

# English Vocabulary Learning Strategies between High-achievers and Low-achievers

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## Abstract

This study intends to compare the vocabulary learning strategies between high-achievers and low-achievers in junior high schools, and thus to explore effective vocabulary learning strategies to provide suggestions for English vocabulary teaching and learning practice. It is found out that high-achievers apply English vocabulary learning strategies more frequently than low-achieving students do. More specifically, in terms of meta-cognitive strategies, low-achievers use more pre-planning strategies, while high-achievers apply more selective attention strategies. For cognitive strategies, both high-achievers and low-achievers tend to use repetition strategies. Achievers are better at categorizing what they have learnt than low-achievers. For affective strategies, low-achievers apply reference books strategies most frequently and neither type of students uses authentic material strategies very often. Students' beliefs, habits and attitudes towards vocabulary learning affect the application of strategies to some extent. High-achievers are better at utilizing the environment and even creating opportunities for English communication than underachievers. In addition, high-achievers have stronger learning motivation and they are also better at setting and achieving goals than low-achievers.

**Keywords:** learning strategies, high-achievers, low-achievers

## 1. Introduction

### 1.1 Research Background

The famous British linguist Wilkins (1972) once commented that "...without vocabulary nothing can be conveyed." Therefore, vocabulary is the cornerstone of English learning. Wen (1996) considered that "vocabulary is one of the most difficult problems in learning English, and vocabulary learning strategies seriously affect students' English competence." The English Curriculum Standards for General Senior High Schools (2017 version) requires students to actively use and adjust English learning strategies. In China, many junior high school students struggle with English vocabulary learning throughout school while others may quite enjoy it. Therefore, it is worth researching and exploring vocabulary learning strategies applied by different levels of students to improve the overall learning and teaching. This study is to investigate the vocabulary learning strategies between high-achieving and low-achieving students and explores effective vocabulary learning strategies through comparative analysis.

### 1.2 Research Significance and Purpose

The theoretical and practical components of the study can both be used to assess its importance. Theoretical significance: language learning strategy is an important part in second language acquisition research. Taking junior middle school students as research subjects, this study is expected to examine the effect of vocabulary learning strategies used in their vocabulary learning, in order to enrich the research of vocabulary learning strategies.

Practical significance: on one hand, the research results found in this study can help English teachers better understand the use of vocabulary learning strategies of excellent students and average students, and clarify effective strategies. English teachers may refer to the results of this research to adjust vocabulary teaching methods to achieve effective vocabulary teaching purposes. On the other hand, this research may help students understand their own learning styles, analyze the advantages and disadvantages of the vocabulary learning methods, adjust the strategies in time and master a set of learning skills that can promote their own learning.

At present, the majority of junior high pupils put a lot of efforts to learning new words, yet the outcomes are not always satisfactory. It is difficult for them to apply flexibly in exams or communication with others despite the fact that they

have learned certain words. Therefore, the study aims to put forward some suggestions on how to improve English vocabulary learning proficiency. Additionally, it will support junior high school English teachers in raising their awareness regarding vocabulary instruction and actively incorporating vocabulary learning techniques into particular teaching methods.

## 2. Literature Review

### 2.1 Definition of Key Terms

#### 2.1.1 High-achievers

In a narrow sense, high-achievers are students “who have high intelligence in certain fields. They can think actively and achieve better learning outcomes in school environment than other students.” (Xue, 2004) and Winner (1997) defined high-achievers as having academic talent or high intelligence quotient. While in broad sense, the high-achiever refers to an excellent student who is good at study out of his or her innate intellectual advantage, hardworking, together with the support of the good learning environment provided by parents, school and society. Thus, in a broad sense, achievers are students who have excellent academic performance, ability and specialties, ideological character and other aspects.

Samperio (2019) stated that the high-achievers in language learning refer to those who have high learning efficiency, excellent performance and can better achieve the goal of language learning. When narrowing down to English vocabulary learning, Mantle (1995) believes that high-achievers are those who have strong vocabulary comprehension and learning ability. Meanwhile, they are capable of actively resolving issues that arise during language learning.

In this research the achievers refer to students with excellent English academic performance, and rank among the top 20% of their class.

#### 2.1.2 Low-achievers

Western scholars mainly define low-achievers from the perspective of “learning disabilities”. Rubin (1995) believes that although the academic performance of poor students is average, the brain and nerve development of these students are normal. That is, their intelligence is at a normal level and the reason for their academic backwardness is that they do not adapt to the new language environment in time, so they lack motivation and concentration to learn. Therefore, Rubin states that a good education can help them change the status quo and put them on a normal learning track. The United States Psychologist Kirk (2012) believes that “learning disabilities refer to difficulties in the development of language, reading and social communication skills”. This definition tells that low-achievers are significantly lower than what they should achieve in terms of reading and language development. Chinese scholar Wu (1993) defines underachievers as those who have difficulty meeting the requirements stipulated in the syllabus and have poor academic performance. Jiang (2017) defines low-achievers as those who have normal intellectual development, however, they are unwilling to learn, have inappropriate learning methods as well as unclear learning goals. Their English scores are below the average in three major tests: monthly exam, midterm exam, and final exam.

In this research, low-achievers refer to the students who have normal intellectual development. However, they have lower learning ability and obvious difficulties in English learning, which often leads to students listed at the bottom 20% of the class in English competence.

### 2.2 Classification of Vocabulary Learning Strategies

English vocabulary learning strategies are specific methods, steps or behaviors that students often consciously adopt to improve their progress in acquiring the target vocabulary. (Schmitt, 1997) In this study, vocabulary learning strategies are “active and effective learning strategies adopted by learners to achieve the goal of vocabulary learning.

From the perspective of cognitive processing, Chamot & O'Malley (1990) divide vocabulary learning strategies into two aspects, which are cognitive strategies and meta-cognitive strategies. Among them, the vocabulary cognitive strategies are divided into mechanical memory strategies, classification strategies, contextual strategies, dictionary strategies, word-guessing strategies, and practice strategies. Meta-cognitive strategies are divided into planning strategies, self-monitoring strategies, self-regulation and selective attention strategies. Schmitt (1997) advocated that vocabulary learning strategies should be composed of a systematic method, through which the use of methods at all stages of vocabulary learning can be realized. Meanwhile, learners should make full use of memory, cognition and other methods in the learning process. Thus, a web of words could be formed in human memory.

In Chinese research, Ma (1997) believes that vocabulary learning strategies can be realized through mechanical repetitive memory, contextual association memory, and independent memory.

In this study, Chamot & O'Malley's (1990) classification is mainly adopted, and the vocabulary learning strategy mainly involves meta-cognitive strategy, cognitive strategy and affective strategy.

### *2.3 Related Researches*

Wen (1995) has used qualitative analysis to conduct case studies and concluded that the different learning methods used to learn English lead to different effects of learning between high-achievers and low-achievers. Fu (2008) found that low-achievers also believe that word memory should be done through context and practical applications. However, low-achievers do not use many methods when memorizing words and mostly rely on mechanical memory.

In recent years, researchers have explored the differences between high-achievers and low-achievers in the use of vocabulary learning strategies in more specific ways. For example, Wu Xiaohong (2016) conducted research on junior high school students and found that achievers are better at using learning strategies, especially contextual strategies. However, students with learning difficulties often use cognitive strategies. Native language strategies and practice strategies are the most common strategies used. And low-achievers are unwilling to ask teachers for advice and cooperate with classmates to complete learning tasks. Both achievers and underachievers believe that vocabulary should be learned in practice.

Wilkins (1972) believes that internal and external reasons, stability and instability are two aspects that people often consider in attribution. People choose different ways of attribution, resulting in different results. Internal stability factors that contribute to success can make individuals feel proud. On the contrary, people are prone to worry. Therefore, for learning strategies, learners need to exert their internal subjective initiative to study hard. Stern (1975) summarizes ten strategies used by high-achievers and points out the corresponding strategies that poor students lack. Among them, the learning strategies used by high-achievers are: (1) having their own learning style; (2) being able to learn independently; (3) having endurance in language learning; (4) having knowledge about the use of language skills; (5) building new language systems by trying various methods; (6) continuously tracking the meaning of language; (7) constantly practicing language; (8) liking using language in real environment; (9) being able to monitor themselves; (10) connecting with the local language and solving problems.

Studies at home and abroad have studied vocabulary learning strategies from different aspects, which have provided references for this research. However, few studies have taken junior high school students of different levels as research subjects. Thus, the depth and breadth of vocabulary learning strategies used by high-achievers and low-achievers still need to be explored. Thus, this study aims to explore the overall tendency and differences of English vocabulary learning strategies used by high-achievers and low-achievers among Chinese junior high school students.

## **3. Research Methodology**

The research consists of the following four parts: research questions, research subjects, research instruments and research procedures.

### *3.1 Research Questions*

Research questions of this paper are displayed in the following:

- (1) What is the current situation of vocabulary learning strategies among junior high school students?
- (2) What are the characteristics of vocabulary learning strategies of junior high school students with different English levels?
- (3) What are the reasons for these differences in the use of English vocabulary learning strategies between high-achievers and low-achievers?

### *3.2 Research Subjects*

Participants in this paper are students from five classes (class1–class 5) in the eighth grade of Huajie Bilingual School. There are 60 high-achieving students and 60 low-achieving students, totaling 120. These students are selected as research subjects for the following reasons: on one hand, some students have formed relatively better study habits after studying English for several years. Meanwhile, they also lay a good foundation for future English learning. On the other hand, there are still many students who study in a poor way that results in their English academic achievements are evidently lower than other classmates.

### *3.3 Research Instruments*

The instruments of this study are questionnaire and interview. Both questionnaire and interview are cited from previous researchers. The purpose of the questionnaire is to study the general situation and specific differences in

learning strategies between high-achievers and low-achievers. And an interview is adopted to explore the reasons for these differences.

The questionnaire is divided into two parts: the first part is about personal information, including class, grade, gender and name. The second part is a questionnaire on vocabulary learning strategies. The questionnaire includes 16 questions. It consists of cognitive strategies, meta-cognitive strategies and affective strategies. The type of strategy corresponding to each question is shown in Table 3-1. Students are asked to choose the appropriate portion after each question honestly. The vocabulary learning strategy questionnaire applies a five-level Likert scale. 1 stands for “totally inconsistent with my situation”, 2 stands for “basically inconsistent with my situation”, 3 stands for “uncertain”, 4 stands for “basically consistent with my situation” and 5 stands for “completely consistent with my situation.” Vocabulary learning strategies include meta-cognitive strategies, cognitive strategies and affective strategies.

Table 3-1. Description of Questionnaire

	First-level indicators	Second-level indicators	Question number
Vocabulary learning strategies	Meta-cognitive Strategies	Pre-planning	1
		Self-monitoring	2
		Selective attention	3
		Active learning	4
		Word guessing	5
		Using dictionary	6
		Repetition strategies	7
		Association	8
		Grouping	9
		Contextualization	10
		Application strategies	11
		Self-motivation	12
	Affective Strategies	Cooperation	13
		Reference book	14
		Network	15
		Authentic material	16

The purpose of the interview is to explore the causes of English vocabulary learning strategies from different aspects. Interviews are mainly divided into structured interviews, semi-structured interviews, unstructured interviews and group interviews (Williams, 1997). This study adopts a semi-structured interview format, hoping that the surveyed students can speak freely, which is beneficial for the researcher to gain a deeper understanding of the respondents and discover the reasons.

### 3.4 Research Procedures

#### 3.4.1 Instructions for Sampling

The sample of this study comes from a junior middle school in Lian Yungang. Firstly, five classes from the 8<sup>th</sup> grade in the school are chosen randomly. Then, the author observes the recent midterm test scores of students respectively and selects subjects based on the results of the midterm exam. Finally, 120 students from five classes are selected as subjects, including 60 achievers whose scores ranked among the top 20% of their classes and 60 low-achievers are chosen from students whose grades ranked in the bottom 20% of their classes.

#### 3.4.2 Data Collection

After obtaining the permission of the English teacher, the researcher concentrates all the research subjects in a large classroom during a large break. Before conducting the questionnaire, in order to reduce unnecessary psychological anxiety among students, the students are told that the data from the questionnaire they participated in this time is for research purpose only. The results are not used to measure their daily performance or record as exam scores. Finally, all

120 students completed the questionnaire as required. The interview is conducted by digital recording. After the interview, the researcher transcribes the recorded content into written words.

#### 4. Results Analysis and Discussion

Through the comparison between the two groups of students, combined with the independent sample T-test, the results related to the research questions presented in Chapter3 is to be analyzed in detail.

##### 4.1 Overall Tendency

The author analyzes the questionnaire, which can intuitively count the scores of each student.

Table 4-1. Group Statistics

Group Statistics					
	Type of students	N	Mean	Std. Deviation	Std. Error Mean
Numeric	High-achieving	60	94.3520	12.02431	1.96424
	Low-achieving	60	80.2547	9.203454	4.34285

Table 4-1 shows that the average score of high-achieving students is 94.3520, while that of low-achieving students is 80.2547. The sample size of both high-achieving and low-achieving students is 60, with a standard deviation of 12.02331 for high achieving students and 9.203454 for low achieving students. The standard deviation for high-achieving students is slightly higher than that for low-achieving students, indicating that the average score for high-achieving students is higher. From the standard error mean, the average score for high-achieving students is 1.96424, and the average score for low-achieving students is 4.34285. This data shows that low-achieving students are four times more likely to make mistakes than high-achieving students, which indicates that the average for low-achieving students is higher than the average for high-achieving students.

Table 4-2. Independent Samples Test

	F	Sig	T	df	Sig.(2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	.000	.275	.0245	30	.003	14.0973	2.37861	3.45821	14.9315
Equal variances not assumed			.0520	28.927	.026	14.0973	2.37861	.86245	10.2548

Based on the Levene variance equality test, if the variance is homogeneous, the T-test results of the first row are selected, and if the variance is not homogeneous, the T-test results of the second row are accepted. The criterion for determining the homogeneity of variance here is the significance of the Levene variance equality test. Based on this example, it is  $0.275 > 0.05$ , which means that the original hypothesis holds the same variance and there is no need to accept the hypothesis that the alternative hypothesis has uneven variance. Therefore, the T-test results here are  $T=0.0245$ ,  $P=0.0245 < 0.05$ . Based on the above analysis, it can be concluded that there are significant differences in the mean values of students with different grades. Combining the mean values, it can be concluded that the mean values of high-achieving students are higher than low-achieving students.

##### 4.2 General Characteristics

In order to find out the differences of the English vocabulary learning strategies used by high-achievers and low-achievers, the author analyzes statistics of meta-cognitive strategies, cognitive strategies and affective strategies respectively.

## 4.2.1 Analysis of Meta-cognitive Strategies

Table 4-3. Statistics of Meta- cognitive Strategies

Items	Type of students	Mean	Sig
1 Pre-planning	High-achieving students	3.883	0.001
	Low-achieving students	2.833	
2 Self-monitoring	High-achieving students	3.167	0.003
	Low-achieving students	2.500	
3 Selective attention	High-achieving students	4.667	0.042
	Low-achieving students	2.167	
4 Active learning	High-achieving students	3.260	0.002
	Low-achieving students	2.560	

Table 4-3 shows a significant difference in the application of each vocabulary learning strategy. As can be seen from the above table, the significant level of pre-planning, self-monitoring, selective attention and active learning strategies of achievers and underachievers are under 0.05 ( $p < 0.05$ ). It indicates that there exists a significant difference. The average of all four items is statistically different from the number 0.0.

This study finds that high-achieving students apply more meta-cognitive strategies than low-achieving students. Among meta-cognitive strategies, low-achieving students use the pre-planning strategy more frequently. The average scores of high-achieving students in selective attention are the highest and followed by pre-planning and active learning strategies. It indicates high-achieving students are able to make plans for their studies in advance. They have strong desire for learning. Therefore, they focus on key points that teachers have emphasized. In contrast, low-achieving students score lower than high-achieving students in active learning strategy. This shows that in most cases, they are pushed forward by their teacher and lack initiative in learning.

## 4.2.2 Analysis of Cognitive Strategies

Table 4-4. Statistics of Cognitive Strategies

Items	Type of students	Mean	Sig
5 Word guessing	High-achieving students	5.222	0.001**
	Low-achieving students	4.254	
6 Using dictionary	High-achieving students	4.385	0.018
	Low-achieving students	3.567	
7 Repetition Strategies	High-achieving students	6.379	0.006
	Low-achieving students	5.024	
8 Association	High-achieving students	3.478	0.002
	Low-achieving students	2.574	
9 Grouping	High-achieving students	4.503	0.007
	Low-achieving students	3.004	
10 Contextualization	High-achieving students	6.220	0.001
	Low-achieving students	5.034	
11 Application strategies	High-achieving students	4.339	0.018
	Low-achieving students	3.877	

From table 4-4, it can be found out that in the seven strategies under cognitive strategies, the significance of these strategies are under 0.05. This means that at the significant level of 0.05, there are significant differences in these strategies. Specifically, the average value of repetition strategies used by high-achieving students is 6.379, which is the highest mean value. Moreover, the average value of using repetition strategies among low-achieving students is also relatively high. It indicates that both high-achievers and low-achievers prefer to memorize English vocabularies through repetition. They may repeat the vocabulary they have learned over and over again. The most obvious

difference is the grouping strategy. The mean value of achievers and underachievers are 4.503 and 3.004 respectively. It indicates that high-achievers are better at categorizing what they have learned than low-achievers.

#### 4.2.3 Analysis of Affective Strategies

Table 4-5. Statistics of Affective Strategies

Items	Type of students	Mean	Sig
12 Self - motivation	High-achieving students	5.196	0.003
	Low-achieving students	4.024	
13 Cooperation	High-achieving students	4.000	0.010
	Low-achieving students	3.067	
14 Reference books	High-achieving students	8.994	0.000
	Low-achieving students	9.354	
15 Network	High-achieving students	3.782	0.013
	Low-achieving students	4.034	
16 Authentic materials	High-achieving students	3.783	0.012
	Low-achieving students	2.034	

Table 4-5 shows that the five branches of affective strategies, which significant level of high-achievers and low-achievers are under 0.05. That is to say, there are significant differences between achievers and underachievers in these strategies.

Specifically speaking, it can be seen from table 4-5 that vocabulary learning strategies of low-achievers are not very good at self-motivation. On the contrary, the average value of reference books and network strategies used by low-achievers is higher than that of high-achievers. We can conclude that low-achievers rely more on external assistance tools. For them, reference books and network are relatively easy to obtain. Among five strategies, there is the smallest mean difference of cooperation strategies between the two groups. It indicates that most students are willing to learn new vocabularies through cooperating with others.

#### 4.3 Main Reasons

In general, all four interviewees believe that memorizing words is necessary. Specifically, high-achievers are more aware of their weaknesses, so they do have more specific goals. For low-achievers, there is no clear goal. Some answers are presented to support the finding.

*In my opinion, English is a tool for communication. Without sufficient vocabulary foundation, we cannot communicate fluently with others in English. So, it is important for us to memorize vocabularies. (Achiever2)*

*I know memorizing words is very important for me to learn English well. But, during the learning process, I lack motivation to recite words every day. Usually, I only want to give up after memorizing a few words. (Underachiever3)*

Through interviews, it can be seen that high-achievers can perform well in persisting in memorizing words, and they attempt to employ a variety of efficient memory aids. On the contrary, although underachievers are aware of the value of word memorization, they still struggle to persevere, and their memory style is relatively monotonous. The following answers are cited from the interviews.

*I often spend an hour memorizing words every day. I also copy new words in practice. I think listening to English songs is a good way to learn English. It not only makes me interested in English, but also helps me relax. (High-achiever 4)*

*Sometimes when I don't do well in the English exam, I actively strengthen my word memory because there are many unfamiliar words in the problem-solving process. But after a period of time, I will lack motivation and give up memorizing words every day. (Underachiever1)*

According to the answers from high-achievers, it can be concluded that they are always good at reflecting on their own strategies of memorizing words, and when they find that efficiency is not high, they will promptly improve their learning methods. At the same time, they will try everything helpful to learn words. In addition, they will purchase additional English vocabulary learning materials. In contrast, low-achievers have relatively limited methods of

memorizing words and rarely reflect or improve their learning methods. Here are some extracts from the transcripts.

*I pay attention to using various learning methods in the process of learning English. I will make timely adjustments based on my learning outcomes. My commonly used methods include word construction, associative memory of words. (High-achiever1)*

*When I remember words, my most common method is to read them aloud. In addition, I will also copy words and repeat again and again to remember them. I rarely reflect on my learning strategies. (Low-achiever 4)*

From the interview results, it can be seen that few parents supervise them in learning English vocabulary. In addition, they also lack opportunities to communicate with others in English. However, high-achievers actively participate in extracurricular activities related to English, in order to exercise their English oral speaking ability and expand their vocabulary. However, low-achievers are not aware of expanding their vocabulary through various means. The following answers are cited from the interviews.

*My parents are usually quite busy and rarely have time to involve into study. At the same time, I seldom communicate with others in English. But I am very interested in the English words that appear in my life and actively participate in some activities. (High-achiever 2)*

*I enjoy active learning without parental supervision. I want to delve into learning English and hope to become an English worker in the future. (High-achiever 3)*

*I am at school residence and my parents rarely have the opportunity to supervise my studies. I only use English during class and after class with related exercises and transcribing new words. (Low-achiever 2)*

## 5. Conclusions

### 5.1 Major Findings

From the above research, it is found that high-achievers and low-achievers have similarities and differences in applying vocabulary learning strategies.

The two groups have a very obvious bias towards vocabulary learning strategies. High-achievers use most strategies more frequently than low-achievers. However, the average value of low-achievers is higher than that of high-achievers concerning reference books and network.

As far as meta-cognitive strategies are concerned, the most obvious difference between high-achievers and low-achievers is selective attention strategy. It is difficult for low-achievers to develop detailed plans in advance. Low-achievers have difficulty in monitoring learning process by themselves. In contrast, high-achievers usually do well in these aspects.

For cognitive strategies, the biggest difference between high-achievers and low-achievers is the grouping strategy. Through comparison, low-achievers are more accustomed to using low-level rote memorization strategies, while grouping and contextual strategies that require precise processing of materials are rarely used. Moreover, low-achievers seldom use the application strategy, nor do they often apply association strategy.

In terms of affective strategies, neither group applies authentic material strategies well. Compared with high-achievers, low-achievers show obvious weakness in adopting cooperative strategies. It can also be seen that low-achievers have lower self-motivation and rely more on external help than their counterparts.

### 5.2 Implications of the Study

As we all know, the development of vocabulary is essential to learning a language. Consequently, recording the application of students' English vocabulary strategies plays an extremely important role in improving their English proficiency. Based on the actual situation of using English vocabulary strategies of high-achievers and low-achievers in Huajie Bilingual School, the following are some implications for school teaching.

#### 5.2.1 Implications for Teachers

Firstly, as a teacher, they are supposed to strengthen their professional quality and learn more vocabulary learning strategies through self-study or training. Thus, they are more able to adjust their teaching philosophy timely. At the same time, teachers should consciously teach vocabulary learning strategies suitable for each student, and improve students' interest in vocabulary learning strategies. Ultimately, students can benefit from practical learning.

Secondly, it is necessary for teachers to teach differently according to the aptitude of students. For gifted students, teachers can adopt some flexible strategies. However, students with learning difficulties should meet lower vocabulary proficiency requirements.



Thirdly, teachers should try to cultivate students' subjective initiative in vocabulary learning. In the survey, we found that some students did not do well in making plans and self-supervised learning. Therefore, teachers need to stimulate students' subjective initiative and enthusiasm in learning, and let students actively apply some strategies to vocabulary learning in order to achieve better results. In addition, the current way of vocabulary learning strategies is relatively simple, and it is far from enough to obtain learning strategies only from classroom teaching. Therefore, it is necessary for teachers to carry out a variety of vocabulary learning strategy training to broaden students' horizons and cultivate their learning ability.

### 5.2.2 Implications for Students

In the first place, the proper vocabulary learning concepts can promote the progress of vocabulary learning. Students need to make it clear that the key to vocabulary learning is memory and application. Therefore, students should balance the relationship between them, promptly identify and solve problems during use.

In the second place, students should be aware that English vocabulary learning and application are closely linked. Therefore, in order for students to fully master a word, they must put it into daily practice after memorizing it. If students can't use it flexibly, they should modify their vocabulary acquisition techniques in light of feedback. Then, students will engage in a new round of reinforcement learning.

In the third place, achievers and underachievers are supposed to help each other in their studies. In a group, achievers have the ability to promote and supervise the vocabulary learning of underachievers. They can share their experience of learning vocabulary. Students' ability to communicate with one another will be improved, and the environment for proactive language communication will also be created. In addition, cooperative learning creates a sense of competition among students, which ultimately promotes their enthusiasm for learning.

### 5.3 Research Limitations

Although this study draws some conclusions by exploring English vocabulary learning strategies by high-achievers and low-achievers in Huajie Bilingual School, there is much space for improvement.

Firstly, there are only 120 junior middle school students who are selected from a middle school in Lianyungang. Therefore, the data obtained may not adequately represent the use of English vocabulary learning strategies by students in other cities. So, it is necessary to involve more students from other schools in different cities and levels in the future studies.

Secondly, the researcher of this study only conducted a quantitative survey and analyzed it from the perspective of a large sample, failing to describe the individual differences of each sample. The design of the questionnaire adopts Chamot & O'Malley's (1990) classification of vocabulary learning strategies, ignoring other factors that can be changed, such as educational background, gender, learning motivation. Therefore, these factors should be further considered in future research.

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### Authors contributions

Yuanyuan Guan and Daoyu Huang were responsible for study design and revising. Xiaoqing Zhang was responsible for data collection. All authors read and approved the final manuscript and contributed equally to the study.

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No additional data are available.

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## Appendix I

Dear students:

The following questionnaire is to find out about your learning strategies of English vocabulary for the purpose research and the data is for research only. Please answer according to facts. Please read through each statement and tick the right number accordingly. 1 stands for “not at all”, 2 stands for “basically not”, 3 stands for “not sure”, 4 stands for “mainly yes”, and 5 stands for “completely yes”.

Items	1	2	3	4	5
1. I have plans for vocabulary learning each day, each week and each month.					
2. I review new words regularly by copying and reading aloud.					
3. I pay special attention to the key words and frequent words in class.					
4. Besides textbooks, I do extra English reading after class.					
5. I try to guess the meaning of new words according to grammatical structures like the connecting word “but”.					
6. I look up new words if they keep showing up in my reading.					
7. I repeat the new words again and again until it is memorized.					
8. I use imaginary pictures to remember new words.					
9. I classify new words into classes before memorizing.					
10. I try to memorize new words in contexts.					
11. I try to apply new words and in this way to memorize them better.					
12. English vocabulary learning is very interesting and I like to learn new words.					
13. I exchange learning methods with classmates and check on each other.					
14. I look up new words in dictionaries.					
14. I surf on the internet for English materials to learn new words.					
15. I try to enlarge my vocabulary through reading newspapers, magazines or books.					

Thank you very much!

(The questionnaire is cited from a research paper: *A Study on the Correlation Between English Vocabulary Learning Strategies and Vocabulary Proficiency of Junior High School Students.*)

## Appendix II

1. Is it very important for you to memorize vocabulary? Why?
2. Do you reflect the methods of remembering words? How?
3. Do you always persist in remembering words? Why?
4. Does anyone (including your parents) help you remember English words and do you have any other channels for learning vocabulary besides classroom learning?