root or having the affixes with a root that can make it easy for you to remember? 3) Has it been repeated at least for twice? In addition, Mikulecky (1990) also agrees that the strategy of
selective attention is extraordinary important, especially when the students reach a higher point where they aim not only at the growth of vocabulary, but also at improving the reading speed. With all the benefits of this strategy to the vocabulary growth, selective attention also becomes a crucial metacognitive strategy for vocabulary learning.

Last but not least, O’ Malley and Chamot (1990) put forward that self-evaluation is the way that the students use to check their outcome of the performance on the language tasks. As to vocabulary learning, both reviewing and testing are efficient ways of self-evaluation strategies. Based on our own experience, we know that usually we will forget the new words immediately when the class is over. Thus, if we do not refer to the new words and do not check whether we have remembered them or not, we will completely forget them. Baddeley (1990) suggests that the language learners should review the new materials (in this situation, they can be referred to as vocabularies) soon after the initial meeting. Furthermore, Russell (1979) also brings forward that there are several time steps which suggest the best time for the students to review the new materials (new vocabularies): first five to ten minutes after the end of a study period; then twenty-four hours later; one week later; one month later; and at last six months later. In addition, testing oneself is also an important way for the students to evaluate themselves. By testing themselves, the students can know whether they have made progress in vocabulary learning during these periods, and it is also an effective way to see whether the strategies they adopted in these periods are effective or not. If not, they can thus change their ways of learning, which is also helpful for their later or further language learning. Thus, evidently, the above discussion presents the importance of reviewing and testing in the vocabulary learning.

From the above discussion, we can clearly see that metacognitive strategies are used to ensure that a particular goal has been arrived at, and they play a very important role in the process of the students' vocabulary learning. It also indicates that it is helpful for both the students and teachers, since the students can take advantage of these strategies to promote their vocabulary learning, and the teachers by being aware of these methods adopted by the students can thus further assist them in handling the new vocabularies and encouraging them to use effective strategies in their teaching.

2.5.2 Cognitive strategies

According to O’ Malley and Chamot (1990), different from metacognitive strategies,
cognitive strategies are adopted by the learners to achieve a particular goal. Thus in the vocabulary learning, the learners have to use a wide variety of strategies so as to learn the new words, some of which are cognitive strategies. Such kinds of strategies aim at helping the learners to cope with the new words so as to understand and retain them in their mental lexicon. Furthermore, O' Malley and Chamot (1990) even stress that these strategies are so entrenched that the students are reluctant to stop using them. There are various ways that the students often adopt and use them cognitively.

To begin with, it is common for the students to try many ways to memorize the new words in their process of vocabulary learning (Gairns and Redman: 1986). Thus memorization is considered to be cognitive. As to the actual behaviours, based on our own experience in vocabulary learning, it is not hard to find that word lists as well as flash cards are the tools that we often use in order to memorize the new words. By using flash cards, the students can benefit much, since these kinds of cards are very convenient to take along with them, thus enabling the students to take them out and study the new words whenever and wherever they have time or want to study. Furthermore, Gairns and Redman (1986) also agree that flash cards can be arranged again and again so as to produce logical groupings of the target words, which contribute to the students' vocabulary learning in a better way. Obviously, there can also be other ways to memorize the new words, such as keeping repeating the new word, making associations with the words that they already know. Although these are different ways of memorizing the new vocabularies, all of them reflect the fact that cognitive strategies are commonly used by language learners in the process of vocabulary learning.

Another kind of cognitive strategy is guessing the meaning of a new word, which is often used especially when we are dealing with reading comprehension in a test (O' Malley and Chamot: 1990). And as a matter of fact, even in our daily reading, it is always possible for us to come across new words. Thus, it is unavoidable for us to guess the meaning of words through our background knowledge or just according to the articles we are reading. There is also another situation where we may try to identify the meaning of a new word by looking at the linguistic cues presented by the word. Thus, guessing is also a common method that the students often use in their vocabulary learning.

Cognitive strategies also include using relevant study aids, for example, dictionary and taking notes. Dictionary is a common and effective tool that most language learners use in their
language learning process (Lewis: 1993). It is also a very direct way to learn a new word, and everyone can get the details of a new word when they refer to the dictionaries. Moreover, in order to understand some articles, the students can get much help in comprehension by resorting to the dictionary. While as to the strategy of note-taking, it also provides its advantages. Allen (1983) also points out that there is a large number of writers suggesting vocabulary notebooks. It is evident that while taking notes, the students have to create a structure for the new words that they have recently learnt, which itself is way to better acquire the new vocabularies, since there should be a way that is used to organize the structure, such as in the word meaning-oriented order and in the word usage-oriented order, all of which assist the students to understand the new words in a further and better way (Wenden: 1987). Moreover, the notes they made in the books also provide a chance for them to review the relevant word knowledge in a more convenient way. Furthermore, the importance of note-taking can be even more obvious while it is made on the relevant parts in the textbooks, because the textbooks are the place where the new vocabularies turn up, and taking notes on the relevant parts can help the students to know the usage of the target words and understand them better. Considering all the these advantages, we can see that both the dictionary usage and the note-taking are helpful for the students to learn vocabularies.

We can evidently see from the above discussion that cognitive strategies are various, but all of them show their specific advantages in assisting the vocabulary learning, and they all aim at helping the students to achieve specific goals in their learning process.

2.5.3 Social strategies

According to O’Malley and Chamot (1990), social strategies imply that in order to know the meaning of the new words, the students can ask someone who knows. Schmitt (1997) also puts forward that social strategies include asking teachers or classmates, group work, as well as interacting with L1 speakers.

It is understandable that in the class, the teachers are supposed to give the answers that the students are striving for. Thus the teachers are often the first ones asked by the students when they come across difficulties. Similarly, as teachers, they also can offer help in a variety of different ways in vocabulary learning. For instance, when the students ask the meaning of the new words, the teacher may directly give them the meaning in L1, because this is the easiest and quickest way for the students to know meaning, but this may also cause the problem of
making the students fail to distinguish the synonyms, since it is impossible to completely understand the new word just according to the L1 translation meanings. Martin (1984) also agrees that in order to use the new words effectively, the students need to know collocations, stylistics, and syntactic rules, not only just the synonyms. Thus it can be inferred that the teachers play an important role in giving the answers to the questions proposed by their students, and it also implies that various as well as comprehensive answers will be more helpful for the students' vocabulary learning. In addition, in the classroom, there are also other classmates or friends to ask for help, since sometimes other classmates can help to solve the problems we have encountered.

Group work is also a common activity. According to Dandereau (1988), there is a wide variety of advantages produced by group work, which are helpful for the students’ vocabulary learning. For example, group work can create a social context in which the students have more time as well as opportunities to use the language, since in the class, they have to spend more time in listening to the teachers' instruction. Thus the group work outside class makes it more possible for the students to practice and use the vocabularies that they have recently learned. In addition, group work also calls for the enthusiasm of every participant to take part in, thus it can to a great extent promote the students' motivation of practicing and using the language, which also helps their learning.

While considering the input as the most important factor in language acquisition, which is in line with Krashen (1982), interacting with L1 speakers, especially native speakers can undoubtedly contribute to the growth of the students' vocabulary, since this is the most direct way to know how some words are used in certain contexts, and moreover, the students can directly use the words through communicating with them, through which they will not only know some new words, but also know to use them correctly.

Thus, after the above discussion, we can clearly see how social strategies help the students to learn vocabularies in a better way.

2.6 Relevant studies

There have been quite a few of researchers doing researches in the perspective of vocabulary learning strategies over the past years. Brown (2002) has investigated the adoption of three
vocabulary learning strategies including keyword, semantics and keyword-semantics. The strategy of keyword is referred to as the fact that the learners can use the target word to make a connection with other similar words that they have already known. The strategy of semantics is a way in which the learners make attempts to link the target word to the semantic systems that have already existed in the learners' mind, while keyword-semantics evidently means the strategy that involves both the first one and the second one. Brown (2002) conducted the investigation and finally prove the importance of these three strategies for vocabulary learning. Wen (1995) has done an investigation on the English learning strategies. In her study, she aims at studying the relationship between social as well as psychological factors and the acquisition of English. The social as well as psychological factors involve personal characteristics, nervousness and environment for language learning. After the investigation, she got the conclusion that positive psychological behaviours and beneficial environment for language learning can contribute to the acquisition of English. Wang and Wu (1998) have also conducted an investigation to study the importance of learning strategies for vocabulary acquisition. By adopting the questionnaire and using the interview, they prove the fact that the learning strategies do play an important role in the students' vocabulary learning.

From the above discussion about the relative studies, we can see that although many scholars have conducted investigations to study vocabulary learning strategies, their direct purpose is just to investigate the strategies and to find out their importance. In this study though, the investigation about vocabulary learning strategies among the students will still be focused on, the students' attitudes toward vocabulary learning will be included in the investigation, and the relationship between their attitudes, their adoption of vocabulary learning strategies, and their vocabulary levels will be presented through this investigation.

3. Analysis and Discussion

In this chapter, the data and information collected from the vocabulary test as well as the questionnaire are analysed and discussed from different perspectives. Moreover, the analysis and discussion are carried out in accordance with the theoretical background that is elaborated on in chapter 2.

The results will be coped with on the general level first, thus in the first section, the result about the overall pattern of the students' attitudes toward English vocabulary learning will be
presented and discussed, and in the second section, the result on the general pattern of the students' English vocabulary learning strategies will also be shown and discussed. In the third section, the result about the correlation between the students' attitudes and their strategy use, the English vocabulary learning strategy use and their vocabulary level are shown and decided according to their scores of the vocabulary test. In the fourth section, the result about the differences in English vocabulary learning strategies used by high-score students, which mean their vocabulary level is comparatively high, and low-score students, which mean their vocabulary level is comparatively low, will be presented and discussed in a profound and detailed way. Thus comparisons will be made between the high-score students and the low-score students about their attitudes toward English vocabulary learning and their adoption of different vocabulary learning strategies. Based on the findings, analysis and discussion, related pedagogical implications for English vocabulary teaching will be suggested.

3.1 The general pattern of the students' attitudes toward English vocabulary learning

Before we go into the detailed analysis of the data, it is worth putting forward the fact that the results presented in section 3.1 and section 3.2 are from the questionnaire which aims at investigating the students' attitudes toward English vocabulary learning and their adoption of vocabulary learning strategies. It is important to study the students' attitudes toward their English vocabulary learning, which is in line with Wenden's (1987) view. He pointed out that different attitudes held by different students can affect their learning behaviours; for example, the students who hold positive attitudes will try to use wider ways to help them acquire English, and they may be more active in the learning process, while those who have a passive view may behave less actively.

The following table 2 reveals the result that reflects the students' attitudes toward English vocabulary learning. As mentioned in the questionnaire section, items 1-5 are made to investigate the students' attitudes toward vocabulary learning. The following table 2 presents the descriptive statistics of each item. What needs to be pointed out first is that in the descriptive statistics analysis, Mean is referred to as average value, which cannot only be used to reflect the general condition of a set of data, but also be used to compare different sets of data to see the differences between the groups, whereas standard deviation is used to indicate
the fluctuation range of a group of numbers, and the more the standard deviation shows, the wider the fluctuation range of a group of numbers will be.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Mean</th>
<th>Standard Deviation (SD)</th>
<th>No. Of item(s)</th>
<th>Mean/item</th>
<th>SD/item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item one</td>
<td>2.90</td>
<td>0.89</td>
<td>1</td>
<td>2.90</td>
<td>0.89</td>
</tr>
<tr>
<td>Item two</td>
<td>2.70</td>
<td>0.86</td>
<td>1</td>
<td>2.70</td>
<td>0.86</td>
</tr>
<tr>
<td>Item three</td>
<td>3.04</td>
<td>0.81</td>
<td>1</td>
<td>3.04</td>
<td>0.81</td>
</tr>
<tr>
<td>Item four</td>
<td>2.76</td>
<td>0.74</td>
<td>1</td>
<td>2.76</td>
<td>0.74</td>
</tr>
<tr>
<td>Item five</td>
<td>2.72</td>
<td>0.73</td>
<td>1</td>
<td>2.72</td>
<td>0.73</td>
</tr>
<tr>
<td>Total</td>
<td>14.12</td>
<td>4.03</td>
<td>5</td>
<td>2.82</td>
<td>0.86</td>
</tr>
</tbody>
</table>

The above table 2 shows the subjects' general attitudes toward English vocabulary learning. It can be seen from the above table that the standard deviations vary little, which means that there is no extreme examples in this part. Furthermore, from the above (Mean/item=2.82, SD/item=0.86), we can see that in general, the investigated learners consider vocabulary learning as sometimes an interesting activity while sometimes a monotonous task. This is understandable, because learning vocabulary is a task that needs the students' perseverance to insist on learning day by day. It is inevitable that sometimes they feel bored, especially when they have to remember a number of new words so as to pass the exams. However, it is still possible for quite a few students to feel interested in learning new words, since the process of learning the new words itself is a process during which the students acquire new knowledge, and when their focus is on the purpose of gaining more knowledge about English, making progress in English learning or broadening their scope of knowledge, they will forget the boringness of learning vocabulary, and instead they may feel interested in it.

In addition, in order to make an elaborated analysis of the responses the investigated learners give to each question which investigate their attitudes toward vocabulary learning, and also to
compare and analyze the results more clearly, the following diagram 1 is made to show in a clearer way.

Diagram 1: The Students' Responses to Questions 1, 2, 3, 4 and 5 (Q for Question)

The diagram 1 shows the investigated learners' opinions on specific statements. Generally speaking, values above 3 should be considered as “positive”, or “agree”. It can be clearly found from the above diagram 1 that the Mean of Q 3 (=3.04) ranks the highest among the five questions, which indicates that in general, English vocabulary learning is not so boring that it makes the students think that it has no creation at all. To some degree, they still believe English vocabulary learning can be a creative activity. This can also be found in question 1 (Mean=2.9, SD=0.89), which means that for most of the students, English vocabulary learning is not a completely mechanical process, which makes people feel boring, though they may sometimes have a sense of monotonousness and tediousness while learning vocabulary. As to 4 (Mean=2.76; SD=0.74) and 5 (Mean=2.72; SD=0.73), it appears that the students are not so interested in vocabulary learning and do not often get a sense of achievement from vocabulary learning. In addition, from question 2 (Mean=2.70; SD=0.86), we can find that it is more possible for them to think that the key to remember new words is repetition.

3.2 The overall pattern of the students' English vocabulary learning strategy use

When learning English vocabulary, it is very possible to find the fact that different learners may attach different importance to different ways during the process of learning, and they
may prefer some ways to others so as to achieve the goal of learning the new English words in a better way. After studying items 6-35 in the questionnaire, which deal with the investigation about vocabulary learning strategies, the following table 3 is presented to give some clues as to how the students learn English vocabulary and what kind of strategies they adopt.

### Table 3: Mean and standard deviation of the English vocabulary learning strategy use

<table>
<thead>
<tr>
<th>Categories and Strategies</th>
<th>Mean</th>
<th>No. of items</th>
<th>Mean of item</th>
<th>Standard Deviation</th>
<th>SD/item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metacognitive</td>
<td>28.36</td>
<td>12</td>
<td>2.34</td>
<td>3.29</td>
<td>0.27</td>
</tr>
<tr>
<td>Learner autonomy</td>
<td>7.22</td>
<td>3</td>
<td>2.41</td>
<td>1.64</td>
<td>0.55</td>
</tr>
<tr>
<td>Planning-making</td>
<td>6.66</td>
<td>3</td>
<td>2.22</td>
<td>1.55</td>
<td>0.52</td>
</tr>
<tr>
<td>Selective attention</td>
<td>7.38</td>
<td>3</td>
<td>2.46</td>
<td>1.37</td>
<td>0.46</td>
</tr>
<tr>
<td>Reviewing and testing</td>
<td>6.86</td>
<td>3</td>
<td>2.29</td>
<td>1.23</td>
<td>0.41</td>
</tr>
<tr>
<td>Cognitive</td>
<td>34.54</td>
<td>12</td>
<td>2.87</td>
<td>3.31</td>
<td>0.28</td>
</tr>
<tr>
<td>Memorization</td>
<td>8.40</td>
<td>3</td>
<td>2.80</td>
<td>1.73</td>
<td>0.58</td>
</tr>
<tr>
<td>Guessing</td>
<td>9.02</td>
<td>3</td>
<td>3.00</td>
<td>1.32</td>
<td>0.44</td>
</tr>
<tr>
<td>Dictionary use</td>
<td>8.60</td>
<td>3</td>
<td>2.87</td>
<td>1.36</td>
<td>0.45</td>
</tr>
<tr>
<td>Note-taking</td>
<td>8.52</td>
<td>3</td>
<td>2.84</td>
<td>1.64</td>
<td>0.55</td>
</tr>
<tr>
<td>Social /affective</td>
<td>14.84</td>
<td>6</td>
<td>2.44</td>
<td>1.63</td>
<td>0.27</td>
</tr>
<tr>
<td>Affective control</td>
<td>8.30</td>
<td>3</td>
<td>2.77</td>
<td>1.28</td>
<td>0.43</td>
</tr>
<tr>
<td>Social activities</td>
<td>6.48</td>
<td>3</td>
<td>2.16</td>
<td>1.37</td>
<td>0.46</td>
</tr>
</tbody>
</table>

The above table 3 presents the general descriptive statistics about the investigated learners' adoption of specific strategies at three different levels. According to Oxford (1990), the average scores of 3.5-5 at the 5-point scale are defined as at the high level of using strategies, which means frequent use of these strategies; average scores of 2.5-3.4 are regarded as at the medium level of using these strategies, which indicates the fact that learners less frequently use the strategies; average scores ranging from 1.0-2.4 are considered as at the low level of using strategies, which implies that the learners seldom use these strategies. From the above table, it can be found that both the metacognitive strategy use (Mean/item=2.34; SD/item=0.27) and social/affective strategy use (Mean/item=2.44; SD/item=0.27) are seldom
used by the investigated learners. However, cognitive strategy (Mean/item=2.87; SD/item=0.28) use is at the medium level, ranking highest among these three dimensions of English vocabulary learning strategies. Moreover, since their standard deviations are similar, the students' answers do not vary greatly. Thus comparatively speaking, cognitive strategies are much more frequently used by the investigated students followed by social/affective strategies, whereas metacognitive strategies rank lowest. The following diagram 2 can present the above fact in a much more evident way.

![Diagram 2: Strategies Adoption at Each Dimension](image)

It is of great necessity as well as importance to study the use of all the English vocabulary learning strategies at each dimension so as to gain much further insight into the general pattern of the English vocabulary learning strategy adopted by the investigated learners, which also contributes to the understanding of how the Chinese students learn English vocabulary and what specific English vocabulary learning strategies they prefer. Diagram 3 below throws some light on English vocabulary learning strategies at the metacognitive level.
It can be apparently found from the above diagram 3 that although generally speaking, metacognitive strategies are seldom employed by the investigated students as was shown in diagram 2, there are still, at the dimension of metacognitive strategies, some strategies which are preferred by the investigated students, and more frequently employed by the students than others. However, their standard deviations also show that there is no large fluctuations in the students' choices, which means there is no extreme phenomenon in their choices. The above diagram 3 shows that at the metacognitive level, selective attention (Mean/item=2.46; SD/item=0.46) ranks the highest among the four categories of the metacognitive strategies. Selective attention strategy enables the students to pay attention to certain aspects of the language details which can help the students to cope with language tasks (O' Malley and Chamot: 1990). Thus it indicates the fact that the investigated learners have an awareness of what kind of words they should learn when they come across the new English words. Moreover, it also means that the investigated students are positive with regard to identifying which words are important and necessary to be acquired, and the new words that they encounter and consider as the important ones might arouse their special consciousness to learn and understand. For example, it is reflected by the questionnaire that some students will focus on the the key words that they think important when reading the materials, and they often learn these words but ignore some words that are new but not very important in their view for the understanding of the material. This investigation result reflects the fact that the students attach great importance to the selective attention strategies, which is in line with what Mikulecky (1990) points out, that is, that the selective attention strategy is particularly
important, especially at the moment when the learners arrive at a new point where they study not only for enlarging their vocabulary, but also for increasing their reading speed.

However, learner autonomy (Mean/item=2.41; SD/item=0.55), planning-making (Mean/item=2.22; SD/item=0.52) as well as reviewing and testing (Mean/item=2.29; SD/item=0.41) rank comparatively lower among the metacognitive strategies. It can be seen that among these three strategies, learner autonomy which follows selective attention is higher than the other two, which means that although most of the investigated students may hardly have a definite object and plan for their English vocabulary learning, which is indicated by the descriptive statistics of planning-making (Mean/item=2.22; SD/item=0.52), and seldom review and test themselves regularly, which is shown by the descriptive statistics of reviewing and testing (Mean/item=2.29; SD/item=0.41), their relatively higher learner autonomy indicates the fact that they still have some idea on how to help themselves to acquire English vocabulary. For instance, as having been shown in the section of the questionnaire, which tests the students' learner autonomy, some students buy vocabulary books by themselves, some read other English materials outside class so as to enlarge their scope of English vocabulary, and others write English diary to use new words in order to learn them in a better way. All of these are ways that indicate the investigated students' adoption of learner autonomy to learn English vocabulary. However, the poor performance or in other words, the rather lower use of planning-making as well as reviewing and testing might result from the time limitation, material deficiency and their negative views on the effect of these activities, such as making definite plans and goals to learn English vocabulary, as well as review and test themselves regularly. However, the investigation result about the students less frequently using reviewing and testing strategy may make both Baddeley (1990) and Russell (1979) feel disappointed, since both of them attach importance to the reviewing and testing strategy. Baddeley (1990) points out that during the process of language learning, the students should review new materials soon after their first meeting. Moreover, Russell (1979) even puts forward the time steps that recommend the students for the best time to review the new materials. Factors such as time limitation and negative attitudes about the influence of specific attitude can also explain why the strategy of learner autonomy is not that highly adopted by the students, though it is comparatively higher among these three strategies.

All in all, in the metacognitive strategies, selective attention strategy is most favored by the investigated students, which means the students have an idea about selecting what types of
words to learn while reading materials. Learner autonomy, planning-making as well as reviewing and testing strategies are the less frequently used ones by the investigated students. However, the result about the use of metacognitive strategies in this study shows the differences when it is compared with Gu and Johnson's (1996) study. The present study presents that the investigated students use selective attention strategy more frequently than learner autonomy strategy, which is in contrast with Gu and Jonson's (1996) study.

As to the dimension of the cognitive strategies, it can be found in the table 3 that it also encompasses four categories, including memorization, guessing, dictionary use and note-taking. Diagram 4 presented below sheds some lights on the adoption of strategies by the investigated students at the cognitive level.

![Diagram 4: Strategy Use at the Cognitive Level](image)

Among the three levels, namely, metacognitive level, cognitive level and social/affective level, cognitive strategies rank highest (see table 3). In order to make an elaborated analysis about the strategy use at the cognitive level, based on the above diagram 4, the following table 4 is made to present the descriptive statistics of the specific ways the investigated students use. Furthermore, in order to present more clearly, the three sub-categories of the cognitive strategies are made in bold.
**Table 4:** Mean and standard deviation of the specific strategies at the level of the subcategories of the cognitive strategies

<table>
<thead>
<tr>
<th>Categories and Strategies</th>
<th>Mean</th>
<th>No. of items</th>
<th>Mean of item</th>
<th>Standard Deviation</th>
<th>SD/item</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Guessing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using background knowledge</td>
<td>6.68</td>
<td>2</td>
<td>3.35</td>
<td>1.10</td>
<td>0.55</td>
</tr>
<tr>
<td>Using linguistic cues</td>
<td>2.28</td>
<td>1</td>
<td>2.28</td>
<td>0.70</td>
<td>0.70</td>
</tr>
<tr>
<td><strong>Dictionary use</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dictionary use for comprehension</td>
<td>2.38</td>
<td>1</td>
<td>2.38</td>
<td>0.83</td>
<td>0.83</td>
</tr>
<tr>
<td>Looking-up strategies</td>
<td>6.20</td>
<td>2</td>
<td>3.1</td>
<td>1.18</td>
<td>0.59</td>
</tr>
<tr>
<td><strong>Note-taking</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meaning-oriented note-taking</td>
<td>6.12</td>
<td>2</td>
<td>3.05</td>
<td>1.27</td>
<td>0.64</td>
</tr>
<tr>
<td>Usage-oriented note-taking</td>
<td>2.36</td>
<td>1</td>
<td>2.36</td>
<td>0.72</td>
<td>0.72</td>
</tr>
<tr>
<td><strong>Memorization</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>repetition</td>
<td>2.76</td>
<td>1</td>
<td>2.76</td>
<td>0.92</td>
<td>0.92</td>
</tr>
<tr>
<td>association</td>
<td>2.72</td>
<td>1</td>
<td>2.72</td>
<td>0.83</td>
<td>0.83</td>
</tr>
<tr>
<td>grouping</td>
<td>2.92</td>
<td>1</td>
<td>2.92</td>
<td>0.85</td>
<td>0.85</td>
</tr>
</tbody>
</table>

It is evident from both diagram 4 and table 4 that guessing strategies (Mean/item=3.00; SD/item=0.44) rank the highest, followed by dictionary use strategies, note-taking strategies and memorization strategies, which reflects the fact that the investigated students comparatively much more frequently employ guessing strategies to help them know the meaning of a new word. But as to the SDs reflected in the above, generally there is nothing interesting to say here, since they do not vary greatly. The relatively high value of the strategy of dictionary use among these four strategies is also an indication of its significantly
important position among all the cognitive strategies. Furthermore, from table 4, we recognize that while the students employ the guessing strategies to guess the meaning of a new word, they use their background knowledge (Mean/item=3.35; SD/item=0.55) more frequently than the linguistic cues (Mean/item=2.28; SD/item=0.70), though both of these two ways make contribution to their English vocabulary learning. However, the SD/item of background knowledge strategy use is smaller than the one of linguistic cues strategy use, which means that the most of the investigated students use their background knowledge frequently, whereas as regards the linguistic cues, many of them hardly use it, but some often use it. Thus, their frequency of using linguistic cues for guessing varies considerably.

On the category of dictionary use (Mean/item=2.87; SD/item=0.45), ranking after guessing strategies (see diagram 4), dictionary-use strategy is also the strategy that the investigated students often resort to. Such a fact in this investigation is in line with Lewis (1993). He points out that almost every language learner needs a dictionary in their language learning process, since it is a helpful tool. This comparatively high value of the strategy of dictionary use among the other three strategies indicates that the students are relatively mature in the dictionary use, which might be boosted by the relatively poor environment of English or foreign language learning in China. Then referring to the dictionary becomes a vital and valuable way that is available at any time for the students to assist them in their process of learning and understanding new English words. Moreover, as presented in table 4, it implies the fact that they use dictionary strategies both for comprehension (Mean/item=2.38; SD/item=0.83) and for elaborate processing aimed at English vocabulary learning, which is indicated by the looking-up strategies (Mean/item=3.10; SD/item=0.59). For instance, they look up the words in the dictionary so as to eliminate the inappropriate meanings of the words by using their syntactic knowledge. However, it is surprising to find that the investigated students in the present study use looking-up strategies more frequently than using a dictionary for comprehension. This might be caused by the fact that they prefer to use guessing strategies to guess the meaning of the new words they encounter in their reading materials, which is quicker and more convenient for them to comprehend the materials. Whereas look-up strategies become an essential way for them to know more details about a new word, since it might be easy to guess the meaning according to the material, but in order to know the exact way of using a specific word as well as its other meanings, looking it up in the dictionary becomes a necessity. The SD/item of dictionary use for comprehension is comparatively larger among these strategies, thus it reflects the fact that some students basically do not often
adopt the strategy of dictionary use for comprehension, whereas some often use it for comprehension. In other words, their frequency of adopting the dictionary use strategy for comprehension is considerably different.

The other two strategies that follow are note-taking strategies (Mean/item=2.84; SD/item=0.55) and memorization strategies (Mean/item=2.80; SD/item=0.58), which can be seen in diagram 4. This investigation result about the note-taking strategy use shows a good example as what Allen (1983) says, that is, many writers suggest language learners using a vocabulary notebook. On the one hand, it can be seen clearly in table 4 that at the category of note-taking strategies, the investigated students adopt both the meaning-oriented note-taking strategies (Mean/item=3.05; SD/item=0.64) and the usage-oriented note-taking strategies (Mean/item=2.36; SD/item=0.72) while learning English vocabulary. However, it is apparent that the meaning-oriented note-taking strategies are much more frequently employed by the students in this investigation. Moreover, its standard deviation also indicates that the adoption frequency between different students does not vary greatly. It is a good result, to some degree, for us to see that the students in China are learning English in a diligent way. The low frequent use of usage-oriented strategies shows us that the investigated students pay much more attention to the words' meaning than their usage when learning English vocabulary, which might be affected by the environment in China of lacking opportunities of communicating with people in English or the chances of often using English in their daily life, thus generally making the students draw less attention on the usage of the English words. It is worth paying attention to this investigation result, since Wenden (1987) has put forward that both the meaning-oriented note-taking strategy and the usage-oriented note-taking strategy can promote vocabulary learning in a better way.

On the other hand, it is surprising to find that the strategy of memorization is the one that the students in the present investigation least frequently use among the four strategies at the cognitive level. Generally speaking, in China, and people often consider that the key to learning English vocabulary is to memorize them, we might thus think memorization might be the strategy that the students often resort to. This is also believed by Gairns and Redman (1986) who think it is common for language learners to use memorization to remember new words. Such a result of this investigation implies that what the students actually do is different from what we usually think they will do. Furthermore, according table 4, at the category of memorization, the strategies of repetition (Mean/item=2.76; SD/item=0.92), association
(Mean/item=2.72; SD/item=0.83) and grouping (Mean/item=2.92; SD/item=0.85) also indicate the fact that grouping, which means a way to categorize a new word to its synonyms or antonyms so as to remember it, ranks highest among these three strategies, but their standard deviation, especially the one of repetition, shows that the students' frequency of using these three strategies varies considerably, which means that some use them often, whereas some hardly use them at all.

In a word, taking specific strategies into consideration at the cognitive level, the strategy of using background knowledge under the guessing strategies, looking-up strategies under the dictionary use strategies, meaning-oriented note-taking strategy under the note-taking strategies are the strategies that the students in this investigation most frequently adopt. Furthermore, the results shown at this aspect in the present study is similar to the results of Gu and Jonson's study.

The social/affective strategies include affective control and social activities. The adoption of these two strategies among the investigated learners is shown in the following diagram 5.

![Diagram 5: Strategy Use at the Social/Affective Level](image)

According to diagram 5, we can evidently see that followed by the social activities (Mean/item=2.77; SD/item=0.43), affective control (Mean/item=2.16; SD/item=0.46) is the mostly used social/affective strategy by the investigated learners, and moreover, their adoption frequency of affective control varies little, which demonstrates the fact that the learners in the present investigation are generally more positive as regards developing self-
confidence, self-encouragement, reducing anxiety and making themselves calm down when coming across difficulties, frustration or failure in their English vocabulary learning process. Such kind of affective control is necessary and also of great importance for the students, since in the process of learning a foreign language, it is inevitable to encounter various difficulties and disappointments, all of which call for the students’ confidence and courage to handle and overcome them. The relatively low frequent use of social activities in the social/affective strategies demonstrate the unavoidable fact that the students seldom seek opportunities to learn or practice their English through English conversation with foreigners or classmates. Furthermore, it also indicates that in the current English language learning environment in China, the leaners get little exposure to the English environment, which has presented a phenomenon that is often discussed by both the teachers and the students. It is important for us to attach importance to this phenomenon as shown by the investigation, since Dandereau (1988) also points out that there are various advantages to take from group communication by using the language the students are learning, which can help the students to acquire vocabulary learning in a better way.

The adoption of English vocabulary learning strategies at each dimension of the three categories, namely, metacognitive strategies, cognitive strategies and social/affective strategies, has been analysed and discussed respectively in a detailed way. It is necessary to make an apparent conclusion about the overall pattern of the English vocabulary learning strategies used by the investigated students. According to the above analysis and discussion, we can draw a conclusion that the rank of frequency of the used English vocabulary learning strategies at the three levels is as follows: guessing strategies, dictionary-use strategies, note-taking strategies, memorization strategies, affective control, selective attention, learner autonomy, reviewing and testing, planning-making and social activities. Therefore, it can be concluded that the investigated learners generally employed a great variety of English vocabulary learning strategies at the level of metacognitive, cognitive and social/affective strategies in their English vocabulary learning process. The above detailed statistic analysis has shown that cognitive strategies are the strategies they comparatively often referred to among these three strategies, and moreover, it indicates that the investigated learners are mature users in guessing and dictionary use at the category of cognitive strategies. In addition, the students are positive in using selective attention in the metacognitive strategies and affective control in the social/affective strategies, but they are passive in adopting learner
autonomy, reviewing and testing, planning-making at the category of metacognitive strategies and social activities in the social/affective strategies.

3.3 Correlation study between English vocabulary learning attitudes and English vocabulary learning strategy use, strategy use and English vocabulary level

According to the analysis and discussion in the above two sections, the investigated students are reported to hold different attitudes toward English vocabulary learning, and moreover, they employ different English vocabulary learning strategies. In order to investigate whether there is any relationship between their English vocabulary learning attitudes and their strategy use, as well as between their English vocabulary learning strategy use and their vocabulary level, a correlation study is made. Thus, this section will include two subsections, and the first section deals with the correlation study between the students' English vocabulary learning attitudes and their English vocabulary learning strategies, while the second section handles the correlation study between the strategy use and the students' vocabulary level.

3.3.1 Correlation study between English vocabulary learning attitudes and English vocabulary learning strategy use

In order to obtain an insight into the relationship between the investigated students' English vocabulary learning attitudes and their English vocabulary learning strategy use, a correlation analysis was performed. The correlation happens between the values of their attitudes and the values at the dimension of metacognitive strategies, cognitive strategies and social/affective strategies. In a correlation analysis, there are two values: r and p. R-value is the correlation value, which indicates the relationship between two values. When r >0, it means they have a positive relationship, but when r<0 it indicates a passive relationship. As to the p-value, it is a value that implies whether this relationship is significant. There are two levels. One is at the 0.01 level, and the other is at the 0.05 level. When p<0.05 or p<0.01, it means the correlation is significant at the 0.05 level or at the 0.01 level respectively. But when p>0.05 or p>0.01, it implies that the correlation is not significant. What needs to be pointed out is the fact that the amount of the p-values has no meaning, which means that as long as the p<0.05 or p<0.01, it is significant. Both the r-value and the p-value will turn up in a correlation analysis, and the r-value is listed above the p-value. The following table 5 presents the result of the correlation analysis.
Table 5: Correlations between vocabulary learning attitudes and the three levels of vocabulary learning strategies

<table>
<thead>
<tr>
<th></th>
<th>Metacognitive strategies</th>
<th>Cognitive strategies</th>
<th>Social/affective strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>attitudes</td>
<td>.398**</td>
<td>.368**</td>
<td>.369**</td>
</tr>
<tr>
<td></td>
<td>.004</td>
<td>.009</td>
<td>.008</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed)**

From table 5, we can apparently see that the correlation is significant at the 0.01 level, and all the r-values are more than 0, and their correspondent p-values in table 5 are less than 0.01, thus we can obtain the result from this correlation analysis that there are significant correlations between the English vocabulary learning attitudes and the three levels of the learning strategies. This result indicates that it is of great significance for us to investigate the students' attitudes toward English vocabulary learning as well as the strategies that they employ in their process of English vocabulary learning. This also shows what Wenden (1987) as well as O’ Malley and Chamet believe, that is, some learners prefer to use metacognitive strategies to direct their general language learning process, some attach more importance to cognitive strategies to understand specific new materials, while others believe social/affective strategies which enable one to communicate more can learn better. Thus, all of these three strategies are significantly correlated with what the students believe, which is shown by the result above in this study.

Since the study in the 3.2 section has shown that the investigated students adopt different English vocabulary learning strategies, and in this study, the students are also required to take an English vocabulary test, which reflects their vocabulary levels. In order to know whether their vocabulary learning strategies have any relationship with their vocabulary level, a correlation analysis between the English vocabulary learning strategies and the vocabulary scores is also needed, which is presented in the next subsection.
3.3.2 Correlation study between English vocabulary learning strategy use and English vocabulary level

A correlation analysis has been done between the vocabulary test score and the vocabulary learning strategies, and the result is shown in table 6 below. In order to have an apparent view of both the r-value and the p-value, these two values are listed separately in table 6. Furthermore, the numbers are made in bold so as to highlight the strategies that have correlation to the scores.

**Table 6:** Correlation study between the vocabulary learning strategies and the vocabulary test score

<table>
<thead>
<tr>
<th>strategies</th>
<th>scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
</tr>
<tr>
<td>Metacognitive strategies</td>
<td>.393**</td>
</tr>
<tr>
<td>Learner autonomy</td>
<td>.345*</td>
</tr>
<tr>
<td>Plan-making</td>
<td>.272</td>
</tr>
<tr>
<td>Selective attention</td>
<td>.169</td>
</tr>
<tr>
<td>Reviewing and testing</td>
<td>.231</td>
</tr>
<tr>
<td>Cognitive strategies</td>
<td>.397**</td>
</tr>
<tr>
<td>Memorization</td>
<td>.282*</td>
</tr>
<tr>
<td>Guessing</td>
<td>.186</td>
</tr>
<tr>
<td>Dictionary use</td>
<td>.053</td>
</tr>
<tr>
<td>Note-taking</td>
<td>.311*</td>
</tr>
<tr>
<td>Social/affective strategies</td>
<td>.311*</td>
</tr>
<tr>
<td>Affective control</td>
<td>.332*</td>
</tr>
<tr>
<td>Social activities</td>
<td>.107</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level (2-tailed)  
**Correlation is significant at the 0.01 level (2-tailed)

According to table 6, it is interesting to find that the fact that although some strategies are frequently employed by the students, they do not show a significant correlation with the vocabulary test score. However, from the above table 6, we can still find that the vocabulary test score is significantly correlated with the all the three vocabulary learning strategies, that is, metacognitive strategies (r=0.393**, p=0.005<0.01), cognitive strategies (r=0.397**, p=0.004<0.01) and social/affective strategies(r=0.311*; p=0.028<0.05). Furthermore, the use
of these three vocabulary strategies has a positive effect on the acquisition of English vocabulary, which also demonstrates that the investigated students use these strategies frequently as well as consciously in their English vocabulary learning process, and these strategies make contribution to their English vocabulary acquisition. This result also reflects the thought that O’ Malley and Chamet (1990) believe, that is, though language learners may adopt different strategies at these three levels, they can still benefit greatly from adopting these strategies to help them learning language.

Although the vocabulary test score is significantly correlated with the strategies at these three levels, it appears that only some of the sub-categories of these three strategies show significant correlation with the vocabulary test score, which indicates that not all the strategies under the metacognitive strategies, cognitive strategies and social/affective strategies are of much help for the investigated students' English vocabulary learning. However, some other strategies do show their importance in the process of the students' vocabulary learning.

At the level of metacognitive strategies, it can be found from table 6 that the learner autonomy (r=0.345*; p=0.014<0.05) is significantly correlated with the vocabulary test score, which means that the frequent adoption of learner autonomy has a positive influence on the students' vocabulary learning. This is not in line with Wenden's (1998) study, in which it also shows that reviewing and testing have a significant correlation with the students' vocabulary level, and he points out that reviewing and testing play a very important role in the process of vocabulary learning. However, according to the investigation in section 3.2 about the general pattern of the English vocabulary use, the learner autonomy is not the most frequently used one among the investigated learners, which indicates that there is a possibility for the students to make progress in their English vocabulary learning by frequently and appropriately using the strategy of learner autonomy. In this way, the strategy of learner autonomy at the metacognitive level demonstrates its importance by being involved in the students' English vocabulary learning process. The other three strategies at the category of metacognitive strategies show no statistically significant correlation with the vocabulary test score. This is probably because the investigated students employ them at a low frequency and these strategies are of little help for English vocabulary learning of the investigated students in this study.
As to the cognitive strategies, it can be seen in table 6 that both the memorization \((r=0.282*; \ p=0.047<0.05)\) and note-taking \((r=0.345*; \ p=0.014<0.05)\) strategies are significantly correlated with the investigated students' vocabulary level. This result is in line with Wang and Wu's (1998) investigation result presented in their study about vocabulary learning strategies, and they also put forward that such correlation in a further way demonstrates the importance of adopting cognitive strategies. The coefficient of the note-taking strategies and the vocabulary test score is higher than the one of the memorization strategies and the vocabulary level. On the one hand, the significant correlation between the memorization strategies and the vocabulary test score indicates that while learning the English vocabulary, the students can employ different specific memorization strategies and they play an important role in the students' vocabulary learning process. Combined with the study in section 3.2, which shows that the investigated students adopt memorization strategies less frequently than the other three strategies at the cognitive strategies level, this study presents a significant correlation between the memorization strategies and the vocabulary level, which is shown in table 6, and thus implies that the students can make an effort to adopt more memorization strategies so as to improve their English vocabulary level.

On the other hand, note-taking strategies are also significantly correlated with the vocabulary level, and moreover, its high coefficient indicates that the strategy of note-taking can better promote the students' English vocabulary learning. This can probably be because the investigated students in this study use note-taking strategies frequently, which can be seen in the study in section 3.2, and it offers much help in the purpose of improving their vocabulary level. This result also indicates that these investigated students get much help in their English vocabulary acquisition by frequently and appropriately using note-taking strategies. In addition, table 6 presents the fact that both the guessing strategies \((r=0.186; \ p=0.195)\) and the dictionary-use strategies \((r=0.053; \ p=0.715)\) show no significant correlation with the vocabulary level. This indicates that both the guessing strategies and the dictionary-use strategies are of little help to the English vocabulary acquisition for the investigated students in present study.

With regard to the social/affective strategies, it can be apparently seen from table 6 that affective control \((r=0.332*; \ p=0.019<0.05)\) is significantly correlated with the vocabulary level, while social activities \((r=0.107; \ p=0.461)\) show no correlation with the vocabulary test score, which means the fact that the investigated students can behave well in the aspect of
controlling their different feelings, which offers much help in their process of English vocabulary learning, but as to the social activities, it seems they seldom communicate with their teachers, classmates or foreigners in English, and it results in making no contribution to their English vocabulary acquisition. The former result, that is, that the affective control is significantly correlated with the vocabulary level, is in line with what Wen (1995) finds. She also points out that positive emotion or psychological elements can promote learners' English acquisition.

In conclusion, metacognitive strategies, cognitive strategies and social/affective strategies are all significantly correlated with the English vocabulary level. Furthermore, in metacognitive strategies, learner autonomy shows significant correlation with the vocabulary test score, and at the category of cognitive strategies, both the memorization strategies and the note-taking strategies have significant correlations with the vocabulary level, and last but not least, at the level of social/affective strategies, affective control shows significant correlation with the vocabulary level. All these significant correlations between vocabulary learning strategies and the vocabulary level indicate that the investigated students do benefit from adopting these different English vocabulary learning strategies in their process of English vocabulary acquisition, and the result also makes the students know in what direction they strive.

### 3.4 Differences in English vocabulary learning attitudes and strategy use between high-score group and low-score group

In order to investigate whether there is any difference between the high-score group and the low-score group, and also to present this investigation in a more detailed and evident way, a high-score group and a low-score group are picked out to make a comparison on the perspective of their attitudes toward English vocabulary learning as well as their vocabulary learning strategy use. The investigated students’ English vocabulary test scores range from 13 to 27, and the following table 7 presents the distribution of score ranges.

<table>
<thead>
<tr>
<th>Score range</th>
<th>12-17</th>
<th>18-23</th>
<th>24-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students</td>
<td>13</td>
<td>26</td>
<td>11</td>
</tr>
</tbody>
</table>

**Table 7 Description of the students' scores in the vocabulary test**
According to the table 7, we can see that there are 11 students with high scores, and 13 students who received low scores, whereas 26 students are between them. In order to make a comparison between the high-score group and the low-score group, 10 students are selected randomly from both the students who got high scores and low scores. The high-score group is labeled as group 1, whereas the low-score group is marked as group 2. The difference in their attitudes toward English vocabulary learning and vocabulary learning strategy use will be presented in the following two subsections

3.4.1 Differences in English vocabulary learning attitudes between high-score group and low-score group

The values of attitudes made by both the students in the high-score group and the students in the low-score group are compared, and the following table 8 presents the result of the comparison.

<table>
<thead>
<tr>
<th>Attitudes</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>17.00</td>
<td>1.49</td>
</tr>
<tr>
<td>Group 2</td>
<td>11.80</td>
<td>0.63</td>
</tr>
</tbody>
</table>

It is obvious from table 8 that the score of vocabulary learning attitudes in group 1 is higher than that of the students in group 2. Thus it can be found that the successful students hold more active and positive attitudes toward English vocabulary learning than the less successful ones. This result shows similarity with Wenden's (1998) study, and he points out that the students who hold positive attitudes toward vocabulary learning will use more vocabulary learning strategies to help them to improve their vocabulary level, thus it is more possible for them to obtain comparatively higher scores than those who hold relatively passive attitudes toward vocabulary learning. However, in the present study, it is also surprising to find that the SD value is comparatively high in group 1, which shows that the attitudes held by the high-score students vary considerably, which means that some students in group 1 hold an attitude that is not very positive, though they achieve a high score. This might be an understandable fact that though they think learning vocabulary is not interesting, they still work hard so as to achieve a high score.
3.4.2 Differences in English vocabulary learning strategy use between high-score group and low-score group

In order to see the difference in English vocabulary learning strategy use between the high-score group and the low-score group, the scores of their strategy use are compared, and then the scores of the metacognitive strategies, cognitive strategies and social/affective strategies are compared. The sub-categories of these three strategies are also compared so as to make a detailed comparison and obtain more information about their difference in English vocabulary learning strategy use. To begin with, table 9 below presents the difference in their strategy use.

**Table 9: Differences in strategy use in between high-score group and low-score group**

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>84.20</td>
<td>5.31</td>
</tr>
<tr>
<td>Group 2</td>
<td>73.30</td>
<td>4.08</td>
</tr>
</tbody>
</table>

According to table 9 above, we can clearly see that the high-score students use strategies more frequently than the low-score students, which also indicates the fact that the successful learners might be better at using different strategies more frequently and appropriately to help them to acquire English vocabulary in a better way than the less successful students. Thus in a further way, it demonstrates the fact that vocabulary learning strategy use helps the students in their process of English vocabulary acquisition. This result is in line with the fact that Fedderholdt (1997) has put forward, which is the more language learning strategies the students employ, the better their abilities in language will be. Here, the score represents the students' English vocabulary abilities, and the higher-score students adopt more learning strategies than the lower-score students. Moreover, the SD values in both groups do not show extremes. In order to gain an insight into the strategy use at three levels, namely, metacognitive strategies, cognitive strategies and social/affective strategies, the following table 10 is made to show the information about their adoption.
Table 10 Differences in the three categories of strategies between high-score group and low-score group

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Group 1</th>
<th>Group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Metacognitive</td>
<td>31.90</td>
<td>2.33</td>
</tr>
<tr>
<td>Cognitive</td>
<td>36.60</td>
<td>2.50</td>
</tr>
<tr>
<td>Social/affective</td>
<td>15.70</td>
<td>1.25</td>
</tr>
</tbody>
</table>

Table 10 above reflects the fact that even though the less successful learners adopt less strategies in their language learning process, they are still possible to be found adopting the strategies which are similar to the ones used by the successful learners, which is pointed out by Van and Abrahman (1990) (quoted by Oxford: 1996). We can see that the high-score students adopt more metacognitive strategies, cognitive strategies as well as social/affective strategies than the unsuccessful students who got low scores. Furthermore, since the total score and the items in the questionnaire are the same at the metacognitive level as well as at the cognitive level, it can thus also be found in table 10 that both the successful students and the less successful students adopt cognitive strategies more frequently than metacognitive strategies, which indicates that the successful learners are better at using these strategies than the less successful learners. As to the SDs at each dimension, there is no extremes to show the differences. The reason why the SD values of social/affective strategy use is much smaller in both two groups than the other two strategies is because the total grades of social/affective strategies are less than the grades of the other two strategies, which can be clearly seen in both the 3.2 and 3.3 section. In order to see the differences in their specific strategy use in the subcategories of these three strategies, the following table 11, 12 and 13 are made to show their differences.

Table 11: Differences in the sub-categories of metacognitive strategies between high-score group and low-score group

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Group 1</th>
<th>Group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Learner autonomy</td>
<td>8.60</td>
<td>1.35</td>
</tr>
<tr>
<td>Planning-making</td>
<td>7.60</td>
<td>1.90</td>
</tr>
<tr>
<td>Selective attention</td>
<td>8.10</td>
<td>1.10</td>
</tr>
<tr>
<td>Reviewing and testing</td>
<td>7.60</td>
<td>0.52</td>
</tr>
</tbody>
</table>
From the above table 11, we can find that the successful English learners do employ learner autonomy, planning-making, selective attention as well as reviewing and testing strategies more frequently than the less successful students, which indicates the fact that the successful learners might be more conscious than the less successful learners adopting these strategies to help them to improve their English vocabulary level. The SDs show no especial case, except the one of the reviewing and testing (0.52) strategy used by the high-score students, which means most high-score students choose the similar value to show their adopting frequency of this strategy. In addition, in the high-score group, it appears the successful learners adopt learner autonomy more frequently than the other three strategies, which indicates the fact that the successful learners have a relatively higher degree of self-discipline in the process of English vocabulary learning. On the contrary, in the low-score group, the students employ learner autonomy least frequently among these four strategies, which implies that the less successful students are less conscious than the successful learners. Detailed information about their differences in the sub-categories of cognitive strategies is presented in the following table 12.

**Table 12:** Differences in the sub-categories of cognitive strategies between high-score group and low-score group

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Group 1</th>
<th>Group 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Memorization</td>
<td>8.90</td>
<td>1.60</td>
<td>7.80</td>
<td>1.81</td>
</tr>
<tr>
<td>Guessing</td>
<td>9.80</td>
<td>1.03</td>
<td>9.20</td>
<td>0.92</td>
</tr>
<tr>
<td>Dictionary-use</td>
<td>9.10</td>
<td>1.37</td>
<td>8.60</td>
<td>1.35</td>
</tr>
<tr>
<td>Note-taking</td>
<td>8.80</td>
<td>1.40</td>
<td>7.30</td>
<td>2.50</td>
</tr>
</tbody>
</table>

From table 12 above, it can also be seen that the successful learners in group 1 use these strategies more frequently than the students in group 2. Furthermore, in group 1, it appears that guessing strategies rank highest among these four strategies, which demonstrates that the successful learners use guessing strategies more frequently than the other three strategies. It is similar in group 2 where the guessing strategies also rank highest among the four strategies, which means the less successful learners also adopt the guessing strategies more frequently than the other three strategies, but less frequently than the successful learners. However, it is interesting to find that in group 2, though the low-score students use memorization comparatively more frequently, there is an extreme phenomenon, which is reflected by the
SD=1.81 which means the students' choices vary considerably, that is, some use memorization strategy rather frequently, while some hardly use it. Similary, both the dictionary-use strategy and note-taking strategy show this phenomenon, especially the note-taking strategy adopted by the low-score students. However, compared with table 11, it can be found that both the successful learners and the less successful learners use more frequently the strategies in the sub-categories of the cognitive strategies than the strategies in the sub-categories of the metacognitive strategies. Last but not least, table 13 below shows the differences in the sub-categories of social/affective strategies between the high-score group and the low-score group.

**Table 13:** Differences in the sub-categories of social/affective strategies between high-score group and low-score group

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Group 1</th>
<th>Group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Affective control</td>
<td>8.60</td>
<td>0.84</td>
</tr>
<tr>
<td>Social activities</td>
<td>7.10</td>
<td>0.88</td>
</tr>
</tbody>
</table>

Evidently, from the above table 13 it can be found that successful learners in group 1 use both the affective control and the social activities more frequently than the less successful students in group 2. Moreover, both the successful learners and the less successful learners use affective control more frequently than social activities. The above fact, in a further way, indicates the fact that the successful learners can control their feelings in a better way, and furthermore, it is more probable that the successful learners to conduct more communications with the teachers and their classmates as well as with foreigners in English than the less successful learners. Thus it seems the successful learners are conscious and active in seeking opportunities to practice and communicate in English so as to improve their English vocabulary as well as their overall ability.

In a word, the differences on the whole English vocabulary learning strategy adoption between the high-score group and the low-score group are apparent. The successful learners generally employ English vocabulary learning strategies more frequently than the less successful ones. In addition, at the level of the three strategies, both the successful learners and the less successful learners adopt cognitive strategies more frequently than me coguctive strategies and social/affective strategies. At the sub-categories of the three strategies, the
successful learners still adopt all the strategies more frequently that the less successful learners. Furthermore, at the sub-categories of metacognitive strategies, learner autonomy is the most frequently used strategy among four strategies by the successful learners, but it is the least frequently employed one by the less successful learners. At the sub-categories of cognitive strategies and social/affective strategies, both the guessing strategies and affective strategies are the strategies more frequently adopted by both the successful learners as well the less successful ones.

3.5 Pedagogical implications

In the light of the above investigation results, some suggestions can be drawn for English vocabulary teaching. First of all, in order to help the students to hold a positive attitude toward English vocabulary learning, the teacher can make attempts to arouse the students' interest in vocabulary learning, for example, by adopting appropriate and interesting teaching materials, teaching methods or techniques to stimulate their motivation to learn English vocabulary.

Second, the teacher should also introduce metacognitive strategies, cognitive strategies and social/affective strategies to the students and encourage them use them more frequently in their vocabulary learning process. For instance, at the category of metacognitive strategies, based on the investigated results shown in the above analysis, we can say that it is of vital importance for the teacher to introduce, emphasize as well as encourage the college students to use metacognitive strategies frequently and especially enhance their learner autonomy, in which way, the teacher can achieve the goal of offering conducive help for the students to acquire English vocabulary. As regards cognitive strategies, the teacher can introduce methods of using guessing strategies in a better way and also encourage more students to take notes in the classroom and often stress the importance of note-taking, thus assisting them in the process of English vocabulary acquisition. With regard to the social strategies, it is of vital importance to help the students to cultivate a healthy state of mind on the way to achieve a high level of English ability. In addition, encouraging the students to spend more time in communicating with teachers, classmates as well as foreigners is also an advisable suggestion for the teachers.
Last but not least, the teacher should also take initiative to conduct English communication frequently so as to provide an English environment in which the students are able to practice and use English more often, which is undoubtedly helpful for the students' English vocabulary acquisition.

Thus, the above pedagogical implications show how the teachers can help and encourage the students in a better way in the students' process of English vocabulary learning.

4. Summary and Conclusion

This study is designed to explore the general pattern of English vocabulary learning attitudes and the adoption of vocabulary learning strategies among some college students in English majors in China. In addition, it attempts to find out the relationship between English vocabulary learning attitudes and vocabulary learning strategy use, strategy use and English vocabulary level. Furthermore, it investigates the differences in vocabulary learning attitudes and strategy uses between the high-score group and the low-score group.

Through the detailed analysis and discussion which are based on the vocabulary test and the questionnaire, the research finds that in general, the students view English vocabulary learning as an activity which learners sometimes feel to be a little bit boring and monotonous. As far as the English vocabulary learning strategies are concerned, the investigated students employ a variety of different strategies to facilitate their English vocabulary acquisition in their learning process. Among the three levels, cognitive strategies are the most frequently used ones by the investigated students. At the metacognitive level, selective attention strategies are the most frequently adopted ones, which means they have a clear idea about selecting which words to learn. However, the other three strategies, namely, learner autonomy, planning-making as well as reviewing and testing strategies are less used by the investigated students, which results in their relatively poor performance in the metacognitive strategies.

In the category of cognitive strategies, guessing strategies and dictionary-use strategies are the most frequently used ones by the investigated students, whereas note-taking strategies and memorization strategies are comparatively less frequently used by the investigated learners. An elaborated analysis shows that at the category of guessing strategies, the strategy of using background knowledge is much more frequently used by the investigated students than the
strategy of using linguistic cues. While at the category of dictionary-use strategies, students are more mature learners in looking-up strategies than in the strategy of using dictionary for comprehension. In the note-taking strategies, meaning-oriented note-taking is the strategy the investigated students often resort to, which is followed by the usage-oriented note-taking strategy. At last, in the memorization strategies, grouping strategies are more preferred by the students than the repetition and association strategies.

Last but not least, in the category of social/affective strategies, the students are more positive in using affective control strategies, and give less priority to the strategy of social activities, which indicates that the students seldom actively seek chances to practice and learn English through communication with their teachers, classmates or foreigners.

Furthermore, the research finds that the vocabulary learning attitudes are significantly correlated with the strategies at the three levels of strategies. The three strategies are also significantly correlated with the English vocabulary level. In addition, the vocabulary level is significantly correlated with learner autonomy, memorization strategies, note-taking strategies and affective control strategies.

The research also investigates the differences in the strategy uses between the high score group, which shows that on the whole, the successful English learners use all these different strategies more frequently than the less successful English learners.
References


Appendices

Appendix 1

A vocabulary test for the first-year students in English majors.

Major: Name: Class:

Directions: There are thirty incomplete sentences. For each sentence there four choices marked A, B, C, and D. Choose one word or phrase that best completes the sentence. Please indicate your answer with a tick. (20 minutes).

1. Which of the following italicized phrases indicates CAUSE?
   A. Why don't you do it for the sake of your friends?
   B. I wish I could write as well as you.
   C. For all his efforts, he didn't get an A.
   D. Her eyes were red from excessive reading.

2. Nancy's gone to work but her car's still there. She ____ by bus.
   A. must have gone   B. should have gone
   C. ought to have gone   D. could have gone

3. He feels that he is not yet ____ to travel abroad.
   A. too strong   B. enough strong   C. so strong   D. strong enough

4. After ____ seemed an endless wait, it was his turn to enter the personnel manager's office.
   A. that   B. it   C. what   D. there

5. Fool ____ Jerry is, he could not have done such a thing.
   A. who   B. as   C. like   D. that

6. Which of the following sentences is INCORRECT?
   A. They each have two tickets.
   B. They cost twenty yuan each.
   C. Each they have bought the same book.
   D. They were given two magazines each.

7. She seldom goes to the theatre, ____?
   A. doesn't she   B. does she   C. would she   D. wouldn't she

8. Dr Johnson is head of the department, ____ an expert in translation.
   A. or   B. either   C. but   D. and
9. When one has good health, _____ should feel fortunate.
   A. you   B. they   C. he   D. we

10. It is necessary that he ____ the assignment without delay.
    A. hand in   B. hands in   C. must hand in   D. has to hand in

11. In the sentence "It's no use waiting for her", the italicized phrase is)____.
    A. the object   B. an adverbial   C. a complement   D. the subject

12. Which of the following sentences is INCORRECT?
    A. All his lectures are very interesting.
    B. Half their savings were gone.
    C. Many his friends came to the party.
    D. Both his sisters are nurses.

13. Which of the following sentences has an object complement?
    A. The directors appointed John manager.
    B. I gave Mary a Christmas present.
    C. You have done Peter a favour.
    D. She is teaching children English.

14. Which of the following words can NOT be used to complete "We've seen the film ____"?
    A. before   B. recently   C. lately   D. yet

15. _____ should not become a serious disadvantage in life and work.
    A. To be not tall   B. Not being tall
    C. Being not tall   D. Not to be tall

16. Due to personality _____, the two colleagues never got on well in work.
    A. contradiction   B. conflict   C. confrontation   D. competition

17. During the summer vacation, kids are often seen hanging _____ in the streets.
    A. about   B. on   C. over   D. out

18. There were 150 ____ at the international conference this summer.
    A. spectators   B. viewers   C. participants   D. onlookers

19. School started on a ____ cold day in February.
    A. severe   B. bitter   C. such   D. frozen

20. In the face of unexpected difficulties, he demonstrated a talent for quick, ____ action.
    A. determining   B. defensive   C. demanding   D. decisive

21. The team has been working overtime on the research project ____. 
A. lately  B. just now  C. late  D. long ago
22. Because of the economic crisis, industrial output in the region remained
   A. motionless  B. inactive  C. stagnant  D. immobile
23. The police had difficulty in ____ the fans from rushing on to the stage to take
   photos with the singer.
   A. limiting  B. restraining  C. confining  D. restricting
24. Joan is in the dorm, putting the final ____ to her speech.
   A. details  B. remarks  C. comments  D. touches
25. His ____ in gambling has eventually brought about his ruin.
   A. indulgence  B. habit  C. action  D. engagement
26. The teacher told the students to stay in the classroom and they did ____.
   A. absolutely  B. accidentally  C. accordingly  D. accurately
27. You can actually see the deer at close range while driving through that area. The
   italicized
   phrase means ____.
   A. clearly  B. very near  C. quickly  D. very hard
28. He listened hard but still couldn't ____ what they were talking about.
   A. make over  B. make up  C. make upon  D. make out
29. For the advertised position, the company offers a(n) ____ salary and benefits
   package.
   A. generous  B. plentiful  C. abundant  D. sufficient
30. As there was no road, the travelers ____ up a rocky slope on their way back.
   A. ran  B. hurried  C. scrambled  D. crawled
Appendix 2

**Key to multiple choice in the vocabulary test.**

1-10: D A D C B C B D C A
11-20: D C A D B B A C B D
21-30: A C D D A C B D A C
Appendix 3

Questionnaire for the students in English major

**Questionnaire on college students' English vocabulary learning strategies**

Major: Class:

**Directions:** There are thirty-five questions in this questionnaire. For each question, there are five numbers to choose. ‘1’ means ‘Absolutely Disagree’; ‘2’ means ‘Basically Disagree’; ‘3’ means ‘sometimes yes and sometimes no’; ‘4’ means ‘Basically Agree’; ‘5’ means ‘Absolutely Agree’. Please circle the number that corresponds your opinion best for each question. Please note that there is no true answer and the result will not be marked, and please respond each question truthfully.

1. Vocabulary learning is not a mechanical process. 1 2 3 4 5
2. The key to remember new words is not just repetition which means monotonousness and tediousness (单调乏味). 1 2 3 4 5
3. Vocabulary learning is an activity that does not lack creation. 1 2 3 4 5
4. I am interested in learning English vocabulary. 1 2 3 4 5
5. I can find a sense of achievement (成就感) from vocabulary learning 1 2 3 4 5
6. Except the textbook, I also read other English materials that I am interested in out of class so as to enlarge the vocabulary. For example, English magazines, English movies. 1 2 3 4 5
7. I buy vocabulary book and learn them by myself. 1 2 3 4 5
8. I write diary in English and try to use the words that I have recently learnt. 1 2 3 4 5
9. I have definite (明确的) object and plan for vocabulary learning. 1 2 3 4 5
10. I have a fixed time and amount for vocabulary learning (固定的词汇学习时间和学习量). 1 2 3 4 5
11. I can insist on my plan of vocabulary learning rather than sometimes do it and sometimes not (三天打渔两天晒网). 1 2 3 4 5
12. I know what kind of words need to learn. 1 2 3 4 5
13. While reading some materials, I focus on the key words that are helpful for comprehension.
12345
14. When coming across (碰到) new words, I definitely know whether I should remember it or not.
12345
15. I review the words I have recently learnt regularly (定期复习).
12345
16. I often test my vocabulary ability, for example, write the corresponding English words according the Chinese meaning.
12345
17. I often do vocabulary test with my friends, for example, I say an English word, and ask him (her) the meaning of that word.
12345
18. When trying to memorize the new words, I repeatedly read the words (反复朗读).
12345
19. I memorize a new word by associating it with other words I have already known, for example in order to remember sling, I will associate to sting.
12345
20. I often try to categorize a new word to its synonyms (近义词) or antonyms (反义词) so as to remember it.
12345
21. When encountering (碰到) new words, I will guess its meaning according to the context.
12345
22. I often guess a new word based on common sense or my understanding about its background knowledge.
12345
23. I guess a new word by looking at the grammar and the structure of the sentence where the word lies (看生词所在的句子的语法结构).
12345
24. While coming across a new word, I will refer to the dictionary immediately if it is available.
12345
25. I look up the word only when I think it is important for understanding the materials.
12345
26. When I am not sure the meaning of a word, I will look it up.
12345
27. I note the new words as well as their meanings in my notebook.
12345
28. When I find some good phrases or expressions, I will write them down in the notebook.
12345
29. Except writing the meaning of a new word, I also note its synonyms, antonyms and its example sentences in the notebook.
12345
30. When learning vocabularies, I can calm down without being affected by other disturbance.
12345
31. I hate learning the new words that are complicated (复杂的单词). 1 2 3 4 5
32. I will tell myself to take it easy when I can not remember the word that I have learnt. 1 2 3 4 5
33. I communicate with other classmates trying to use the words that I have recently learnt. 1 2 3 4 5
34. I will try to find opportunities to talk to the foreigners. 1 2 3 4 5
35. I go to English corner (英语角) to practice English by using as many new words as possible. 1 2 3 4 5