

## ***Incidental Vocabulary Learning of Non-English Major Graduates***

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Vocabulary learning is essential in second language acquisition, since it is a fundamental element of the target language learning. The present research investigates the overall pattern of English incidental vocabulary learning strategies employed by non-English major graduates, the specific strategies used by high-proficiency learners, intermediate and low-proficiency learners, as well as correlation between learning strategies and learning proficiency. The subjects are 150 non-English major graduates from Chongqing University, China. The research instruments are incidental vocabulary learning strategies questionnaire, vocabulary testing, and individual interviews. By using SPSS 13.0 with K-means cluster, Independent samples test and Bivariate correlate, the analyses of the data reveal that high-proficiency learners and low-proficiency learners show significant differences in choosing vocabulary learning strategies in their incidental vocabulary learning. With the increase of vocabulary level, the number of incidental vocabulary strategies used by the subjects also increases gradually. Drawing upon the research, the pedagogical implications of the research are suggested that teachers should encourage them to realize the importance of incidental vocabulary learning and to expand involvement in the learning process. With the findings of different learning strategies employed by high and low proficiency subjects, as well as correlations between learning strategies and their incidental vocabulary learning proficiency,

teachers need to make further comparison and help learners discover the most beneficial learning strategies for themselves.

**Key words: incidental vocabulary learning; vocabulary leaning strategies**

## **INTRODUCTION**

### **Importance of Incidental Vocabulary Learning in Second Language Acquisition (SLA)**

Vocabulary learning plays an important role in language learning. Without certain amounts of vocabulary, listening, reading comprehension, and writing are all attics in the air. Yet, in a long period, sufficient attention has not been paid to this respect. Many teachers and students consider vocabulary learning as a natural, mechanical and monotonous process (Nation, 2001). Meara (1993) contrasted the neglect of vocabulary learning by applied linguistics with the urgent need of learners: “this neglect is all the more striking in that learners themselves readily admit that they experience considerable difficulties with vocabulary, and once they have got over the initial stages of acquiring their second language, most learners identify the learning of vocabulary as their greatest source of problem.”

During the past two decades, linguists and researchers have paid great attention to vocabulary learning (Nation, 2001). Vocabulary is no longer a victim of discrimination in second language research, or in language teaching. After decades of neglect, vocabulary is now recognized as central to any language learning. With the enhancement of the status of vocabulary learning, research into vocabulary learning becomes a focus of research at present.

While many researchers paid much attention on the fundamental role of vocabulary in successful second language learning, learning of incidental vocabulary needs to be highlighted. Incidental vocabulary is defined as “learning of one thing (e.g., grammar) when the learner’s primary objective is

to do something else (e.g., communication)” (Laufer & Hulstijn, 2001). Another interpretation is that it refers to the learning of one stimulus aspect while paying attention to another stimulus aspect. As Schmidt (qtd in Hulstijn, 2003) puts it, incidental learning is “learning of one thing when the learner’s primary objective is to do something else” this meaning of incidental clearly shows its descent from the methodological meaning. Therefore, to some extent, it is an indirect method which is learnt subconsciously.

### **Reasons for the Research**

There are four reasons for a research on incidental vocabulary learning. First, as a large amount of incidental vocabulary is from medias such as TV, newspapers, magazines, and Internet, etc, it is important to find out how language learners acquire it. Second, since there is a wide variety of ways for dealing with vocabulary in textbooks, it is an urgent job for researchers to compare and select the most suitable approaches to incidental vocabulary learning. In addition, both learners and researchers view incidental vocabulary as a very important element in language learning. Learners think that inadequate vocabulary results in some difficulties in their language learning. Vocabulary in textbooks is small and far from need, as a result, incidental vocabulary learning and the research in this field are unavoidable and far – reaching.

Finally, little research has been carried out on whether Chinese learners of English acquire large percentage of their vocabulary incidentally just as the western subjects do. As China has a specific cultural background and lacks of sufficient authentic input, the results of western researchers may not necessarily fit the description of Chinese learners of English. It is believed that Chinese EFL learners have attached great importance upon reciting. Traditional language teaching and learning has also laid emphasis on the importance of rote memory, which has also been considered their main vocabulary learning style. Given the SLA in Chinese context, to what extent do Chinese learners of English acquire their vocabulary through incidental learning Which

approaches are used by Chinese learners in vocabulary learning?

### **Research Questions**

The present thesis aims at an analysis of the incidental vocabulary learning employed by non-English major graduates, in the hope to shed some insights both to English learners and English pedagogy. The study is designed to seek answers to the following questions:

1. What is overall pattern of the incidental vocabulary learning among non-English major graduates? And what are the more and less used strategies in incidental vocabulary learning?
2. What are the differences of incidental vocabulary learning among learners at different vocabulary proficiency levels?
3. Is there any correlation between their incidental learning strategies and vocabulary proficiency level?

### **Precious Researches on Incidental Vocabulary Learning**

Before 1940s, the primary emphasis of strategy research had been on intentional rather than incidental learning. It was usually assumed that intentional learning was importance of internationally in learning.

There was a major breakthrough in this area in 1980s. Researchers began to realize the importance of incidental learning since most human learning can reasonably be regarded as incidental, the source of especially important and realistic data concerning the normal functioning of memory processes (Coady, 2001; Liu, 2004).

With regard to incidental learning, it has been defined as the learning without intent to learn, or as the learning of one thing, e.g. vocabulary, when the learner's primary objective is to do something else

In 1987, through their papers, Nagy and Herman put forward their theory which is "Incidental Vocabulary Learning Hypothesis" (qtd in Coady, 2001). To

achieve communicative competence, language learners are faced with tremendous task of vocabulary learning. It is obvious that words in such large quantities cannot have been learned solely by means of intentional word-learning activities. Their studies have shown how few words are learned or taught by direct instruction compared to how many words students need to know. For example, a native speaker knows about 10,000 words in the first language, but only less than 8000 words in a second language. Because there is a definite gap between what is taught and what is known, more attention needs to be given to the issue of incidental vocabulary learning (Schmitt, Schmit, & Clapham, 2001). Many words must have been “picked up” during listening, reading, and watching activities.

Krashen (qtd in Nation, 2001), a leading proponent of extensive reading, argues that language learners acquire vocabulary most efficiently by incidental learning, and his theory has received great attention from the outset. The theory claims that vocabulary is best acquired incidentally by guessing meaning of the unknown words from context through the act of reading itself. The theory is supported by a number of researchers. Saragi, Nation, and Meister conduct a research on incidental vocabulary learning and draw a conclusion that incidental learning accounts for a large proportion of vocabulary growth among school-age children (Hulstijin, 2003; Schmitt, 2002).

There is an overwhelming view that most vocabulary items are acquired ‘incidentally’, that is, as a by-product of the learner being engaged in a listening, reading, speaking or writing activity, and that few words are acquired by an act of ‘intentional’ learning.

Johnes and Plass (2002) assigned 171 non-native speakers of French to one of four treatments by a computer program. It was found that students acquired more words and recalled the passage better when they had selected both written and pictorial annotations available. Laufer and Hulstijin (2001), Swanborn and de Glopperall (2002), and Joe (1998) put the subjects in one treatment of reading tasks or conditions and did not tell the subjects about the tests after reading. Hulstijin (2003) found support for the hypothesis that frequency will foster incidental vocabulary learning when advanced L2

readers were given the meaning of unknown words through marginal glosses or when they look up meanings in the dictionary than when no external information concerning unknown words' meanings was available. Swanborn and de Glopper (2002) found different reading purposes influence incidental vocabulary gains.

However, some studies on incidental learning reveal some problems, such as inefficient guessing, the vocabulary threshold. In 1999, Fraster (qtd in Coady, 2001) makes a thorough survey of the incidental theory, and he suggests that learning vocabulary through incidental learning is effective when students know how to take advantage of it. Therefore, it seems that the incidental vocabulary learning efficiency depends heavily on learners; awareness of acquiring the new words and their capability to choose the suitable strategies.

In China, some vocabulary researchers and foreign language teachers have made studies on the vocabulary learning strategies, based on the statistical investigations of undergraduates/graduates in Chinese universities and colleges. However, Chinese researchers have done little in the area of incidental vocabulary learning.

In *Foreign Language World*, Liu (2004) put forward some measures to effectively improve incidental vocabulary learning through reading. Her notions about the degree of consciousness, the threshold vocabulary, and the involvement load are novel and need further study.

Gai (2003) made an empirical study and her research findings are that reading purpose and vocabulary size have effect on incidental vocabulary acquisition. Duan and Yan (2004) study the effect of notes for multiple choices in incidental vocabulary learning. They find that the notes can attract learner's attention and improve input efficiency, thus stimulates the memory of the words. They also provide some suggestions that the editors of reading materials should try to use multiple-choice to give notes to rather than just give their definitions or meanings.

## **Classification of Vocabulary Learning Strategies**

In practice, it is quite difficult to decide where to draw the line between different strategies and their numerous variations. For example, classmates could ask each other for translations, paraphrases, examples of the new word in a sentence, a picture illustrating the new word's meaning, ect. If every possible permutation is listed, the list would have soon become too cumbersome to be of any practical use. A number of attempts have been made to classify vocabulary learning strategies. O'Malley and Chamot (2001) propose three types of strategies: meta-cognitive (strategies for overviewing the processes of language use and learning, and for taking steps to efficiently and plan and regulate), cognitive and social/affective strategies. At more or less the same time, Oxford proposed two broad categories of strategies, direct and indirect. The former included memory, cognitive, and compensation strategies while the latter included meta-cognitive, affective, and social strategies. Gu and Johnson (qtd in O'Malley & Chamot, 2001) establishes two main dimensions of vocabulary learning strategies for their study, meta-cognitive regulation and cognitive strategies which covered 6 sub-categories: guessing, using a dictionary, note-taking, rehearsal, encoding, and activating, all of which were further sub-categorized. The total number of strategies in their study was 74. Schmitt (2002), however, suggested two categories of L2 vocabulary learning strategies: discovery and consolidation strategies. The former referred to determination and social strategies whereas the latter included social, memory, cognitive, and meta-cognitive strategies, with 40 strategies in all.

Of the more established systems, the one developed by Oxford (O'Malley & Chamot, 2001) seemed best able to capture and organize the wide variety of vocabulary learning strategies identified.

Although generally suitable, Oxford classification system was unsatisfactory in categorizing vocabulary-specific strategies in several respects. Most importantly, there is no category in Oxford's taxonomy that adequately describes the kind of strategies used by an individual when faced with discovering a new word's meaning without resource to another person's expertise. It was therefore

necessary to create a new category for these strategies: Determination Strategies (DET) (Hatch & Brown, 2001).

## **RESEARCH METHODOLOGY**

### **Subjects**

The subjects are selected randomly among graduates of non-English major in grade one in Chongqing University. And it involves five colleges in the university: College of Urban Construction and Environment Engineering, College of Construction Management and Real Estate, College of Trade and Public Administration, College of Bioengineering and College of Law. Questionnaires and vocabulary testing papers have been distributed simultaneously, and finally 150 valid ones have been collected.

### **Research Methods**

#### *Questionnaire*

Based on the previous researches, especially the one done by O'Malley, I summarize the vocabulary learning strategies used by Chinese EFL learners and group them in incidental learning. The questionnaire includes sixteen items, each representing a specific incidental vocabulary learning strategy, and followed by five choices marked A, B, C, D and E. The questions were of the five scale type: A=never or almost never true of me; B=usually not true of me; C=somewhat true of me; D=usually true of me; E=always or almost always true of me. This type is used to give A one point, B two points, C three points, D four points, and E five points. The average for each item score indicates how frequently each strategy is used. In this section, students are required to give a true answer to the questions according to what they had actually done by choosing the appropriate number.

I have considered and recalled our learning ways in university and in daily life, and these items or ways are used often by Chinese learners. Also, I have referred to Robinson's research. Robinson (2001, p. 271) states that learners would learn through "conversation with adults or peers, watching television, classroom discussion, school reading, and free reading" Some of the items are the way teachers have introduced to us, or what we usually do. The questions concern incidental vocabulary learning strategies in six aspects: reading, listening, speaking, writing, translation and activity strategy. Reading strategy includes reading English novels, newspapers and magazines, copying excellent articles, sentences and idioms, guessing or inferring words' meaning from context, keeping an eye on English advertisements, commercial brands and product specifications in everyday life. Listening strategy includes listening to English broadcasting or such as VOA, BBC, English songs or tapes, attending English lectures and watching English TV programmes or films. Speaking strategy includes speaking English with classmates, teachers and foreigners, imitating the pronunciations and intonation from English films, videos and tapes, and attending classroom discussion. Writing strategy includes writing diaries and letters, and making notes. Translating strategy includes translating from English into Chinese and Chinese into English. Activity strategy includes playing on-line games sending emails, guessing words' meaning from context, doing English examination papers, attending out-of-class activities, and when coming across new words, turning to dictionaries, teachers or class (O'Malley & Chamot, 2001).

In order to avoid any difficulties caused by the language barrier that might affect the accuracy of the research results, the whole questionnaire was written in Chinese. And there is personal information included in the questionnaire, such as gender, major and contact details, which is convenient for later analysis and interviews.

#### *Vocabulary Test*

The vocabulary test aims to identify the vocabulary level of the subjects. It

is selected from the Vocabulary Test based on the studies of Schmitt (2001). The original measure is composed of five parts: the 2000-, 3000-, 5000-, academic-, and 10000-word level. The 2000- and 3000- word levels contain high-frequency words. The academic word-level represents one type of specialized vocabulary. The 5000-word level is on the boundary of high- and low-frequency words. The 10000-word level contains low-frequency words. At each level, there are ten sets, with each set comprising of six words and three definitions.

The task for the respondents is to match correctly the three definitions with three of the six words provided by writing the number of the words before the corresponding definitions. And they are told not to consult dictionaries or enquire others when coming across unknown words in the test.

The graduates selected all have passed the graduates entrance examination, which requires 5500 vocabulary size. Thus the 5000-word level is selected in the vocabulary testing.

#### *Interview Questions*

According to the scores of vocabulary testing, the subjects are divided into three groups by the SPSS software. Then four respondents from each group are selected to carry out interviews. The questions concern such as “What is your most frequently used vocabulary learning method? What is the difference in your vocabulary learning at usual time and prior to exams? And when does your vocabulary knowledge increase fastest and largest?”

## **DATA ANALYSIS AND FINDINGS**

### **Data Analysis by SPSS**

SPSS 13.0 is used to analyze the data collected, and descriptive statistics are obtained first to see the overall pattern of the incidental vocabulary

learning. Then T-test is employed to compare the strategies used by high score group and low score group. Finally, correlation analysis is performed to see the strategies related to vocabulary test.

*Overall Pattern of Incidental Vocabulary Learning*

**TABLE 1**  
**The Mean of Each Category Score**

Categories	Items number	M
Listening	10	2.340
	14	3.280
	15	2.880
Speaking	2	2.920
	8	2.220
	9	2.940
Reading	1	2.900
	13	2.640
Writing	4	2.460
	12	2.600
Translating Activity	3	2.900
	5	2.600
	6	3.220
	7	3.260
	11	2.260
	16	3.500

Table 1 shows the mean score of each vocabulary learning strategy used by the respondents. The items with average score larger than 3.0 are strategies more frequently used by the subjects; the items less than 2.0 are seldom used strategies by the subjects; the items with an average score between 2.0 and 3.0 are only sometimes used strategies by the subjects.

Detailed description of the strategies more frequently used and seldom used by the respondents will be discussed. In this incidental learning investigation, more frequently used strategies are “learning some words when coming across new words, turning to dictionaries, teachers or classmates for their meanings (3.5)”; “learning some words by watching English TV programmes or films (3.28)”; “learning some words by guessing words’

meaning from context (3.22)”; “learning some words by doing English examination papers (3.26)”. The strategies “learning some words by communicating with foreigners teachers or classmates (2.22)” and “learning some words by attending out-of-class activities (such as English corner and speech competition) (2.26)” are seldom used by them.

#### *Differences Among Different Groups*

According to the scores of vocabulary testing, the subjects are divided into three groups by the SPSS software (K-means cluster). If I they are labeled into two groups, there is only one division score, and there are lots of similar scores between the low scores in higher score group and higher score in lower score group. Therefore, using this kind of grouping way can't get obvious difference between high score group and low score group. While if they are divided into three groups, there will be two score division, and there is obvious difference between high score group and low score group. And this way of grouping has obvious representation, and the data analysis will be more reliable. Group 1 is of higher score, group 2 is of lower score, and group 3 is of upper lower score.

T-test is performed to compare the great differences between the incidental vocabulary learning strategies employed by high proficiency group and those by low proficiency group. Table 2 demonstrates that, T-test for equality of means shows that  $T=5.074$ ,  $P=0.000 < 0.05$ ; mean difference of the two group is 14.75; Std. error difference is 2.907, and 95% confidence interval of the difference is from 8.812 to 20.687. Thus the result of T-test shows there is very significant difference with regard to the overall score of incidental vocabulary learning strategies between the two groups. The detailed differences are analyzed in the following content.

**TABLE 2**  
**Independent Samples Test**

T-test for Equality of Means					
t	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
				Lower	Upper
5.074	.000	14.75	2.907	8.812	20.687

Table A, table B and table C (see appendix) show the comparison of means of the vocabulary testing score, total score of section one in the questionnaire and each strategy score by the three different vocabulary levels. In tables A~C, total score stands for the total score of section one in the questionnaire, and Q1~Q16 are specific strategies with 16 questions in section one in the questionnaire.

From tables A~C we can see that learners with higher vocabulary score get higher total score of incidental learning strategies. The higher score group gets 50.666; the intermediate group gets 42.785; the lower group gets 35.916. And the high score group gets thirteen scores above 3.0, while the intermediate group gets four, and the lower group gets two. It indicates that the high proficiency learners do better in the use of the incidental vocabulary learning strategies; they use more varieties of strategies than the lower group.

The most frequently used strategy by the higher score group is “learning some words when coming across new words, turning to dictionaries, teachers or classmates for their meanings” (3.791), while the least used one is “learning some words by keeping an eye on English advertisements, commercial brands and product specifications in everyday life (2.541)”. The most often used strategy by the intermediate group is the same as the higher score group (3.857), and the least used one is “learning some words by attending out-of class activities such as English corner and speech competition (1.785)”. The most often used strategy by the lower group is “learning some words by doing English examination papers (3.583)”, and the less used are “learning some words by copying excellent articles, sentences and idioms”, “learning some words by writing diaries and letters, making notes, sending E-mails”, and “learning some words by keeping an eye on

English advertisements, commercial brands and product specifications in everyday life”, and their average score are all 1.583.

*Correlation Between Learning Strategies and Vocabulary Proficiency*

Table 3 demonstrates the correlation between vocabulary testing score and total learning strategy score. As it shows, coefficient of Pearson Correlation is 0.751, (P=0.000<0.01). Thus, the vocabulary testing score and total learning strategy score have obvious positive correlation with each other.

**TABLE 3**  
**Correlations Between Vocabulary Testing Score and Total Learning Strategy Score**

		Test score	Total strategy score
Testing score	Pearson Correlation	1	.751(**)
	Sig. (2-tailed)		.000
	N	150	150

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

**Research Discussions**

*Strategies More Frequently Used by the Subjects*

Dictionary use is very popular with the students both for comprehension and vocabulary learning. Sometimes, they consult dictionaries only when the unfamiliar words appear repeatedly or when the new words are crucial to the understanding of the passage. This is the case of using dictionaries for comprehension. Extended dictionary strategies involve the students not only with the meanings of the new words but also with some set phrases, the usage and some other information for them.

As one of the strategies most often used by all the three groups is “learning some words by doing examination papers”, we can infer that the examination-oriented education system has certain impact on language teaching and learning. From the interviews in this study, almost all the learners with low

and intermediate score indicate that their vocabulary size has increased during their preparation for exams. The learners with upper high score behave as usually, even before exams, their vocabulary leap is not apparent. Learners with low and intermediate score indicate that they had rote-memorized word manuals before exams, and although they were very tired, they felt it quite necessary to recite word lists or word manuals before exam and there were no other good alternatives. Furthermore, word lists have systematic and comprehensive summarization of all the words in the syllabus. When they had recited all the words letter by letter, they felt confident in exam. After exam they would set aside the word list until the next exam. When they took up the word list again, they found many unfamiliar words again. However, learners with upper high score think that language learning is a gradual process, which needs efforts at usual time, instead of only before exams. This finding from interview accords with that of statistical analysis: the high score group gets the least score (3.081) in this item, while the low score group gets the most score (3.583), and the intermediate group gets 3.245.

Another more often used strategy is “learn some words by guessing word meaning from context (3.22)”. The subjects from high and intermediate proficiency group say they like to learn words from context, which is a more efficient way to remember words deeply and use them freely. They say when they come across new words, they would first guess the meaning according to the clues, only if they still couldn’t guess the meaning and they need know its meaning, they would turn to dictionaries. Besides, as pointed out by Hulstijin (2003), to successfully guess the meaning from context, learners need to know 98% of the words in the text. This conclusion also reflected in the interviews, one student from intermediate group remarked “When I took up a novel, I met with too many unknown words in one paragraph; I was discouraged and gave up.”

*Strategies Less Used by the Subjects*

One of the incidental vocabulary strategies less used by the respondents is “learning some words by communicating with foreigner’s teachers or classmates (2.22)”. As in China, English is a foreign language, which is not used as a working language. Thus confined to foreign language learning environment, learners lack of sufficient input of authentic materials. **Although, the English classes were organized in English, only the active and top students have more chances to speak English in class. (should be corrected)** Besides, although there are several foreign teachers in the university, only a few students have more chances to contact with the foreign teachers to learn English.

The other less incidental vocabulary strategy used by the respondents is “learn some words by attending out-of-class activities such as English corner or and speech competition (2.26)”. In the interview, most subjects state they seldom attend out-of-class activities such as English corner and speech competition because they are always burdened with heavy curriculum or research courses. As they said, another important reason is that they are seldom urged to speak English. It can be seen that, subjects show a certain degree of passive and introverted attitude towards English learning. The subjects in intermediate and low proficiency groups indicate they are not interested in that kind of activities, especially three subjects in the low proficiency group claim that they don’t want to take English course unless it is compulsory. The high proficiency group shows that they seldom learn some words from the activities they participate in.

*Correlation*

This study shows that there exists correlation between the vocabulary test and vocabulary learning strategies. Most learners with upper high vocabulary score learn vocabulary by incidental learning, while learners with lower high vocabulary score learn some incidental vocabulary; learners with low

vocabulary score use the least incidental learning strategy. This finding is in agreement with the findings of many previous studies on L2 vocabulary. Fan (2003) found that the students who were the most proficient in English vocabulary used more sources (reading novels, newspapers, magazines etc outside class to increase English vocabulary, guessing, dictionary strategy) than the less proficient students. Nation (2001) deals with the relationship between vocabulary and reading, listening, speaking, writing ability, and the methods of how to improve reading, listening, speaking, writing vocabulary, which implies the correlation between vocabulary size and vocabulary learning proficiency. Wu and Wang's (1998) study shows that the application of context strategy is most correlated to high vocabulary proficiency, while the strategy of rote-memorization of word lists is most correlated to the low vocabulary proficiency.

## **CONCLUSION**

### **Conclusions and Implications**

Through the research on incidental vocabulary learning of non-English major graduates in Chongqing University, some conclusions can be drawn:

The subjects investigated tend to consider English learning environment is changing better, and more English reading materials are available. They are also aware of the importance of incidental vocabulary learning and its relative learning strategies. These positive beliefs on incidental vocabulary learning are helpful to learners' vocabulary development. Teachers are encouraged to help students to expand their conscious involvement in the learning process. Besides, teachers should choose appropriate teaching materials, teaching methods or techniques to promote learners' interests as well as their learning proficiency.

High-proficiency learners and low-proficiency learners show significant differences in choosing vocabulary learning strategies in their incidental

vocabulary learning. Thus, it's essential for teachers to give different guidance to learners at different levels. For example, teachers should inform learners that there is no definite rule that one type of strategy is better than another, and each strategy has its merits. The strategies selected depend on which one is more suitable for students themselves or in a particular context.

There exists obviously positive correlation between the vocabulary test and vocabulary learning strategies, that is, with the increase of vocabulary level, the number of incidental vocabulary strategies used by the subjects also increases gradually. Therefore, strategy training will be desirable, which is a part of teachers' responsibilities. Some learners use vocabulary-learning strategies ineffectively, and may not be aware of other strategies that are helpful. Thus, it is teachers' responsibilities train learners' abilities and skills to use more effective learning strategies, instead of relying heavily on less beneficial strategies such as rote learning and translation strategy. That's to say, teachers are supposed to teach students not only what to learn, but also how to learn. For example, when practicing guessing of word meaning from context, teachers should warn the learners not to rely on word morphology too much and not to comprehend sentences on the basis of individual words, as some of them may be "pseudo-familiar (they appear to be familiar though they are not)". Instead, meanings should be checked in a wider context.

Therefore, the incidental vocabulary learning can be a great supplement to intentional learning. Learners should be aware that opportunity for incidental vocabulary learning occupies much more time than those in textbooks. The employment of the incidental vocabulary learning strategy is complex and it is necessary for teachers to offer appropriate guidance to incidental vocabulary learning. In addition, the teachers always focus on helping the learners develop strategies to comprehend and learn incidental vocabulary, and the final goal of these strategies is to help the learners continue to learn new words and increase their vocabulary size.

### **Limitations and Suggestions for Further Study**

Though the present research has provided a comparatively detailed description of overall pattern of the incidental vocabulary learning, the correlation between strategy score and testing score and the differences between high score, intermediate score and low score, there are some limitations.

Due to time limitation and other practical restrictions, the subjects in this research consist of only 150 non-English major graduates from Chongqing University, which needs to broaden in future research. It can also involve more colleges of the arts, as the main subjects this time are from colleges of the sciences. And subjects can include undergraduates and comparison between undergraduates and graduates or between males and females can be made. In addition, T-test can be used to test the differences about more specific incidental vocabulary learning strategies between different groups. Finally, many other factors influenced incidental vocabulary learning are worth further research, such as reading purposes and reading habits.

In a word, the research has shed some lights on the incidental vocabulary learning, which are helpful to both vocabulary teaching and learning. To some extent, incidental vocabulary learning deserves more attention and more detailed research.

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## APPENDIX

**TABLE A**  
**Comparison of the Three Groups (test score, total score and Q1-Q4)**

group		Testing score	Total score	Q1	Q2	Q3	Q4
1	Mean	27.4375	50.6667	3.2917	3.2083	3.1667	3.2083
	N	48	48	48	48	48	48
	Std. Deviation	1.71945	6.48616	.95458	.77903	1.04950	1.38487
2	Mean	15.2500	35.9167	2.2500	2.3333	2.2500	1.5833
	N	48	48	48	48	48	48
	Std. Deviation	2.10878	10.17536	1.05529	1.30268	1.54479	.90034
3	Mean	23.1667	42.7857	2.7857	2.9286	3.0000	1.9286
	N	54	54	54	54	54	54
	Std. Deviation	1.81720	4.37086	1.48171	.73005	1.48035	.91687
Total	Mean	22.0000	44.9200	2.9000	2.9200	2.9000	2.4600
	N	150	150	150	150	150	150
	Std. Deviation	5.36428	9.16257	1.09265	.96553	1.26572	1.35842

**TABLE B**  
**Comparison of the Three Groups ( Q5-Q10)**

N		Q5	Q6	Q7	Q8	Q9	Q10
1	Mean	3.4850	3.4167	3.0817	2.7917	3.4583	2.7917
	N	48	48	48	48	48	48
	Std. Deviation	1.65010	.92861	.99909	1.31807	1.02062	.83297
2	Mean	2.0000	2.5833	3.5833	1.6667	2.4167	1.8333
	N	48	48	48	48	48	48
	Std. Deviation	1.34840	1.16450	1.44338	.77850	1.56428	1.19342
3	Mean	2.2543	3.4286	3.2457	1.7543	2.5000	2.0000

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	N	54	54	54	54	54	54
	Std. Deviation	1.47693	.85163	1.48171	1.06904	1.09193	.78446
Total	Mean	2.6000	3.2200	3.2600	2.2200	2.9400	2.3400
	N	150	150	150	150	150	150
	Std. Deviation	1.59079	1.01599	1.17473	1.25054	1.26829	1.00248

**TABLE C**  
**Comparison of the Three Groups (Q11-Q16)**

N		Q11	Q48	Q13	Q54	Q15	Q16
1	Mean	2.8750	3.0417	2.5417	3.5417	3.3750	3.7917
	N	48	48	48	48	48	48
	Std. Deviation	1.48361	.69025	1.31807	.97709	.84823	.93153
2	Mean	1.5833	1.5833	2.8333	3.1667	2.2500	2.5000
	N	48	48	48	48	48	48
	Std. Deviation	.66856	.90034	1.19342	1.19342	1.21543	1.50756
3	Mean	1.7857	2.7543	2.6429	2.9286	2.5754	3.8571
	N	54	54	54	54	54	54
	Std. Deviation	.97496	1.38278	.92878	.73005	1.15787	.77033
Total	Mean	2.2600	2.6000	2.6400	3.2800	2.8800	3.5000
	N	150	150	150	150	150	150
	Std. Deviation	1.32187	1.54886	1.17387	.99057	1.11831	1.18235