Learning how to Learn
-A study of English vocabulary learning strategies among
English major students at a Chinese university

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Abstract:
This paper reports on the study of the strategy use of Chinese English majors in vocabulary learning; the individual differences between effective and less effective learners in employing vocabulary learning strategies and the relationship between their strategies and their outcome in English learning. In this research, 118 junior English majors in Chinese University were investigated. The participants were asked to take a vocabulary test and complete a vocabulary-learning questionnaire.

The data collected was analyzed using the SPSS (the Statistical Package for Social Science) and the result indicates that there are significant differences between effective and less effective learners. Effective learners use strategies more frequently and flexibly, while less effective learners turn out to be rote learners. They employ repetition strategy more often and they rely more on their mother tongue, Chinese, in vocabulary learning. Thus the translation strategy was extensively used among them. The result also shows that seven strategies, namely applied, categorization, self-monitoring, cooperation, media, elaboration and dictionary strategy are positively correlated with the vocabulary test scores and the Test for English Majors (Grade 4) scores. The above findings have certain implication for both learners and teachers.

Keywords: vocabulary learning strategies; English majors; individual differences correlations
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1. Introduction

In the process of the reform and opening up of China, economic and cultural communication with foreign countries has becomes active in China. As an international language, English instead of Russian has became the most popular foreign language in China. English is a required course in the middle high school and university, and millions of Chinese students are struggling to learn English. In their language learning process, vocabulary acquisition is one of the most important parts.

Vocabulary, as an integral part of a language, plays a crucial part in the language learning process. The lack of vocabulary knowledge affects the other five language skills, such as listening, speaking, reading, writing and translating. Unfortunately, many students find it hard to acquire vocabulary. Gu and Johnson cite Meara (1996) who concludes that “learners themselves readily admit that they experience considerable difficulty with vocabulary, and most learners identify the acquisition of vocabulary as their greatest single source of problems.” (Gu & Johnson, 1996:655)

In the second language acquisition process, the second language learners have to learn thousands of word families, which may be similar or quite different from their first language vocabulary. There are many different effects that affect second language vocabulary acquisition, such as L1, age, amount of exposure, motivation, and culture (Schmitt, 2000: 116). In the process of learning such an impressive amount of vocabulary, the language learner turns to different kinds of vocabulary learning strategies.

Researches done by Rubin (1981), Oxford (1985) and Chamot (1987) shows that the use of language learning strategies can indeed facilitate the acquisition of vocabulary, and can enhance language performance and influence second language acquisition as well (Ellis, 1987:531). Therefore understanding how learners employ strategies in vocabulary learning may provide instructional implications both to language teaching
and learning.

Studies have been made to investigate learning strategies that focus on age differences, gender differences, the ‘good language learner’s studies’, and so on. The present study was designed to investigate the vocabulary learning strategies used by English majors in Chinese universities, and try to find the connection between the applied strategies and the learning outcome.

1.1 Aim

This essay aims at investigating the strategies used by Chinese English majors in vocabulary learning; the individual differences between effective and less effective learners in employing vocabulary learning strategies and the relationship between their strategies and their outcome in English learning.

1.2 Material and Method

In order to carry out this investigation, the participants and materials are chosen with deliberation. A questionnaire and a vocabulary test are employed as research methods.

1.2.1 Participants

The participants in this study are one hundred and eighteen third-year English majors in a Chinese University, who range in age from 21 to 23. By the time of the study, these learners had all had nine years or more than nine years of English learning experience. They are now English major students in the university, and they have formed their own ways of learning English.

1.2.2 Questionnaire

A questionnaire (See Appendix 2) was used to measure the frequency of the use of
vocabulary learning strategies. The questionnaire includes 35 items. Many of the items were chosen according to the questionnaire Strategy Inventory for Language Learning (SILL) designed by Oxford (Ellis, 1990: 98). Many other items which are used extensively among the Chinese students were also added to the questionnaire for use in this study.

The questionnaire consists of two parts: questions to gain demographic information about the participants and questions relating to the strategies that the participants may have employed. In this questionnaire, the participants were asked to note the frequency of strategies on a 5-point scale, ranging from ‘Never or almost never true of me’ (1) to ‘Always or almost always true of me’ (5). All the items were presented in Chinese. Necessary and sufficient explanations were given for the items, which were expected to be hard to understand.

1.2.3 Vocabulary Test

In addition to the questionnaire, a vocabulary test is also given. It (See Appendix 1) consists of two parts: multiple choice and blank filling. In the first part, students were asked to choose the synonym, antonym paraphrases and proper words according to a certain word or context. In the second part, students were asked to fill the blank with a proper word form according to the sentences. There are 50 items in total in this test.

The vocabulary in this test are carefully selected from the syllabus of English majors in China. All these words appear in a relatively high frequency in most kinds of national English tests such as CET-4, CET-6, and TEM-4. As these tests are authority tests carefully formed by experts and examined several times by selected students before the tests are formally given to the testees all over the country, the vocabulary chosen in these test can test the students’ language proficiency.

In addition to the vocabulary test, there is another proficiency measure, which is the
requirement of the TEM-4 score. Test for English Majors (TEM-4) which covers listening, reading, cloze, writing, vocabulary and grammar was used as a proficiency measure for its great reliability, and it is consider to give a good indication of the students’ English competence.

1.2.4 Procedures

The questionnaires were taken to class by the teachers, and the students were administered to finish it. Necessary explanation on how to respond to the items was given to the students. They were encouraged to ask questions if they had difficulty in understanding the items. Students were also told not to discuss the answers with their classmates, because strategies differ from person to person.

The vocabulary test paper was distributed immediately after the questionnaire was finished. The participants were asked to do it by themselves. The vocabulary test papers were collected together with the questionnaires.

The data collected is dealt with through SPSS (the Statistical Package for Social Science).
2. Theoretical Background

In this section, the theories and terminologies which are relevant to the dissertation will be presented. Firstly, various kinds of definitions and classifications of learning strategies will be reviewed. Then, the relationship between learning strategies and context will be discussed. Lastly, person-dependent vocabulary learning strategies and task-dependent vocabulary learning strategies will be introduced.

2.1 Definitions of Learning Strategies

There is no agreement regarding the definition of learning strategies in the literature. Different scholars hold different views on learning strategies. It is partly because the concept of strategy is fuzzy and also partly because terms such as skill, strategy, process and approaches are used differently by different people. According to Rubin, learning strategies are strategies which contribute to the development of the language system which the learner constructs and affect learning directly (Ellis, 1987:531). In Chamot’s view, learning strategies are techniques, approaches or deliberate actions that students take in order to facilitate the learning, and the recalling of both linguistic and content area information (Ellis, 1987:531). And Oxford defines language learning strategies as behaviors or actions which learners use to make language learning more successful, self-directed and enjoyable (Ellis, 1987:531).

Although there is disagreement on the definition of second language learning strategies, it can be concluded that the mentioned definitions or explanations try to approach the concept from two levels. Broadly speaking, it refers to general tendencies and overall behaviors or techniques employed by learners to handle the language learning tasks. Narrowly, it refers to the learner’s direct manipulation of the linguistic information in language comprehension or production.

Although a complete definition of learning strategies does not exist, the main
characteristics are available to help define learning strategies. After a survey questionnaire among a group of second-language learner strategy experts, Cohen listed some agreed features to explain the prototype of the definition of learning strategies. These features are arranged in a descending order of agreement.

A. Purpose or goal orientation
B. Sequence of action
C. Focus of attention
D. Degree of monitoring
E. Level of observability
F. Deliberateness
G. Extent of evaluation
H. Self-initiation
I. Degree of planning

(Cohen, 2005: 56)

Cohen’s attempt to describe the prototype of strategies is a step forward concerning defining learning strategies and trying to reflect the nature of learning strategies. The definition of learning strategies prepares the groundwork for the further research in this aspect.

2.2 Classification of Learning Strategies

In the 1980s and early 90s, research mainly focused on the category of strategies. As a result, several taxonomies were proposed to classify them. The works of O’Malley and Chamot, Oxford and Schmitt have made an important contribution to our knowledge of learning strategies, which will be demonstrate in the following paragraphes.

In O’Malley and Chamot’s framework, three major types of strategies are classified,
namely metacognitive strategies, cognitive strategies and social-affective strategies. Metacognitive strategies involve thinking about the learning process, planning for learning, monitoring of comprehension of production while it is taking place, and self-evaluation after the learning activity has been completed. Cognitive strategies are more directly related to individual learning tasks and entail direct manipulation or transformation of the learning materials (O’Malley & Chamot, 1999:8). Social–affective strategies concern the ways in which learners choose to interact with other learners and native speakers.

In 1990, Oxford proposed a more comprehensive model in which six categories were classified into two groups as direct and indirect strategies. The direct strategies include memory strategies, cognitive strategies and compensation strategies, while the indirect strategies include metacognitive strategies, affective strategies and social strategies. In Bedell and Oxford’s work, Oxford and Burry-Stock (1995) also describe the Strategy Inventory for Language Learning (SILL), which strong predictive validity with relation to language performance, and concurrent validity as evidenced through correlations with language performance, learning style, and setting characteristics (Bedell & Oxford, 1996:49).

However, based on the research of the previous scholars, Schmitt (2000) focuses on the vocabulary acquisition, and listed fifty-eight different strategies. These vocabulary learning strategies are categorized in two ways. First, the strategies are divided into two major classes, namely strategies that are useful for the initial discovery of a word’s meaning and strategies that are useful for remembering that word once it has been introduced. Second, the strategies are further classified into five groupings, listed as follows: (1) determination strategies used by an individual when faced with discovering a new word’s meaning without recourse to another person’s expertise; (2) social strategies represent the interaction with other people to improve language learning; (3) memory strategies involve relating the word to be retained with some previously learned knowledge, using some form of imagery, or grouping; (4)
cognitive strategies exhibit the common function of manipulation or transformation of the target language by the learner; (5) metacognitive strategies involve a conscious overview of the learning process and making decisions about planning, monitoring, or evaluating the best ways to study (Schmitt, 2000:135-136).

Most strategies discussed in this study were chosen from O’Malley and Chamot’s (1999) model, and some other strategies were added for use in this study, which are used extensively among the Chinese students. All of them are presented in Table 1 with specific descriptions.

Table 1 Classification of learning strategies

<table>
<thead>
<tr>
<th>Learning Strategy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Metacognitive</strong></td>
<td></td>
</tr>
<tr>
<td>Planning</td>
<td>Making a general but comprehensive preview of the concept or principle in an anticipated learning activity.</td>
</tr>
<tr>
<td>Self-management</td>
<td>Understanding the conditions that help one learn and arranging for the presence of those conditions.</td>
</tr>
<tr>
<td>Selective attention</td>
<td>Deciding in advance to attend to specific aspects of language input or situational detail that will cue the retention of language input.</td>
</tr>
<tr>
<td>Self-monitoring</td>
<td>Correcting one’s speech for accuracy in pronunciation, grammar, vocabulary, or for appropriateness related to the setting or to the people who are present.</td>
</tr>
<tr>
<td>Self-evaluation</td>
<td>Checking the outcome of one’s own language learning against an internal measure of completeness and accuracy.</td>
</tr>
<tr>
<td><strong>Cognitive</strong></td>
<td></td>
</tr>
<tr>
<td>Dictionary strategies</td>
<td>Defining or expanding a definition of a word or concept through the use of dictionary.</td>
</tr>
<tr>
<td>Repetition</td>
<td>Imitating a language model, including overt practice and silent rehearsal.</td>
</tr>
<tr>
<td>Note-taking</td>
<td>Writing down the main idea, important points, outline, or summary of information presented orally or in writing.</td>
</tr>
<tr>
<td>Elaboration</td>
<td>Relating new information to other concepts in memory.</td>
</tr>
<tr>
<td>Key word</td>
<td>Memorizing a new word in the second language by identifying a familiar word in the first language that sounds like or otherwise resembles the new word, and generating easily recalled images of some relationship with the new word.</td>
</tr>
<tr>
<td>Application</td>
<td>Putting the new language learning task into practical use.</td>
</tr>
<tr>
<td>Imagery</td>
<td>Relating new information to visual concepts in memory via familiar easily retrievable visualizations, phrase, or locations.</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Media strategies</td>
<td>Expanding vocabulary through reading English newspaper or magazines, listening to English songs and watching English movies.</td>
</tr>
<tr>
<td>Categorization</td>
<td>Reordering or reclassifying and perhaps labeling the material to be learned based on common attributes.</td>
</tr>
<tr>
<td>Guessing</td>
<td>Using available information to guess meaning of new items, predict outcomes, or fill in missing information.</td>
</tr>
<tr>
<td>Translation</td>
<td>Using the first language as a base for understanding and/or producing the second language</td>
</tr>
<tr>
<td>Contextualization</td>
<td>Placing a new word or phrase in a meaningful language sequence.</td>
</tr>
<tr>
<td>Cooperation</td>
<td>Working with one or more peers to obtain feedback, pool information, or model a language activity.</td>
</tr>
<tr>
<td>Questioning for clarification</td>
<td>Asking a teacher or peer for repetition, paraphrasing, explanation and/or examples.</td>
</tr>
<tr>
<td>Self-encouragement</td>
<td>Providing personal motivation by arranging rewards for oneself when a language learning activity has been successfully completed.</td>
</tr>
</tbody>
</table>

### 2.3 Context and Vocabulary Learning Strategies

Context here means learning context, which represents the learning environment in which the whole learning process takes place. Different countries provide a unique social background, cultural awareness and political environment for learning. The learning context may be constituted by teachers, the family, the classmates, the peers, the classroom atmosphere, the social or cultural tradition of learning, the curriculum of the school, the availability of books and other materials, the application of media in classroom, the input and output opportunities. It is different from the language context, which refers to the textual or discoursal place where certain words, phrases and structures is used. Some scholars saw learning as an interpsychilgical undertaking between those in society who have mastered knowledge or capability and those who are discovering such knowledge or developing such capabilities (Gu, 2003). Candlin and Mercer cite Leont’ev (1974) who identifies learning as directly equivalent to other social activities in the wider world such as word, or family life, or participation in various everyday situations and institutional settings (Candlin & Mercer, 2001:308).
Second language acquisition is simultaneously social action.

The L2 learners should be active practitioners within the discourse of the learning context in which they find themselves. If the context happens to be a classroom, it will provide very particular opportunities for and specific constraints upon language learning. Some aspects should be paid attention for the achievement of such classroom context--controlling the dimension of discourse, constraint the text of language lessons and learners’ discursive practice in the classroom. Facilitating the kind of social discourse in a language class which is more challenging to its participants than it often is. Such a discourse will positively support the kind of risk-taking among learners that can contribute to deeper and more resilient levels of learning (Gu, 2003).

Learning contexts decide the ways learner acquire the language, as well as the strategies the students use. It is obvious that a learning strategy that is effective in one learning context can be inappropriate in another learning context. “Ethnicity or culture directly influences the choice of language learning strategies” (Bedell & Oxford, 1996:47). Bedell and Oxford describe the point of view of Sutter (1987), who found that if strategies being taught were opposed to learners’ cultural backgrounds, disaster resulted, and certain new strategies are needed under the guise of old, culturally accepted ones. Moreover, Politzer and Oxford and Nyikos (1989) discover that language learning motivations, normally conditioned by culture were influential in strategy choice (Bedell & Oxford, 1996: 48).

In China, English is taught and learned academically. Just as many Asian cultures, Chinese culture view books as containing respectable knowledge and wisdom. Scarcella mentions that memorization of the book word-for-word is seen as the best way to acquire knowledge in these Asian cultures (Scarcella, 1990:56). Compared with language learning strategies related to theoretical models, Chinese students prefer to choose strategies that solve the practical problems. Nowadays, a degree from
a good university is the means to a better job, so Chinese people deeply believe that
great achievement in study can bring a bright future to the student. The Chinese
students are strongly motivated to learn every subject seriously. They do not tend to
take any risks or use strategies for divergent thinking, because in the test, there is only
one correct answer which they have to carry in mind. In addition, without a language
application environment, English is learned as a subject in the courses in China.

2.4 Person-dependent Vocabulary Learning Strategies

The language learning situation differs in every individual learner. Individual
differences influence the learning process, learning rate and the learning results. These
differences include gender, age, language aptitude, intelligence, prior knowledge,
motivation, self-concept/image, personality, and cognitive and learning style (Schmitt,

2.4.1 Effective Learners, less effective Learners and Vocabulary Learning
    Strategies

Ahmed's (1989) study was amongst the earliest ones to find the vocabulary learning
strategies employed spontaneously by the learners. The effective learners are aware of
the definition, conception and other information about a new word, such as the
collocation, pronunciation, spelling, as well as the surrounding context. However, the
less effective learners usually automatically ignored the new word in the context, and
also lacked of the awareness of how to use learning strategies. They played a passive
role in the learning process and did not know how to encode the new word with the
previous acquired words (Ahmed, 1989: 3-14).

Schouten-van Parreren explores the learners’ ability level and their guessing strategies.
The result shows that, compared to the advanced counterparts, underachieving
students usually concentrate on the strange word alone without noticing its context.
They did not acquire the complete knowledge of the new word and had difficulty in integrating knowledge from different sources and material, or encode the problem word with the vocabulary network, which places a large distance between their language level and the native language speakers’ (Schouten-van Parreren, 1989: 75-85).

Gu and Johnson (1996) investigate 850 university EFL (English as second language) students in China, and try to establish a model to explain how different vocabulary strategies are related to language learning outcomes (Gu & Johnson, 1996: 643-679). Strategies like contextual learning, dictionary, key-word and note-taking strategies are successfully studied by researchers. Interestingly, another study of 47 ESL and 43 EFL (English as foreign language) students produces strikingly similar results, suggesting that “time and learner independence were the two measures most closely related to success in vocabulary learning and higher overall English proficiency” (Kojic-Sabo & Lightbown, 1999: 176).

### 2.4.2 Individual Differences and Vocabulary Learning Strategies

A number of case studies demonstrate the individual differences in vocabulary learning. Parry (1997) reports on these studies by Dimitri and Young; Dimitri uses a “holistic” approach, focus on the overall understanding, while Ae Young uses an “analytic” approach, which means spending considerably more time on guessing, analyzing, and intentional learning of each new word. Parry concludes that flexibility in strategy use is needed because “both approaches are necessary but . . . neither is appropriate at all times” (Parry, 1997:18).

In Canada, Sanaoui (1995) carried out a study on the ESL or FSL (French as a second language) student. The participants were divided into three groups and were required to write down the things they did every day as a record for a period of time long as three, four and six weeks. Two ways of vocabulary acquisition were identified in the
research, first one learned words in a structured way. They planned themselves an individual vocabulary learning activity, and took detailed and systematic note of the vocabulary learned. They reviewed these words and records regularly. On the contrary, the other group mostly depended on the classroom instruction and recorded whatever the words taught in the class. They did not know what vocabulary to focus on and did not have any independent plan for themselves. Sanaoui suggested that the two approaches to vocabulary learning should be two ends of a continuum, and that most learners might fall somewhere in between the two ends. Sanaoui also noted in brief another study in which she found that “learners who had a structured learning approach were more successful in retaining vocabulary taught in their classes than learners who had an unstructured learning approach”, and that “a structured approach was found to be more effective than an unstructured approach for both beginning and advanced learners” (Sanaoui.1995: 26).

Effective learners make their own learning plans, select their valuable words, tend to use various strategies to memorize the selected words, and review the newly acquired word.

### 2.5 Task-dependent Vocabulary Learning Strategies

A learning task is the final product set by the learners as the aim of the learning. Learning a certain structure, remembering a meaning of a new word, or mastering a foreign language, all these can be a learning task. The learning materials involved in the learning task are also a part of the learning task, as well as the strategies the learner planned to use in finishing the task, such as memory, reading, or repetition. Based on the types of materials, goals, and the difficulty levels of the tasks, learner selects different learning strategies. It is obvious that learning a word in a handbook and learning the same word in a movie require different learning strategies. Recognizing a word in a reading passage is also different from use the same word in the passage writing (Numan, 1989:25).
2.5.1 Guessing and Vocabulary Learning

It is the belief that the vast majority of words in L1 come from extensive and multiple exposures through use rather than direct instruction, and therefore, vocabulary learning in a second language should follow the same route (Coady, 1993:3-23).

Does guessing lead to incidental vocabulary learning in a second language? Krashen mentions a study done by Ferris (1988), in which 30 adult ESL students read George Orwell's novel *Animal Farm*. These students had to do a vocabulary test before and after they read the novel, and to make sure that a control group of 21 international students who did not read the novel before. The experimental group who read the novel got significantly better a result than the control group (Krashen, 1989: 446).

However, some studies argue that learners sometimes cannot guess the meaning of a new word from the surrounding context. This provides two pieces of advice. First, the language learners limited by their shortage of target language knowledge are less effective guessers and underachieving incidental learners of vocabulary. Second, without the basic language skill to analyze the construction and the surrounding context, the L2 learners face much more obstacles in learning vocabulary incidentally than the L1 learners (Gu, 2003).

2.5.2 Dictionary Use and Vocabulary Learning

It is noticed that a dictionary is among the very first things that the language learners buy, and they would always carry the dictionary with them in the language learning process. There is always debate among language teachers and lexical scholars of whether dictionaries should be used in the foreign language classroom; if it should be used, then, what kind of dictionary should be used. Previous study on dictionaries has focused on comparing the usefulness of the dictionaries with that of guessing, and its effect in reading comprehension (Gu, 2003).
Summers (1988) reports the results of three experiments which aim at testing the effectiveness of the Longman Dictionary of Contemporary English both in reading comprehension and in vocabulary learning. The first two experiments focused on reading comprehension, which then found that with the application of the dictionary, the comprehension of the passage was greatly improved. The last experiment required the subjects to make sentences by the given words. It found that the definition and the examples in the dictionary were helpful. It was proved that application of dictionaries is effective to produce new words (Summer, 1988:125).

2.5.3 Note-taking and Vocabulary Learning

After getting information about a new word, learners may take notes, in the vocabulary notebooks, or vocabulary cards. However, learners have their own customs in note-taking, which may different from others. These differences tell the effective learners from the less effective learners.

In a study not specifically designed for the study of note-taking strategies, Ahmed (1989) collected think-aloud, observation, and interview data from 300 Sudanese EFL learners. Ahmed found that note-taking was a strategy widely used by these Sudanese learners, and that this note-taking strategy did not distinguish the good from the poor learners. However, Ahmed did not discuss why the note-taking did affect the learning result of these learners. This was partly due to the fact that Ahmed’s study examined the overall pattern of vocabulary learning strategies rather than note-taking (Ahmed,1989:13).

2.5.4 Repetition and Vocabulary Learning

Facing countless foreign words to memorize, the language learner always naturally turns to repetition naturally. It is the easiest strategy people pick up spontaneously—
—simply, repeating new words until they can be recognized. Supportive evidence on this point of view can be found in the literature. Crothers and Suppes found that almost all of their participants remembered all 108 Russian-English word pairs after 7 repetitions, and about 80% of 216 word pairs were learned by most participants after 6 repetitions (Crothers & Suppes, 1967: 56). In the fact, the result of the experiment indicates that repetition is useful in remembering word pairs. Without many repetitions, language learners can easily memorize massive L1-L2 word pairs in not very long time.

However, repetition should be used properly otherwise it becomes rote. The Language learner may attend to the intervals of repetition, as well as the amount of word lists that are repeated in each time (Gu, 2003).
3. Analysis and Discussion

This section analyzes the data collected according to the two methods applied in the present study: a vocabulary test and a questionnaire. The vocabulary test examines the language proficiency of the participants and the questionnaire analyses the data from the students’ responses to the multiple choices.

3.1 Overall Patterns of Vocabulary Learning Strategies Used by Chinese Students

Table 2 and Table 3 present descriptive statistics on each category of vocabulary acquisition strategies.

Table 2: Students’ use of strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Mean</th>
<th>Std.Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metacognitive Strategies</td>
<td>2.2847</td>
<td>.44858</td>
<td>118</td>
</tr>
<tr>
<td>Cognitive Strategies</td>
<td>3.0601</td>
<td>.44456</td>
<td>118</td>
</tr>
<tr>
<td>Social-Affective Strategies</td>
<td>2.4344</td>
<td>.64771</td>
<td>118</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td></td>
<td></td>
<td>118</td>
</tr>
</tbody>
</table>

From the statistics, we can see that the average score of the metacognitive (M=2.28, S.D.=. 448) and social-affective strategies (M=2.43; S.D.=. 647) were lower than cognitive strategies. (M=3.06; S.D.=. 444), which indicates that the Chinese English major students tend to use more cognitive strategies to learn vocabulary. More detailed differences of the sub-strategies in these three strategies categories are shown in the following Table 3.
Table 3: Students’ use of sub-strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>1.8139</td>
<td>.52206</td>
<td>118</td>
</tr>
<tr>
<td>Self-management</td>
<td>3.2627</td>
<td>.70353</td>
<td>118</td>
</tr>
<tr>
<td>Selective attention</td>
<td>2.7298</td>
<td>.61221</td>
<td>118</td>
</tr>
<tr>
<td>Self-evaluation</td>
<td>1.6170</td>
<td>.70492</td>
<td>118</td>
</tr>
<tr>
<td>Self-monitoring</td>
<td>2.0000</td>
<td>.98374</td>
<td>118</td>
</tr>
<tr>
<td>Dictionary strategy</td>
<td>3.0385</td>
<td>.75295</td>
<td>118</td>
</tr>
<tr>
<td>Repetition</td>
<td>2.4696</td>
<td>.54395</td>
<td>118</td>
</tr>
<tr>
<td>Note-taking</td>
<td>2.8153</td>
<td>.79699</td>
<td>118</td>
</tr>
<tr>
<td>Elaboration</td>
<td>2.7911</td>
<td>.81231</td>
<td>118</td>
</tr>
<tr>
<td>Key word</td>
<td>3.4923</td>
<td>.62163</td>
<td>118</td>
</tr>
<tr>
<td>Applied</td>
<td>2.9277</td>
<td>.74363</td>
<td>118</td>
</tr>
<tr>
<td>Imagery</td>
<td>3.0809</td>
<td>.70557</td>
<td>118</td>
</tr>
<tr>
<td>Media strategy</td>
<td>2.8963</td>
<td>.98128</td>
<td>118</td>
</tr>
<tr>
<td>Categorization</td>
<td>2.2979</td>
<td>.88086</td>
<td>118</td>
</tr>
<tr>
<td>Guessing</td>
<td>3.5426</td>
<td>.80375</td>
<td>118</td>
</tr>
<tr>
<td>Translation</td>
<td>3.4681</td>
<td>.91525</td>
<td>118</td>
</tr>
<tr>
<td>Contextualization</td>
<td>3.9043</td>
<td>1.0683</td>
<td>118</td>
</tr>
<tr>
<td>Cooperation</td>
<td>1.9644</td>
<td>.80256</td>
<td>118</td>
</tr>
<tr>
<td>Question for clarification</td>
<td>2.2766</td>
<td>.83800</td>
<td>118</td>
</tr>
<tr>
<td>Self-encouragement</td>
<td>3.0612</td>
<td>.85720</td>
<td>118</td>
</tr>
</tbody>
</table>

Anderson (2002) defines metacognitive strategies as “thinking about thinking”. As Anderson states, the use of metacognitive strategies ignites one’s thinking and can lead to better learning and performance (Anderson, 2002:4). But according to the present study, most students ignore this strategy. The least commonly used social strategies were self-evaluating (M=1.61; S.D.=. 704) and planning strategy (M=1.81; S.D.=. 522). However, students are quite positive with the self-management strategy (M=3.26; S.D.=. 703), such as finding a proper place for study or choosing a certain time to study. The rare use of planning, self-evaluating and self-monitoring strategies indicate that, to some extent, most students are passive learners and they always depend on their teachers’ guiding and monitoring.

The students were reported to extensively use contextualization strategies (M=3.90; S.D.=1.068) and guessing strategies (M=3.54; S.D.=. 803), but the use of
categorization (M=2.30; S.D.= .8809), repetition (M=2.47; S.D.= .544) and elaboration strategies (M=2.79; S.D.= .812) ranked the lowest among the cognitive strategies. In the following paragraph, three strategies, repetition, guessing and translation, are specifically discussed because of their special connection with English learner in China, as the Chinese learners are always described tend to use those frequently.

3.1.1 Repetition and Chinese Students

Previous research on vocabulary repetition has noted one important message: it is necessary to use various repetition strategies at the initial stages of vocabulary acquisition. A scholar named Carter points out that “quantities of initial vocabulary can be learned both efficiently and quickly and by methods such as rote learning which are not always considered to be respectable. It may be dangerous to underestimate such a capacity.” (Carter, 1987:153)

Miyake and Shah (1999:97) write that individual differences play an important part in determining a person's memorization capacities. That point of view represents that vocabulary retention is very much a function of an individual's skillfulness in memory strategies. It also means that the ability to memorize and the preference for memorization are dependant upon the cultural background of the learner.

Chinese learners are often described as rote learners who learn mechanically without meaning and understanding (Gu, 2003). Since they have a long tradition of using the repetition strategy to learn words, poems, and ancient literature. However, in this research, repetition strategy was not so frequently used which shows that Chinese students’ traditional concept of learning vocabulary has changed. It is possible that as the development of the Chinese economy, various medias and materials are available to the college students such as radio, mp3 and kinds of vocabulary learning software, so that these students do not have to be dependent on the boring single repetition
3.1.2 Guessing Strategy and Chinese Students

Day, Omura and Hiramatsu (1991) once declared that exposure to unknown or difficult words through sustained silent reading for entertainment by EFL students has a positive effect on their ability to recognize these words in a vocabulary test (Day et al, 1991:545). In this study, the guessing strategy received the second highest mean among cognitive strategies and translation strategy (M=3.46; S.D.=.915) the third.

That the guessing strategy is so widely used may be due to two reasons. First, it is impossible to look up each word while doing a mass of readings. In the Chinese learning context, English is learned academically. Without the availability or opportunity to practice English in daily life, college students learn English from the text and use it in the test. As a result, the guessing strategy is used in this learning context. Second, it is because of the influence of the TEM-4 or TEM-8. Most reading comprehensions in TEM-4 or TEM-8 require students’ overall understanding of the passage and they are encouraged to guess the word meanings while reading instead of looking up the words.

However, it is not enough for the English learner to use the incidental or indirect learning strategy alone to acquire their second foreign vocabulary. At the same time, the intentional or direct learning strategies should not dominant the whole process of foreign language vocabulary acquisition. These two strategies are functioned complimentary in the vocabulary learning. Actually, defining a new word by its context might be just the first one step used by the vocabulary learners. The following steps should be carried out to consolidate the new word, such as use dictionary to expanding the definition or concept or encode the word in a meaningful language sequence. Some may even try to create a sentence using the new word and thus put it back into context (Sanaoui, 1995: 15-28).
3.1.3 The Translation Strategy and Chinese Students

In the acquisition of a second language, the speakers’ first language plays an important role, known as L1 transfer or L1 interference. Diane and Long cite Zobl (1983) who identifies two patterns of L1 influence on Second Language Acquisition. One of them is the pace at which a developmental sequence is traversed (Diane & Long, 1991: 97). It means a learner’s first language can inhibit or accelerate passage through a developmental sequence. In this study, these English learners may be greatly interfered by their mother tongue. For example, there is no article in Chinese. These learners may use deictic determiners as the first approximation to definite articles in English. Even after the mastery of the articles, the mistakes in the use of articles can be easily made in spontaneously English conversations.

As to the translation strategy (M=3.47; S.D.=.91525), the extensive use of it reveals that in the learning process of English, students still cannot get rid of the influence of their native language to learn a target language through the target language. This may impede students to improve their English proficiency. In fact, the Chinese language structures influences the English major students deeply and obstructs them become native English speaker. That is also the origin of ‘Chinglish’(Chinese-English). The English major students should avoid the use of the translation strategy in the learning process. Instead of translating the new word to the Chinese, English learners may try to deliberate and express it in English. That is why a bilingual dictionary is recommended by the most English teachers to their students.

Baxter (1980) describes one common problem amongst EFL students: not being able to access a word in speech and lacking the ability to circumvent that word by providing a definition in the target language. He attributes this problem primarily to students’ use of bilingual dictionaries and strongly advocates the use of monolingual dictionaries that would encourage “conversational definition” (Baxter, 1980: 335). In general, Baxter reiterates the basic concerns of most language teachers, that bilingual
dictionaries

1) encourage translation;
2) foster one-to-one precise correspondence at word level between two languages; and
3) fail to describe adequately the syntactic behaviour of words. (Baxter, 1980: 336)

With the help of bilingual dictionaries, Chinese students access the standard way to express a new word in target language, which may benefit them a lot, and help them avoid using translation strategies in the English learning process.

3.1.4 Other Vocabulary Learning Strategies

Students were generally less likely to use categorization strategy (M=2.29; S.D.=. 880). This may be because, on the one hand, nowadays students are not willing to group words by themselves. On the other hand, there are many vocabulary-learning handbooks at present, so students tend to prefer to memorize words using a vocabulary-learning handbook.

Elaboration strategy (M=2.79; S.D.=. 812) was only occasionally used, which shows that most Chinese students ignore the connection between the new information and what they have learnt so as to hardly establish a network of vocabulary knowledge. This is very important in language learning, because individuals can enhance their memory of concepts if they connect these concepts with more related ideas at the time of study or at the time of recall.

Self-encouragement strategy (M=3.06; S.D.=. 857) ranked highest while the use of cooperation strategy (M=1.96; S.D.=. 802) ranked lowest among social-affective strategies. This result indicates that students rarely join in group activities to communicate or to discuss with others, which results in the likelihood of their attaching importance to inner feelings, thus the self-encouragement strategy was more
positively used. This may have two reasons, first is the face problem. In the Chinese education system, the ultimate aim of the study is to achieve high scores in the test, which allows them to enter well-known universities and gain a degree, so the teaching activity in the classroom is test oriented. There is always only one correct answer to a question, and the different opinions of the question is unacceptable. If students fail to provide the correct answer or use the wrong vocabulary, they may be critiqued by the teacher and lose their face. In other words, it is stressful for Chinese students to speak publicly in English. As a result, they tend to learn English word alone, and try to encourage themselves in the process of learning to achieve better learning results.

From the above descriptive statistics, two general points were revealed. First, compared to cognitive strategies, social-affective strategies and metacognitive strategies were seldom used by Chinese students. Second, students tend to apply various ways to vocabulary learning.

3.2 Individual Differences in the Use of Vocabulary Learning Strategies

In this section, the effective students’ and less effective students’ achievements were measured by means of the vocabulary test scores (30%) and the TEM-4 scores (70%). On the basis of these tests, the learners were divided into two groups: Group A, whose scores average scores are 76.845, consisting of ten effective learners and Group B of ten less effective learners, whose average score are 52.802. Table 4 shows the general proficiency of the two groups.

<table>
<thead>
<tr>
<th>Groups</th>
<th>N</th>
<th>Mean (scores)</th>
<th>Std. Deviation</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>10</td>
<td>76.845</td>
<td>3.8083</td>
<td>.000</td>
</tr>
<tr>
<td>Group B</td>
<td>10</td>
<td>52.802</td>
<td>2.0261</td>
<td></td>
</tr>
</tbody>
</table>
Table 5 and table 6 present the main differences in strategy use between the two groups. It shows that the effective students use a greater variety of strategies and use them more often than the less effective students. They learn English vocabulary actively and spontaneously, which shows their desire to acquire new words—‘I want to learn’. However, the less effective students learn the vocabulary reluctantly and passively, which shows they are pushed by others to learn the vocabulary—‘others want me to learn’. They are lacked of the awareness of how to use vocabulary learning strategies.

Table 5: Differences in strategies use between high and low achievers

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Groups</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metacognitive</td>
<td>Group A</td>
<td>2.4900</td>
<td>.57126</td>
<td>.037</td>
<td>10</td>
</tr>
<tr>
<td>Strategies</td>
<td>Group B</td>
<td>2.0440</td>
<td>.25592</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Cognitive</td>
<td>Group A</td>
<td>3.3770</td>
<td>.43359</td>
<td>.014</td>
<td>10</td>
</tr>
<tr>
<td>Strategies</td>
<td>Group B</td>
<td>2.8990</td>
<td>.35231</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Social-Affective</td>
<td>Group A</td>
<td>2.7180</td>
<td>.42192</td>
<td>.088</td>
<td>10</td>
</tr>
<tr>
<td>Strategies</td>
<td>Group B</td>
<td>2.3680</td>
<td>.44409</td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

From Table 5, we can see that there are significant differences between the two groups in the use of metacognitive strategies and cognitive strategies, yet it is not the case in the use of social-affective strategies. Group A uses all these three learning strategies far more that group B. The biggest difference is the use of cognitive strategies, where it is shown in the table that group A (M=3.377; S.D.=.4335) tends to use cognitive more frequently than group B (M=2.899; S.D.=.3523). Though the less effective students also use the social-affective strategies less often than the advanced students, the difference between these two groups is not as large as the difference between cognitive strategies and the metacognitive strategies. Group B is 2.368 and the group A is 2.718. More detailed differences of the sub-strategies in these three
categories are shown in Table 6.

Table 6: Differences in sub-strategies use between high and low achievers

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Groups</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>Group A</td>
<td>1.816</td>
<td>0.52415</td>
<td>.540</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>1.933</td>
<td>0.27479</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Self-management</td>
<td>Group A</td>
<td>3.299</td>
<td>0.80886</td>
<td>.535</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>3.067</td>
<td>0.82997</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Selective attention</td>
<td>Group A</td>
<td>3.040</td>
<td>0.49710</td>
<td>.084</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>2.620</td>
<td>0.52873</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Self-evaluation</td>
<td>Group A</td>
<td>1.900</td>
<td>0.87560</td>
<td>.137</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>1.400</td>
<td>0.51640</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Self-monitoring</td>
<td>Group A</td>
<td>2.400</td>
<td>1.2649</td>
<td>.011</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>1.200</td>
<td>0.42164</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Dictionary strategy</td>
<td>Group A</td>
<td>3.372</td>
<td>0.70082</td>
<td>.051</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>2.815</td>
<td>0.46670</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Repetition</td>
<td>Group A</td>
<td>2.350</td>
<td>0.49958</td>
<td>.026</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>2.917</td>
<td>0.54195</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Note-taking</td>
<td>Group A</td>
<td>3.033</td>
<td>0.86740</td>
<td>.327</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>2.667</td>
<td>0.75392</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Elaboration</td>
<td>Group A</td>
<td>3.166</td>
<td>0.78991</td>
<td>.066</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>2.467</td>
<td>0.80686</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Key word</td>
<td>Group A</td>
<td>3.534</td>
<td>0.42217</td>
<td>.181</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>3.199</td>
<td>0.63281</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Application</td>
<td>Group A</td>
<td>3.660</td>
<td>0.76041</td>
<td>.002</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>2.560</td>
<td>0.58727</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Imagery</td>
<td>Group A</td>
<td>3.441</td>
<td>0.57189</td>
<td>.088</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>2.890</td>
<td>0.77896</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Media strategy</td>
<td>Group A</td>
<td>3.700</td>
<td>0.99861</td>
<td>.059</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>2.900</td>
<td>0.75645</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Categorization</td>
<td>Group A</td>
<td>2.600</td>
<td>0.65828</td>
<td>.002</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>1.650</td>
<td>0.47434</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Guessing</td>
<td>Group A</td>
<td>3.975</td>
<td>0.51975</td>
<td>.113</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>3.575</td>
<td>0.55340</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Translation</td>
<td>Group A</td>
<td>3.200</td>
<td>1.0593</td>
<td>.629</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>3.450</td>
<td>1.2122</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Contextualization</td>
<td>Group A</td>
<td>4.500</td>
<td>0.52705</td>
<td>.062</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>3.700</td>
<td>1.1595</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Cooperation</td>
<td>Group A</td>
<td>2.300</td>
<td>0.59587</td>
<td>.009</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>1.500</td>
<td>0.63382</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Question for clarification</td>
<td>Group A</td>
<td>2.650</td>
<td>0.57975</td>
<td>.472</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>2.400</td>
<td>0.90676</td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>
As a whole, the more effective learners use strategies more frequently than the less effective learners, except for the use of repetition strategy, translation strategy and self-encouragement strategy. Less effective learners tend to use both repetition strategy (M=2.91) and translation strategy (M=3.45) more frequently, but there is no difference between the two groups in the use of self-encouragement strategy. This means that the self-encouragement strategies of these two groups are the same, both recorded to 3.20.

However, it does not mean that the repetition strategy is a less efficient strategy or has a negative effect on vocabulary learning. Facing a large number of foreign vocabulary to remember, the repetition is the easiest and most important learning strategy which the learners may naturally employ. Repetition does not mean rote the vocabulary which indicates the learner memorize the new word mechanically without meaning and understanding. If only the learners use this strategy properly, they can gain a great achievement on vocabulary acquisition. Four of the most interesting issues connected with repetition strategy on word list learning should be paid attention to:

1) the number of repetitions needed to remember a word list;
2) the optimum number of words to be studied at one time;
3) the timing for repetition; and
4) repeating aloud vs. repeating silently

(Gu, 2003).

Among all the 20 strategies investigated in this research, only five strategies show that there are differences between these two groups, namely self-monitoring (group A: M=2.4, S.D.=1.26; group B: M=1.2, S.D.=.42), repetition (group A: M=2.35, S.D.=.50; group B: M=2.92, S.D.=.54), application (group A: M=3.66, S.D.=.76;
Effective learners reported using self-monitoring, application, categorization, and cooperation strategies significantly more often than the less effective learners, while the less effective learners were more positive in using repetition strategy.

In this study, the effective learners and the less effective learners distinguished most in the use of self-monitoring and application strategies. Monitoring, in Nisbet and Shucksmit’s view, is the key process that distinguishes effective learners from less effective learners (Malley, & Chamot, 1999: 48). The effective learners are more aware of what they are doing, especially in learning from their errors by asking for corrections when they think these are needed. However, the less effective learners seem to pay no attention to their errors and may make the same mistakes over and over again. As to applied strategies, it is said that only after you put what you have learnt into use can you really master it. This is also true in vocabulary learning. It is very common to hear students complain that they often forget the words they have recited repeatedly after a few days. That is because they seldom use them. Only when the new words are put into use can they be remembered for a long time or even forever. This shows the importance of using applied strategy. And the result here proves this point again.

From what have been discussed in the previous section, categorization strategy is the least commonly used strategy among cognitive strategies. Despite this, the effective learners seem to use this strategy significantly more often than the less effective learners. The effective learners reported to prefer memorizing words by grouping them based on their common attributives, such as according to the hyponymy, synonym, antonym or syntax function.
The less effective learners were less likely to use the cooperation strategy, maybe because they think they are poor in English, and they dare not communicate with others. Therefore, they may be less likely to work with peers or to take part in group activities because of the worry of losing face in front of others, and they are not as enjoyable as the advanced learner do in the process of speaking English publically. More efficient guidelines and encouragement should be offered with great patience by their English teachers in order to help them to acquire vocabulary.

The only significant strategy that the less effective learners use more often than the effective learners is repetition strategy. The reason for this may be because it is the most direct way of learning words. However, the effective learners may apply a more flexible and appropriate way of learning.

### 3.3 Correlation Analysis between Vocabulary Learning Strategies and Learning Outcome

The scores of the vocabulary test formed by the author and the TEM-4 test from some students are compared and analyzed by the SPSS, to examine the correlation between these two tests. The results are listed in the table 7.

<table>
<thead>
<tr>
<th>Tests</th>
<th>TEM 4</th>
<th>Vocabulary Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocabulary Test</td>
<td>.538</td>
<td>1</td>
</tr>
<tr>
<td>TEM 4</td>
<td>1</td>
<td>.538</td>
</tr>
</tbody>
</table>

Table 7 shows that the vocabulary test is significantly correlated with TEM-4 (r=.538*). Although these two tests cannot reveal thoroughly the overall language proficiency of the students, it is for sure that vocabulary learning is a positive
predictor of students’ English competence.

Simple correlation among 20 independent variables, including 5 metacognitive strategies, 12 cognitive strategies and 3 social-affective strategies, and one dependent variable, consisting English learning outcome, consisting of vocabulary test scores and TEM-4 scores, were obtained. More details of these three categories are shown in Table 7 and Table 8.

Table 8: Correlation among strategies and academic achievement

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metacognitive Strategies</td>
<td>.516</td>
<td>.020</td>
</tr>
<tr>
<td>Cognitive Strategies</td>
<td>.578</td>
<td>.008</td>
</tr>
<tr>
<td>Social-Affective Strategies</td>
<td>.385</td>
<td>.094</td>
</tr>
</tbody>
</table>

Statistics in Table 8 show that metacognitive strategies ($r = .516^*$) and cognitive strategies ($r = .578^{**}$) were significantly and positively correlated with the learning outcome, while the correlation between social-affective strategies ($r = .385$) and learning outcome was insignificant, although it was not negative. It may due to the metacognitive and cognitive strategies are more helpful to the academic vocabulary learning, which is suitable in Chinese learning context. More detailed differences of the sub-strategies in these three categories are shown in Table 9.

Table 9: Correlation among sub-strategies and academic achievement

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>-.186</td>
<td>.432</td>
</tr>
<tr>
<td>Self-management</td>
<td>.219</td>
<td>.353</td>
</tr>
<tr>
<td>Selective attention</td>
<td>.338</td>
<td>145</td>
</tr>
<tr>
<td>Self-evaluation</td>
<td>.391</td>
<td>.088</td>
</tr>
</tbody>
</table>
Table 9 gives us more detailed information about the correlations between learning outcome and each sub-strategy. Among all the 20 strategies, except planning ($r=-.186$), repetition ($r=-.515$), translation ($r=-.170$) and self-encouragement ($r=-.025$) strategies, the remaining 16 strategies are positively related to learning outcome, which indicates a strong influence of the learning strategies.

Self-monitoring ($r=.621$), application ($r=.698$), categorization ($r=.685$) and cooperation strategy ($r=.547$) turn out to best predict the overall proficiency in language learning. Dictionary ($r=.478$), elaboration ($r=.481$), and media strategy ($r=.489$) also enter the equation as significant positive predictors. However, repetition strategy ($r=-.515^*$) emerged as a significant but negative predictor of overall proficiency. These results are quite consistent with what has been discussed in the previous section, which is that effective learners use self-monitoring, application, categorization and cooperation strategy more frequently than poor
learners, while less effective learners favor repetition strategy more.

As to dictionary and media strategy, the explanation can be given as those students can enhance their self-study ability and lay a solid foundation through referring to dictionary. This is because using dictionary may be one of the best tool in language learning. As Summers (1988) noted, “the student and non-native teacher have a powerful tool at their disposal . . . with which to gain further understanding of the range of use of new language, leading eventually to accurate production, mainly in writing” (Summer, 1988: 123). If the teacher is unavailable, the learners have to try to use dictionary as useful tool, so that they can learn independently. Especially after entering university, most of the study is carried out by self-study. There is no teacher surrounding the students as in the middle school, so the dictionary strategy is crucial for the college English major students.

Viewing from the communicative teaching methodology, media strategy can be a good way to learn a language, because listening to the broadcast, watching TV, or reading magazines, broadly speaking, are ways of using language. As the development of the personal computer and the Internet, massive materials and resources are available for English learner. By reading foreign news or watching an English movie, and chatting with people from all over the world in the target language, the learners can receive a huge improvement of their English. That is to use the already known language to get the information one needs, and it is a much more interesting way of learning, and may provide consistent motivation for learners to acquire vocabulary of foreign language. This also proves that interest is the best teacher in learning process. If students can find the interest in learning, they can get twice the result with half the effort.

Therefore, learners should not depend on repetition to learn new words alone; they should use that as one helping strategy and also refer to other approaches. With the employment of combined learning strategies, the language learner may achieve great
results in vocabulary learning.

### 3.4 Implications

The findings of this study provide implications for both learners and teachers in English learning and teaching. They can take this study as advice, or do some relative studies based on this study.

In the language learning process, it is the students themselves rather than the teachers, who play an indispensable role. In other word, students need to learn independently of teachers. The training of strategies use is to enhance learners’ autonomy. But the first step is to have students identify what strategies they actually use. If students are not aware of what they are doing, they cannot improve their learning. To know how themselves learn and how others learn can help students to develop their own ways to learn more independently and more effectively.

As to the teachers, they need to know about the strategies their students use while learning a language. If the teacher knows little about the strategies used by their students, it will be hard for them to process teaching effectively. Teachers should adopt materials, teaching methods, exercise and evaluate techniques to encourage students to develop learning strategies suitable for themselves. For example, teachers can develop students’ knowledge about strategies by naming and describing the strategy. Teachers can also instruct students to use effective learning strategies, such as to learn new words by using them to make a sentence, or to train them in the use of cooperation strategy by holding group discussion or organizing some group activities.

### 3.5 Limitations

Naturally, there are some limitations in this study, which will be divided and presented in the following three paragraphs. First and foremost, since the
questionnaire is self-reported, it is not clear whether the participants actually used the strategies they indicated in learning vocabulary or not. Their response may be just their thinking that they have used these strategies. Second, only a questionnaire was used in this survey, it was not in combination with other survey methods, such as interview, recording, which, to certain extent, limits the reliability and validity of the study. Third, the sample of this study is not large enough. There were only 118 participants taking part in this research and the analysis statistics may not accurately reflect the vocabulary learning strategies that the millions of Chinese college English majors actually use.
4. Conclusion

This paper is an investigation of vocabulary learning strategy use of the Chinese university students majored in English. In this study we have looked into the overall patterns of the vocabulary learning strategies used by Chinese college English majors, the individual differences in strategy use and the correlation between the strategy use and language learning outcome. From the above analyses, conclusions are drawn as follows:

Firstly, the participants generally did not dwell on memorization and reported using more meaning-oriented strategies than rote strategies in learning vocabulary, which is contrary to popular beliefs about Chinese learners. However, most participants had not achieved sufficient metacognitive maturity to use them, and they also ignored the social-affective factors in language learning.

Secondly, in the vocabulary learning process, there are significant differences in strategy use between effective learners and less effective learners. Effective learners tend to use learning strategies more frequently and variously than learners who are less effective, and are better users of metacognitive strategies. Less effective learners seem to be more rote learners.

Thirdly, some strategies are significantly correlated with overall learning outcome, such as self-monitoring, dictionary, elaboration, applied, media, categorization, and cooperation strategies, while repetition strategy is obvious the negative predictor of learning outcome.

However, to some extent, this research can help teachers have a better understanding of their students in terms of language learning and to adjust their teaching methods. On the other hand, it can provide students have a better understanding for themselves and form a suitable way in their own language learning.
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Appendices
Appendix 1

Vocabulary Test (40 minutes)

Part one, Multiple choice (20 minutes)

Directions: There are 30 incomplete sentences in this part. For each sentence there are four choices marked A), B), C) and D). Choose the ONE that best completes the sentence.

1. As a ________ actor, he can perform, sing, dance and play several kinds of musical instruments.
   A) flexible B) versatile C) sophisticated D) productive

2. There are not many teachers who are strong __________ of traditional methods in English teaching.
   A) sponsors B) contributors C) advocates D) performers

3. We managed to reach the top of the mountain, and half an hour later we began to ________.
   A) ascend B) descend C) decline D) plunge

4. Competition, they believe, __________ the national character than corrupt it.
   A) enforces B) confirms C) intensifies D) strengthens

5. The accident __________ him of his sight and the use of his legs.
   A) excluded B) disabled C) deprived D) gripped

6. On weekends my grandma usually ________ a glass of wine.
   A) subscribes to B) engages in C) hangs on D) indulges in

7. The people living in these apartments have free ________ to that swimming pool.
   A) access B) excess C) excursion D) recreation

8. At the party we found the shy girl ________ her mother all the time.
   A) depending on B) coinciding with C) adhering to D) clinging to
9. When a psychologist does a general experiment about the human mind, he selects people ________ and ask them questions.
   A) at length B) at random C) in essence D) in bulk

10. I think she hurt my feelings ________ rather than by accident as she claimed.
    A) virtually B) deliberately C) literally D) appropriately

11. Even though he was guilty, the ________ judge did not send him to prison.
    A) merciful B) impartial C) conscientious D) conspicuous

12. The education ___________ for the coming year is about $4 billion, which is much more than what people expected.
    A) allowance B) reservation C) budget D) finance

13. They had a fierce ________ as to whether their company should restore the trade relationship which was broken years ago.
    A) debate B) clash C) disagreement D) contest

14. They tossed your thoughts back and forth for over an hour, but still could not make _______ o
    A) impression B) comprehension C) meaning D) sense

15. The politician says he will ________ the welfare of the people.
    A) prey on B) take on C) get at D) see to

16. If you __________ the bottle and cigarettes, you’ll be much healthier.
    A) take off B) keep off C) get off D) set off

17. He was ________ to steal the money when he saw it lying on the table.
    A) dragged B) tempted C) elicited D) attracted

18. Beijing somewhat short-sighted, she had the habit of __________ at people.
    A) glancing B) peering C) gazing D) scanning

19. Of the thousands of known volcanoes in the world, the ________ majority are inactive.
    A) tremendous B) demanding C) intensive D) overwhelming

20. In general, matters which lie entirely within state borders are the ________ concern of state governments.
    A) extinct B) excluding C) excessive D) exclusive
21. The poetry of Ezra Pound is sometimes difficult to understand because it contains so many ________ references.
A) obscure  B) acute  C) notable  D) objective

22. The mayor was asked to ________ his speech in order to allow his audience to raise questions.
A) constrain  B) conduct  C) condense  D) converge

23. The morning news says a school bus _________ with a train at the junction and a group of policemen were sent there immediately.
A) bumped  B) collided  C) crashed  D) struck

24. Sometimes patients suffering from severe pain can be helped by “drugs” that aren’t really drugs at all _________ sugar pills that contain no active chemical elements.
A) or rather  B) rather than  C) but rather  D) other than

25. We are writing to the manager ________ the repairs recently carried out at the above address.
A) with the exception of  B) with the purpose of  C) with reference to  D) with a view to

26. When I said goodbye to her, she ________ the door.
A) saw me at  B) set me off  C) sent me to  D) showed me to

27. In the meantime, the question facing business is whether such research is ________ the costs.
A) worth  B) worth of  C) worthy  D) worthwhile

28. During the nineteen years of his career, France Battiate has won the ________ of a wide audience outside Italy.
A) enjoyment  B) appreciation  C) evaluation  D) reputation

29. Although most dreams apparently happen ________, dream activity may be provoked by external influences.
A) spontaneously  B) simultaneously  C) homogeneously  D) instantaneously

30. He is holding a ________ position in the company and expects to be promoted soon.
A) subordinate  B) succeeding  C) successive  D) subsequent
Part two Blank filling

Directions: There are 20 incomplete sentences in this part. Fill each blanks with proper words or phrases.

31. I could see that my wife was _____ having that fur coat, whether I approved of it or not.
32. The _______ runner can run 2 miles in fifteen minutes.
33. The insurance company paid him $10,000 in _______ after his accident.
34. The political future of the president is now hanging by a ________.
35. Parents have a legal ________ to ensure that their children are provided with efficient education suitable to their age.
36. Most nurses are women, but in the higher ranks of the medical profession women are ________ a ________.
37. I am sure I can _________ him into letting us stay in the hotel for the night.
38. Last year, the crime rate in Chicago has sharply ________.
39. The republication of the poet’s most recent works will certainly _________ his national reputation.
40. Recently a number of cases have been reported of young children ________ a violent act previously seen on television.
41. This kind of material can ________ heat and moisture.
42. Reading _________ the mind only with materials of knowledge; it is thinking that makes what we read ours.
43. If the fire alarm is sounded, all residents are requested to _________ in the courtyard.
44. The work in the office was ________ by a constant stream of visitors.
45. The joys of travel, having long ________ the disabled, are opening up to virtually anyone who has the means.
46. Fewer and fewer of today’s workers expect to spend their working lives in the same field, ________ the same company.
47. Thank you for applying for a position with our firm. We do not have any openings at this time, but we shall keep your application on ________ for two months.
48. It will be safer to walk the streets because people will not need to carry large amounts of cash; virtually all financial ________ will be conducted by computer.
49. If a person talks about his weak points, his listener is expected to say something in the way of ________.
50. Some people think that a ________ translation, or word-for-word translation, is easier than a free translation.

Answer to the questions

Part one

Part two

31. intent on 32. average 33. compensation 34. thread 35. obligation 36. minority 37. talk 38. declined 39. enhance 40. duplicating 41. repel 42. furnishes 43. assemble 44. hampered 45. neglected 46. let alone 47. file 48. transactions 49. encouragement 50. literal
Appendix 2

Questionnaire About the Vocabulary Learning Strategies

Date of Birth_____ Gender_____ Grade of TEM-4_____
How long you learn vocabulary in week?_______
When did you start to learn English?________________

The questionnaire adopted the taxonomy of the Oxford system. Please respond to each statement quickly, without too much thought.

1 = This statement is never or almost never true of me
2 = This statement is usually not true of me
3 = This statement is sometimes true of me
4 = This statement is usually true of me
5 = This statement is always or almost always true of me

1, If I don’t know a word, I guess its meaning by analyzing its root, affixes or part of speech.

2, If I don’t know a compound word or a contraction, I guess their meaning from their structural analysis.

3, If I meet a new word, I guess its meaning by checking for an L1 word which has the similar pronunciation and meaning, e.g. jiaozhi and “饺子”.

4, I study and practice words’ meaning in a group.

5, I enlist the teacher to check my flash cards or word lists for accuracy.
6, I interact with native speakers to gain vocabulary.

7, I learn a new word by studying it with a pictorial representation of its meaning instead of definition.

8, I create my own mental images of a word’s meaning.

9, I connect the word to a particularly vivid personal experience of the underlying concept. For example, I mentally connect the word snow to a memory of playing in the snow while a child.

10, I associate the word with its coordinates. For example, apple can be linked to other kinds of fruit like pears, cherries, or peaches.

11, I connect the word to its synonyms and antonyms.

12, I use semantic maps to help consolidate vocabulary.

13, If I am given lists of words to study, I group words together before memorization, for example, all animals first, before moving on to another category like names.

14, I use new words in sentences.

15, I group words together within a storyline.

16, I study the spelling of a word to remember it.

17, I memorize a new word in the second language by identifying a familiar word in the first language that sounds like.
18. I resemble the new word, and generating easily recalled images of some relationship with the new word.

19. I use the Chinese to understand or produce the English.

20. I use dictionary to define or expand a definition of a new word.

21. I take the notes of a word, which include main idea, important points, outline or summary of information of the word.

22. I study a word’s part of speech to remember its meaning.

23. I paraphrase the word’s meaning to improve its recall.

24. I say a word over and over again to remember it.

25. I write a word repeatedly to remember it.

26. I use word lists to review words.

27. I use English-language media (songs, books, magazines, newspapers, movies, newscasts, etc.) to study.

28. I test myself with word tests.

29. I use spaced word practice to review the words.

30. I make a general plan to preview the concept or principle in an anticipated learning activity.
31, I know the conditions that help my vocabulary learning.

32, I arrange the presence of those helping conditions for my vocabulary learning.

33, I attend to specific aspects of language input, for example, attend English corner.

34, I correct my speech for accuracy in pronunciation, grammar, vocabulary or for appropriateness to the setting.

35, I provide myself reward when I successfully completed a language learning activity.