

# A Study of the Effects of Multimodal Teaching on Vocabulary Acquisition

Huan Yang

Communication University of China,Nanjing,Jiangsu,211172,China

---

**Abstract:** This study investigated the effects of combining the Ci Daren learning platform with multimodal vocabulary teaching on learners' vocabulary acquisition using two groups of non-English undergraduate students. The experimental results showed that: (1) the experimental group had a higher vocabulary acquisition rate with the help of the Ci Daren platform compared with the control group's traditional way of memorizing Chinese meanings by rote; and (2) the combination of the Ci Daren platform and multimodality has a positive effect on vocabulary acquisition.

**Keywords:** Multimodal teaching; Vocabulary acquisition

---

**Fund Project:** Supported by the Special Project of Higher Education Association of Jiangsu Province (NO.2022WJYB016).

## 1. Introduction

The rise of multimodal discourse research in Western countries in the 1990s has influenced the direction of research in many disciplines, and the role of this research in guiding language teaching has attracted increasing attention from researchers. Multimodal discourse refers to using multiple senses, such as auditory, visual and tactile sensation, to communicate through multiple means and symbolic resources such as language, images, sounds and actions (Zhang, Delu, 2009). The multimodal teaching implies that in a multimodal environment, teachers integrate pictures, sounds and other constructed forms to compose a most effective representation of meaning and instruct students to apply multimodality to construct meanings for people to communicate (Zhang, Delu, and Wang, Lu, 2010). Chen Jianlin (2010) argued that once information technology is introduced in a field, it causes great or even revolutionary changes in that field. Fan Lin (2014) proposed that vocabulary learning strategy research based on mobile terminal devices and network environment is an important research direction for the future. Wilkins (1972), a famous British linguist, said, "Without grammar, one cannot express much; without vocabulary, one cannot express anything." Therefore, this study focuses on the effects of multimodal teaching on vocabulary acquisition.

## 2. Research Background

In the 1990s, multimodal foreign language teaching theory emerged abroad. Stein (2000) proposed multimodal pedagogy, arguing that all communicative activities in the classroom are multimodal and that curriculum, teaching and assessment should be centered on the modal characteristics of the learning environment. Royce (2002) proposed "multimodal teaching methodology" and applied it in vocabulary, literacy and listening teaching. Boche & Henning (2015) emphasized the importance of multimodal teaching and learning in the context of the trend of technology in schools, and apply multimodal scaffolding in English classrooms. Based on a case study of English teachers, Jetnikoff (2015) summarized the shortcomings of IT utilization and multimodal teaching in English classes, and emphasized the importance of teachers' proficiency in using multimedia technology in multimodal teaching.

The domestic research on multimodal teaching covers various areas of college English teaching. Zhang Delu and Wang Lu (2010) focused on how different modalities synergize with each other to accomplish teaching goals in college English classroom teaching. Guo Wanqun (2013) focused on the multimodal teaching practice model, and proposed the Model of Principles of College English Classroom Instructional Design MAP (Multimodal APPLE PIE). Zhang Sheru (2014) proved that multimodal teaching can effectively reduce students' cognitive load, stimulate learning interest and motivation, and improve learning cognitive internalization. With the help

of multimodal theory and multimodal teaching, Huijun Wang and Haili Wang(2015)constructed a flipped classroom teaching model. Liu Rui and Zhang Delu(2016)explored the effects of different subtitles on teaching effectiveness in audiovisual classes. Rui Yanping and Ji Huijun(2017)applied the multimodal teaching approach to college English listening and speaking classes to explore its effects on college students' speaking anxiety and the phenomenon of classroom silence.

In general, scholars at home and abroad have studied multimodal teaching covering various aspects such as theory, teaching design, and effectiveness, but there is a lack of exploration of the effects of multimodal teaching on college students' vocabulary acquisition. Therefore, this study aims to explore the influence of multimodal teaching on students' vocabulary acquisition based on the "Ci Daren" mobile learning platform, in order to propose a new path for the cultivation of college students' vocabulary learning ability.

### 3. Research Design

#### 3.1 Research questions

This quantitative study compares and analyzes the effect of different vocabulary presentation modalities on learners' vocabulary practice performance, focusing on the following questions: (1) The effect of mobile platforms on learners' vocabulary acquisition; (2) The effect of pictures on learners' vocabulary acquisition; (3) The effect of video on vocabulary acquisition;

#### 3.2 Research Subjects

The subjects of this study were 126 freshmen majoring in non-English at Communication University of China, Nanjing. The subjects were divided into experimental and control classes, and received vocabulary learning and testing in different modalities.

#### 3.3 Research tools

The pre-test reading questions in this study were selected from the reading comprehension questions of the past exams of the University English Level III exam, and the genre of the texts was the same as the reading materials in the experiment. The Vocabulary Levels Test (VLT) by Nation (1983) was used for the vocabulary test.

The target words were selected from the textbook College English Comprehensive Course 1, and the English and Chinese annotations were taken from the Longman Modern English-Chinese Dictionary to ensure that the English annotations used high-frequency words and did not cause comprehension difficulties for the subjects. The pictures and videos were selected based on the following principles: close to the meaning of the target words, consistent with the dictionary examples, and in line with the learners' linguistic and cultural thinking. In the experiment to test the effect of pictures on vocabulary acquisition, four alternative pictures were provided for each tested word, which were chosen by the test students.

#### 3.4 Experimental steps

3.4.1 The study participants were screened, and the experimental and control classes were divided by a placement test, while the pre-test scores of 126 participants were recorded.

3.4.2 Students were encouraged to learn vocabulary on the mobile platform called "Ci Daren", while the teaching schedule and content of college English were carried out normally during the experiment.

3.4.3 The experimental class and the control class received the same course content but different teaching modes of vocabulary, and the subjects memorized the vocabulary for about 10 minutes, and then received an in-class test by completing quiz exercises.

#### 3.5 Data analysis

Data processing was performed using the software SPSS, mainly t-test.

### 4. Results and analysis

The following quantitative analyses were done for the research questions in this study, in which the data were analyzed using the statistical software SPSS and T-test for quantitative studies.

Table 1

Independent samples t-test

	Group (mean ± standard deviation) t p		t	p
	Experimental group (n=64)	Control group (n=62)		
Result 1 (Placement test score)	53.172 ± 12.413	55.097 ± 11.815	-0.891	0.375

\*p < 0.05 \*\*p < 0.01 \*\*\*p < 0.001

Using t-test (full name independent sample t-test) in the Table 1 to study the difference between different groups on the performance 1 (placement test performance), it can be seen that: the t-value of experimental group and control group is -0.891, p-value is

0.375, which means that there is no significant difference between the two groups of data ( $p > 0.05$ ), then there is no significant difference between the preliminary test performance of experimental class and control class.

Table 2

Independent samples t-test

	Group (mean ± standard deviation) t p		t	p
	Experimental group (n=64)	Control group (n=59)		
Result2(platform)	9.781 ± 0.487	9.051 ± 1.224	4.412	0***

\* $p < 0.05$  \*\* $p < 0.01$  \*\*\* $p < 0.001$

It can be seen in Table 2 that: the t-value between the experimental group and the control group is 4.412, and the p-value is 0.0, which means that there is a significant difference between the two groups ( $p < 0.05$ ). The experimental class (memorizing words with the help of the "Ci Daren" vocabulary platform) had a higher level of vocabulary mastery than the control class (without the help of any platform).

Table 3

Independent samples t-test

	Group (mean ± standard deviation) t p		t	p
	Experimental group (n=62)	Control group (n=60)		
Result3(platform+picture)	9.726 ± 0.518	9.067 ± 1.006	4.571	0***

\* $p < 0.05$  \*\* $p < 0.01$  \*\*\* $p < 0.001$

It can be seen in Table 3 that: the t-value of group experimental group and group control group is 4.571, p-value is 0.0, which means that there is a significant difference between the two groups' data ( $p < 0.05$ ). The experimental class (memorizing words with the help of the "Ci Daren" vocabulary platform and pictures) had a higher level of vocabulary mastery than the control class (only with the help of "Ci Daren" platform).

Table 4

Independent samples t-test

	Group (mean ± standard deviation) t p		t	p
	Experimental group (n=64)	Control group (n=62)		
Result4(platform+video)	9.703 ± 0.609	9.355 ± 0.749	2.869	0.005**

\* $p < 0.05$  \*\* $p < 0.01$  \*\*\* $p < 0.001$

It can be seen in Table 4 that: the t-value of the group experimental group and the group control group is 2.869, with a p-value of 0.005, which means that there is a significant difference between the data of the two groups ( $p < 0.05$ ). The experimental class (memorizing words with the help of the "Ci Daren" vocabulary platform and video) had a higher level of vocabulary mastery than the control class (only with the help of "Ci Daren" platform).

## 5. Discussion

Gu (2007) explained that modality is "the way humans interact with the external environment such as people, objects, and animals through senses such as vision and hearing". Weyers (1999) found that learners' comprehension of target language was significantly improved by both visual and auditory stimulation. Wei Qinhong (2009) concluded that diagrams of nonverbal symbols have the same conceptual, interpersonal, and discourse functions. Zeng Lei (2006) studied the nonverbal symbolic resources in the emblem of the 2008 Beijing Olympic Games, such as images, to explore their ideational functions in the process of discourse meaning construction. Liu Ling and Qin (2014) explored that compared with single textual descriptions, images and videos can express information that is difficult to express in words in a more vivid way. In this study, the vocabulary acquisition relied on the "Ci Daren" mobile platform and other modalities, such as pictures and videos, to investigate whether the combination of the mobile platform and other modalities could help students better acquire vocabulary.

## 6. Conclusion

The following conclusions were drawn from this experimental study: (1) the test results showed that the "Ci Daren" mobile platform had a more significant effect on college students' vocabulary acquisition than the traditional word memorization method; (2)

the test results showed that the combination of picture modality and video modality with the "Ci Daren" mobile platform had a more significant effect on college students' vocabulary acquisition;(3)the test results showed that the combination of video modality and the "Ci Daren" mobile platform also had a positive effect on vocabulary memory.

The results of this experiment have some implications for the teaching design of vocabulary learning:in the process of teaching design,the mobile platform and other modalities can be combined to improve students' vocabulary learning effect.

There are also some shortcomings in this study.For example,the same lexical category was not used as the target vocabulary,and the delayed test was not chosen to determine the effect of each modality on vocabulary learning.

## References:

- [1]Boche,B.&M.Henning.Multimodal scaffolding in the secondary English classroom curriculum[J].Journal of Adolescent&Adult Literacy,2015(7).
- [2]Chen Jianlin.Research on the Integration of Computer Network and Foreign Language Teaching---A Discussion on the Reform of College English Teaching[D].Shanghai:Shanghai University of Foreign Languages,2010.(in chinese)
- [3]Fan Lin.A review of second language vocabulary learning strategies in China:review and outlook--a statistical analysis based on 15 years of literature from 23 foreign language journals[J].Foreign Language World,2014.(in chinese)
- [4]Feng Qinglai.A Study on the Application of Multimedia and Web Technologies in Vocabulary Expansion Strategies[J].Foreign language e-learning,2004.(in chinese)
- [5]Guo Wanqun.On multimodal teaching and research of college English in the context of intermodality theory--and the philosophical basis of foreign language education technology[J].Foreign language e-learning,2013.(in chinese)
- [6]Gu Yiguo.Multimedia,multimodal learning analysis[J].Foreign language e-learning,2007,(4):3-12.(in chinese)
- [7]Jetnikoff,A.A case study of teaching English and multimodality with ICTs:Constraints and possibilities[J].English in Australia,2015(2).
- [8]Liu Ling,Qin Xiaoqing.An empirical study on the influence of vocabulary presentation on English vocabulary learning[J].Foreign Language,2014.(in chinese)
- [9]Liu Ling,Qin Xiaoqing.An empirical study on the effect of vocabulary presentation on English vocabulary learning[J].Foreign Language World,2014.(in chinese)
- [10]Ma Rong.A study on the development of motivational strategies for second language vocabulary learning-a dynamic perspective of motivation[J].Foreign Language,2016.(in chinese)
- [11]Miao Lixia.A comparative study on vocabulary strategies of English majors and non-English majors[J].Foreign language e-learning,2008.(in chinese)
- [12]Rui Yanping, Ji Huijun.The effect of multimodal listening and speaking instruction on speaking anxiety and classroom silence[J]. Foreign Language E-Learning,2017.(in chinese)
- [13]Royce,T.Multimodality in the TESOL classroom:Exploring visual-verbal synergy[J].TESOL Quarterly,2002(6).
- [14]Stein,P.Rethinking resources:Multimodal pedagogies in the ESL classroom[J].TESOL Quarterly,2000(2).
- [15]Tian Qianqiu.The development status and trends of mobile language learning[J].Foreign language e-learning,2009.(in chinese)
- [16]Wang Huijun,Wang Haili.Research on flipped classroom teaching model in multimodal perspective[J].Research on Electronic Education,2015.(in chinese)
- [17]Wang Songchang.Analysis of factors affecting English majors'vocabulary learning strategy choices[J].Journal of Guangdong University of Foreign Studies,2011.(in chinese)
- [18]Wilkins D A.Linguistics in Language Teaching[M].London:Edward Arnold,1972.
- [19]Weyers J R.The effect of authentic video on communicative competence[J].The Modern Language Journal,1999,(3):339-349.
- [20]Wei Qinhong.Research on multimodalism and college students'multiple literacy skills[J].Foreign language e-learning.2009,(2). (in chinese)
- [21]Zhang Delu,Wang Lu.The synergy of multimodal discourse modalities and their representation in foreign language teaching[J]. Journal of Foreign Languages,2010.2.(in chinese)
- [22]Zhang Delu.Exploring a comprehensive theoretical framework for multimodal discourse analysis[J].China Foreign Language,2009.(in chinese)
- [23]Zeng Lei.The construction of the overall meaning of dynamic multi-symbolic discourse[J].Research on Foreign Language Arts Education.2006,(3):42-48.(in chinese)