

# Study on Motivational Regulation Strategies of Undergraduate Students in Memorizing English Vocabulary

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**Abstract:** Vocabulary is one of the core elements of English learning. Strong motivation can help college students memorize words to improve their vocabulary. At present, there is a lack of research on the motivational regulation of college students when memorizing words. The present research is to investigate the motivational strategies of college students in remembering vocabulary. In this study, 188 sophomores and juniors are surveyed by questionnaire. SPSS27.0 is used to analyze data. Descriptive statistical analysis is used to make a profile of the use of motivational regulation strategies by sophomore and junior students when memorizing words. Independent sample T-test and one-way ANOVA are used to describe the differences in the use of motivational regulation strategies in terms of gender, grade, major category and vocabulary level.

**Keywords:** motivational regulation; vocabulary remembering

## 1. Introduction

In the field of second language acquisition, motivation is considered to be one of the important factors affecting language learning<sup>[4]</sup>. In recent years, increasing number of scholars have paid attention to the motivational regulation strategies of language learners in the learning process. Scholars have studied how motivational regulation strategies affect English performance and writing performance<sup>[5][10]</sup>. However, there is relatively little research on students' motivational regulation strategies when they memorize words. The importance of English to college students is unquestionable. Meanwhile, English vocabulary is the foundation of English learning, but memorizing words is a relatively boring process. If students can't persist in the step of memorizing words, it will affect the learning of English listening, speaking, reading and writing. Strong motivation can help students persist in memorizing words to improve their vocabulary. Therefore, the research on the motivational regulation strategies of college students in memorizing words is of great research value. This study investigates the motivational regulation strategies of contemporary college students when they memorize vocabulary and the differences in the use of motivational regulation strategies in terms of gender, grade, major and vocabulary, hoping to help students improve the efficiency and effectiveness of memorizing words and help teachers improve teaching methods.

## 2. Theoretical Basis - Motivational Regulation

Wolters (2003) defines motivational regulation as intentional actions taken to initiate, adjust, increase, or maintain one's willingness to initiate, persist, and complete a learning task. In the field of second language acquisition, a large number of studies at home and abroad are mainly divided into three categories: the dimension of motivational regulation strategies<sup>[2][9]</sup>, the impact of motivational regulation strategies on performance<sup>[10]</sup>, and the interaction between motivational regulation strategies and other learning factors<sup>[3][6][8][10]</sup>.

The present research is the second category. Christopher A. Wolters (1999), a professor of educational psychology at the University of Houston in the United States, summarized motivational regulation strategies into five types: self-motivation, environmental control, mastery goal arousal, performance goal arousal and interest promotion<sup>[7]</sup>. In the field of second language acquisition, Li (2011) did a relatively early research on the classification of motivational regulation strategies in China. He conducted

a questionnaire survey on the motivational regulation strategies used by 553 non-English major undergraduates in 8 universities<sup>[2]</sup>. The strategies were explored, and eight motivational regulation strategies were obtained by exploratory factor analysis: interest promotion, performance goal arousal, mastery goal arousal, self-reward, consequence assumption, task value promotion, volitional control and self-efficacy promotion. With the development of science and technology and the outbreak of the epidemic, information-based education and teaching has gradually become the direction of future education. Hui et al. (2019) distributed self-made questionnaires in 5 colleges and universities, and collected 636 questionnaires<sup>[1]</sup>. The following six English learning motivational regulation strategies: value regulation, mastery goal arousal, equipment control, interest promotion, peer mutual assistance, and self-reward. The second type of research is the impact of regulation strategies on performance, including the impact on English performance and English writing performance. Li (2011) conducted a questionnaire survey on 553 college students, and conducted correlation analysis and multiple regression analysis on the questionnaire data. The results showed that seven motivational regulation strategies were positively correlated with English performance<sup>[2]</sup>. The third category is motivational regulation strategies and other learning. The interaction of factors. Li (2011) studied the influence of motivational regulation strategies on learning strategies, and Dong, Liu and Yang (2022) have studied the relationship motivation between language anxiety, enjoyment<sup>[1][3]</sup>.

However, the research on the motivational regulation strategy of memorizing words is still relatively scarce. Vocabulary is one of the keys to English learning. Therefore, this study aims to investigate the motivational regulation strategies of contemporary college students in memorizing words, so as to provide empirical data for this field.

### 3. Research design

#### 3.1 Research questions

(1) What is the general profile of motivational regulation strategies when they memorize words when undergraduate students remember vocabulary?

(2) What are the strategy differences in terms of gender, grade, major category and vocabulary level?

#### 3.2 Participants

Participants in the questionnaire survey for this study are sophomore and junior students in a private university in Nanchang, Jiangxi Province. The questionnaires are distributed randomly by means of snowball sampling, and 188 valid questionnaires are received, including 77 male students and 111 females; 137 sophomores and 51 juniors; 66 non-English majors in liberal arts, 66 non-English majors in science and 56 English majors. The specific information is shown in Table 1.

Table 1: The overall distribution of the subjects

variables	options	frequency	percentage (%)
gender	Male	77	41
	Female	111	59
grade	Sophomore	137	72.9
	Junior	51	27.1
major	Non-English liberal arts majors	66	35.1
	Non-English science majors	66	35.1
	English Major	56	29.8

#### 3.3 Instrument

The instrument used in this research is *Questionnaire on Motivational Regulation Strategies in Memorizing Vocabulary*. The questionnaire is edited based on the related research of Wolters (1999), Li (2011) and Hui (2019). The first part of the questionnaire is the personal information of the students, including the students' grade, gender, major and the way of memorizing words. The second part is the motivational strategies when memorizing words, with 29 items, which are placed on a 5-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree". The third part includes the student's vocabulary test scores and an open-ended question. According to the classification of Hui (2019), motivational regulation strategies are divided into six items: interest enhancement, value regulation,

mastery goal arousal, equipment control, peer help and self-reward, which we use to design the questionnaire with the performance goal arousal strategy shared by Wolters (1999) and Li (2009). This questionnaire includes seven strategies and 29 items. Each strategy contains different number and distribution of items, as shown in Table 2 below.

*Table 2: Distribution of motivational regulation strategies in the questionnaire*

Motivational regulation strategies	Item number	Item distribution
Interest enhancement	6	1, 2, 3, 4, 5, 6
Performance goal arousal	4	7, 8, 9, 10
Value regulation	3	11, 12, 13
Mastering target arousal	5	14, 15, 16, 17, 18
Equipment control	3	19, 20, 21
Peer help	4	22, 23, 24, 25
Self-reward	4	26, 27, 28, 29

### 3.4 Data analysis

The data analysis is divided into three stages: the first stage uses reliability analysis and verification factor analysis to determine the reliability and validity of the questionnaire; the second stage conducts descriptive statistical analysis on the use of motivational regulation strategies when memorizing words; the third stage adopts independent samples t-test and one-way ANOVA to explore the similarities and differences in the use of motivational regulation strategies by students in terms of gender, grade, major category and vocabulary level when memorizing words. SPSS27 is used to conduct quantitative data analysis and reliability analysis, while validity analysis uses Amos.

## 4. Research Results and Discussion

### 4.1 Reliability and validity of the questionnaire

Due to the purpose of the study and changes in some items, the reliability and validity of the questionnaire are examined in pilot test.

*Table 3: Test of reliability*

Dimension	Cronbach Alpha	Item number
Interest enhancement	0.925	6
Performance goal arousal	0.909	4
Value regulation	0.929	3
Mastery goal arousal	0.946	5
Equipment control	0.887	3
Peer help	0.881	4
Self-reward	0.917	4
Overall	0.972	29

The above is the Table 3 of the reliability analysis. The Cronbach's Alpha of each dimension and the scale as a whole > 0.85, which means the reliability of the questionnaire is good and meets the research standards.

Amos is used to conduct confirmatory factor analysis on all data, and the seven dimensions of motivational regulation are verified by maximum likelihood method. Overall, most of the model fitness indicators reach or approach the critical value, and the model is acceptable, indicating that the seven-dimension motivational regulation structure in this study has good structural validity.

### 4.2 Description

In order to understand the general profile of the use of these seven motivational regulation strategies by the students, this study uses a descriptive analysis on the data, and the results are shown in Table 4 and Table 5. First of all, as shown in Table 4, 75.5% of students use app to memorize words, which shows that students in the new era tend to memorize words electronically. Therefore, it is necessary to add the strategy of device control to this research.

Table 4: The main way of backing words

Way	Frequency	Percentage (%)
Mobile app	142	75.5
Vocabulary book	27	14.4
Vocabulary notes	6	3.2
other	13	6.9

Secondly, for the use of the seven motivational regulation strategies in the questionnaire. Table 5 shows the mean value of the students' seven motivational regulation strategies: value regulation (M= 3.75), mastery goal arousal (3.62), interest promotion (3.43), equipment control (3.41), performance goal arousal (3.35), peer help (3.29) and self-reward (3.17), the average scores of these seven motivational regulation strategies range from 3.17 to 3.75, which shows that students are the frequency of use of motivational regulation strategies is at a medium to high level (Oxford, 1990), among which value regulation and mastery goal arousal are at a high level, and the other five items are at a medium level.

Table 5: The use of motivational regulation strategies

Motivational Regulatory Strategies	Minimum value	Maximum value	Average value	Standard deviation
Interest enhancement	1	5	3.43	0.92
Performance goal arousal	1	5	3.35	1.02
Value regulation	1	5	3.75	0.97
Mastery goal arousal	1	5	3.62	0.95
Equipment control	1	5	3.41	1.02
Peer help	1	5	3.29	0.97
Self-reward	1	5	3.17	1.01

The descriptive results show that paperless learning has become a new learning method for contemporary college students and most students tend to use electronic apps to memorize words. It is more convenient, on the other hand, the word app design is becoming more and more scientific and interesting. It uses memory curves to help students review the words they have memorized, uses homophonic memory methods to enrich learning methods, and uses various example sentences, pictures and audio to increase multi-sensory memory and make the process of memorizing words more interesting. Memorizing words is an important but relatively boring part of English learning. It requires students to maintain the motivation of learning for a long period of time, and the lack of motivation when memorizing words will make it difficult for students to persist in this learning process. Therefore, it is very important to regulate their motivation in the learning process of reciting words. From the average score of each strategy, the value regulation strategy has the highest average score (M = 3.75). The score for this strategy is related to the special importance of English to Chinese students. Regardless of whether these students' future development is, to study in graduate school or find a job, English scores are closely related to being admitted to a good school for graduate school and finding a good job.

### 4.3 Gender, major, and vocabulary differences

This study explores whether there are differences in motivational regulation strategies of college students in terms of gender and grade through independent sample t-tests, and one-way analysis of variance is used to explore whether there are differences in motivational regulation strategies of college students of different majors and vocabulary levels. The details are shown in Table 5, Table 6, Table 7 and Table 8. The analysis data shows that there are significant differences in the use of motivational regulation strategies by students of different genders, majors, and vocabulary levels, but there is no significant difference in the use of motivational regulation strategies by students of different grades. Therefore, the following analysis only discusses different genders, majors, and vocabulary levels.

#### 4.3.1 Motivational regulation strategies and gender

In this study, independent sample t-test is used to examine the differences in motivational regulation strategies of different genders. According to the independent sample t-test, interest enhancement (P=0.042), value regulation (0.001), and mastery goal arousal (0.031) strategies are considered significant differences between the two groups of data, that is, there are significant differences between boys and girls in these three motivational regulation strategies. The P (significance) of the other four motivational regulation strategies is greater than 0.05, that is, there is no significant difference between male and female students in performance goal arousal, equipment regulation, peer assistance

and self-reward strategies. Therefore, in normal teaching, teachers should pay attention to guiding and improving boys' interest-enhancing strategies, value-regulating strategies, and mastery goal -evoking strategies, especially value-regulating strategies. The specific data are shown in Table 6.

Table 6: Gender differences in motivational regulation strategies

Motivational Regulatory Strategies	Male	Female	T	P
Interest enhancement	3.27±0.97	3.55±0.86	-2.05	0.042
Performance goal arousal	3.19±1.04	3.46±0.99	-1.77	0.080
Value regulation	3.48±1.08	3.95±0.83	-3.37	0.001
Mastering target arousal	3.44±0.99	3.74±0.91	-2.178	0.031
Equipment control	3.35±1.03	3.45±1.02	-0.68	0.495
Peer help	3.18±1.00	3.37±0.94	-1.35	0.178
Self-reward	3.07±1.07	3.23±0.96		0.293

#### 4.3.2 Motivational Regulatory Strategies and Major

The results of one-way analysis of variance shows that different major categories are more significant in interest enhancement ( $F=4.72$ ,  $P<0.05$ ), value regulation ( $F=6.45$ ,  $P<0.05$ ), and peer help ( $F=3.29$ ,  $P<0.05$ ). There are significant differences between them, as shown in Table 7.

Table 7: Differences in motivational regulation strategies in professional categories

Motivational Regulatory Strategies	Non-English liberal arts Majors	Non-English science majors	English major	F	P
Interest enhancement	3.51 ± 0.87	3.16 ± 1.04	3.65 ± 0.73	4.72	0.010
Performance goal arousal	3.43 ± 0.97	3.12 ± 1.09	3.53 ± 0.95	2.89	0.058
Value regulation	3.77 ± 0.93	3.47 ± 1.13	4.08 ± 0.66	6.45	0.002
Mastering target arousal	3.61 ± 0.89	3.37 ± 1.07	3.92 ± 0.79	5.41	0.005
Equipment control	3.42 ± 1.02	3.20 ± 1.12	3.64 ± 0.86	2.86	0.060
Peer help	3.39 ± 0.94	3.05 ± 1.04	3.46 ± 0.85	3.29	0.040
Self-reward	3.28 ± 0.93	2.96 ± 1.10	3.28 ± 0.95	2.23	0.110

Looking at the mean values of interest enhancement, value regulation and peer mutual assistance strategies used by students of each major category in Table 7, English majors and non-English liberal arts majors are more inclined to use these three motivations than non-English science major. At the same time, it can be seen from Table 8 that there is a significant difference between the major and vocabulary level. Specifically, the average vocabulary of the non-English majors in liberal arts and English majors is 3.62 and 4.78 respectively, which are between 4500-5500 and 5 500-6500 and between 5500-6500 and above 6 500, the average vocabulary of non-English science major is 2.82, between 3500-4500 and 4500-5500. Therefore, non-English science major should use interest enhancement, value regulation and peer help strategies as much as non-English liberal arts and English majors, which will help improve their motivation and enable them to persist in memorizing words to improve their vocabulary efficiently.

Table 8: Differences in Vocabulary Size by Major Category

	Non-English liberal arts	Non-English science	English major	F	P
Vocabulary	3.62	2.82	4.78	35.49	< 0.001

#### 4.3.3 Vocabulary Level and Motivational regulation Strategies

The one-way ANOVA results of students' vocabulary level and motivation control strategies show that there are significant differences of students at different vocabulary levels in using interest enhancement ( $F=4.23$ ,  $p<0.05$ ), performance goal arousal ( $F=3.24$ ,  $p<0.05$ ), value regulation ( $F=4.53$ ,  $p<0.05$ ) and mastery target arousal strategy ( $F=3.76$ ,  $p<0.05$ ), and according to the mean and standard deviation of motivational regulation strategies at each vocabulary level, the more vocabulary the students have, they are more inclined to use these four types of motivational regulation strategies. There were no significant differences in the other three items, that is, no matter how the students' vocabulary level is, there are no significant differences in the use of device control, peer help and self-reward strategies. The specific data are shown in Table 9.

Table 9: Differences in vocabulary size of motivational regulation strategies

Motivational Regulatory Strategies	Below 3500	3500-4500	4500-5500	5500-6500	Above 6500	F	P
Interest enhancement	2.77±1.20	3.43±0.93	3.58±0.83	3.29±1.15	3.57±0.75	4.23	0.003
Performance goal arousal	2.76±1.29	3.13±0.85	3.48±0.89	3.67±1.15	3.48±0.95	3.24	0.013
Value regulation	3.07±1.38	3.60±0.69	3.75±1.02	3.89±1.25	3.95±0.76	4.53	0.002
Mastering target arousal	3.01±1.26	3.53±0.65	3.54±0.95	3.63±1.23	3.82±0.83	3.76	0.005
Equipment control	2.92±1.32	3.51±0.81	3.38±1.09	3.47±1.08	3.51±0.94	1.71	0.149
Peer help	2.75±1.14	3.41±0.80	3.31±1.02	3.43±1.08	3.37±0.90	2.29	0.062
Self-reward	2.73±1.14	3.34 ± 0.94	3.36±0.98	3.15 ± 1.17	3.17±0.96	1.64	0.167

## 5. Conclusion

At present, motivational regulation strategies have become the focus of scholars' research in recent years (Hui, 2020), but there is still a lack of research on the use of motivational regulation strategies for college students when memorizing words. This study synthesizes the results of previous studies, investigates the use of motivational regulation strategies by college students when memorizing words through questionnaires, and explores the different uses of motivational regulation strategies in terms of gender, grade, major category and vocabulary level, which is expected to be of reference to students' learning and teachers' teaching.

According to the research results, there are obvious differences in the three strategies, namely, interest enhancement, value regulation and mastery goal arousal strategies between male and female students, and girls are more inclined to use these three strategies; non-English major liberal arts students and English majors tend to use interest enhancement, value regulation, and peer help strategies, and students in these two major categories have higher vocabulary than non-English science majors. Therefore, boys and non-English major students should improve their interest enhancement, value regulation, master target arousal and peer help strategies to strengthen their motivation to memorize words, so as to help them persist in memorizing words. At the same time, the analysis data shows that students with high vocabulary are more inclined to use interest promotion, performance goal arousal, value regulation and mastery goal arousal strategies than students with low vocabulary, so students with weaker vocabulary should strengthen interest enhancement, performance goal arousal, value regulation and mastery goal arousal strategies. At the same time, teachers should guide students to understand and use interest enhancement, performance goal arousal, value regulation, master goal arousal and peer help strategies, so as to help students improve their efficiency and final effect of memorizing words. Finally, this study finds that most students use apps to recite words, and information-based teaching and mobile learning will become the trend of future education. In the future, it is necessary to explore how to help improve students' motivational regulation in more areas of information-based teaching, mobile learning and self-learning abilities.

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