The Application of Online Vocabulary Testing Mode in College English Teaching

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Abstract

The purpose of this study is to explore the effect of the application of online vocabulary testing mode in College English learners' vocabulary learning. The subjects are the first year non-English majors in a comprehensive university in Beijing. The online testing mode and the traditional paper-based testing mode are designed and applied to the experimental group and the control group respectively. The experiment lasts for 12 weeks. Data are analyzed with SPSS windows 19.0. The results show that the application of the online vocabulary testing mode is conducive to improving the effect of vocabulary acquisition, arousing college English learners' interest in vocabulary learning and freeing teachers from the heavy load of marking numerous papers.

Key words: College English teaching; Online testing; Paper-based testing; Vocabulary acquisition

INTRODUCTION

In all stages of English teaching, vocabulary learning has always been the top priority in teaching. In recent years, all kinds of colleges and universities have actively tried the blended learning mode, emphasizing that the teaching should reflect the teacher's leading role, the students' initiative, and the diversification of learning methods and approaches. More and more researchers highlight the ways to use the Internet and mobile phones in vocabulary teaching to achieve better teaching and learning effect. This study attempts to introduce the online vocabulary testing mode into college English teaching in order to improve the efficiency of teaching, to arouse the enthusiasm of students to learn English vocabulary, and to improve the retention of vocabulary memory.

1. LITERATURE REVIEW

This study summarizes the domestic related research from three aspects: the definition of blended learning, the application of blended learning and online testing in College English teaching.

1.1 Definition of Blended Learning

Blended learning began in the late 1990s. Researchers defined blended learning from the perspectives of learners, teachers, instructional designers and educational managers. Chinese researchers generally believe that blended learning embodies the integration of various teaching theories, the integration of teachers' leadership and students' initiative, and the integration of physical classroom and online media (He, 2004; Li, 2004; Tian et al., 2005; Qi et al., 2007).

The international educational technology community has defined the connotation of blended learning and proposed that this learning mode can give full play to the advantages of traditional learning mode and online learning, reflecting both the leading role of teachers and the initiative of students (He, 2004). Li Kedong (2004) holds that blended learning is the combination of on-line learning and off-line learning. The key is to comply with Schramm's law of media selection, i.e., to select right media and combine those properly so as to achieve the best results with low cost and excellent effect. He designed

eight steps of blended learning: to determine the goal of blended learning, to determine the expected performance, to select the transmission channel and media, to develop a blended learning plan, to design support strategies, to observe the implementation of the plan, to conduct learning evaluation and to revise the learning plan.

The above research explains the theoretical basis and key factors of blended learning. The design of the steps of blended learning has a strong guiding significance for teaching practice.

1.2 The Application of Blended Learning in College English Teaching

The empirical research of domestic blended learning in College English teaching mainly explores the effect of blended learning on improving learners' English listening, speaking, writing, translating and other linguistic abilities (Hou, 2010; Ma et al., 2011; Meng, 2011; Qi et al., 2007). Hou (2010) found that the blended teaching mode has certain effect on improving students' English listening and speaking ability. Ma et al. (2011) showed that the blended teaching mode promoted the improvement of students' oral ability. Meng (2011) analyzed the relationship between writing self-efficacy and blended English writing, holding that the lack of online learning methods and self-monitoring strategies is a common difficulty for students. Qi et al. (2007) compared the traditional teaching mode with the multiple learning modes combining online autonomous learning and classroom face-to-face teaching with the Blackboard Academic Suite (TM) Online Teaching Management Platform. The results show that the arrangement of autonomous learning tasks through the network, the development of group cooperation, and the combination of classroom teaching and multi-level monitoring and evaluation means and methods are conducive to improving learners' English learning effect and linguistic ability.

All of the above studies believe that the application of blended learning in college English teaching has obvious effects and advantages. How to apply blended learning in teaching needs to be designed according to the teaching object and content.

1.3 The Application of Online Test in College English Teaching

The online vocabulary testing in the study refers to a test mode which is different from the traditional paper-based test mode and applies the most advanced network technology and database technology to English vocabulary teaching (Bai et al., 2014). There is a question bank about English vocabulary in the computer. When it is necessary to carry out a vocabulary test, the computer will randomly pick out the questions from the question bank and present them to each student through the network. The advantages of online time include more reasonable proposition, more flexible test method, and more convenient data statistics and so on, which the traditional test does not have.

Shen (2016) used Phoenix One Virtual Reality Three-dimensional Interactive Teaching Platform in a Guangdong vocational college to conduct empirical research on online tests of grammar and vocabulary, English listening, reading, translating and writing. The results show that the online test platform is helpful in cultivating students' online reading habits and improving their English reading ability, and its data analysis and statistical function free teachers from marking numerous papers.

Generally speaking, the application of Internet and mobile phone in teaching has greatly changed the teaching and learning mode, contents and examination forms of college English. However, there are only a limited number of empirical studies on the application effect of the online vocabulary testing mode. The purpose of this study is to design an online vocabulary testing mode for a specific course, and apply it to the course stage assessment to improve the effect of English vocabulary acquisition and retention.

2. RESEARCH METHODOLOGY

2.1 Research Questions
The research questions of the study include:

i. What is the effect of online vocabulary testing mode in English vocabulary teaching?

ii. Is the application of online vocabulary testing mode conducive to the memory and retention of English vocabulary?

2.2 Research Method

2.2.1 Participants

Subjects

The subjects of this study are first year non-English majors from a comprehensive university in Beijing. Four intact classes were randomly selected, a total of 153 students (34 + 35 + 41 + 43), of which two constitute the experimental group and the other two constitute the control group. For the experimental group the online vocabulary testing mode is employed while for the control group the traditional paper testing mode is adopted. The teaching materials, contents and process employed for the two groups are the same. Moreover, the target vocabulary tested for both are also the same.

Lecturers

There are two teacher participants in the experiment. The two are in the same English teaching group, who are responsible for the teaching of the experimental group and the control group respectively.

2.2.2 Intervention to Experimental Group and Control Group
In this study, the online English vocabulary testing mode is implemented in the experimental group and the paper-based English vocabulary testing mode is implemented in the control class. Table-1 shows the details of the two testing modes.

Table 1
Online vocabulary testing mode and paper-based testing mode

Testing mode	Subjects	Environment	Tools	Target vocabulary	Times /unit	Quantity /time	Opening time	Length/ Time	Marker	Criteria of score
Online Testing	Experimental group	After-class	Integrated online education platform ("Tsinghua Education Online" of audio-visual education)	Vocabulary of intensive reading	10 times at least	10 words (random)	From the beginning to the end of the semester	10 minutes	system	Average
Paper-based Testing	Control group	On-class	papers	Vocabulary of intensive reading	1 time	20 words (fixed)	One time on class	20 minutes	Manual marking	paper score

2.2.3 Experimental Tools
Online vocabulary test bank

The online test bank of vocabulary used in this study is originated from the vocabulary of the intensive reading in *College English I*, and the type of the test is blank filling. By using the strategy of test paper, 5 online tests vocabulary corresponding to the 5 teaching units are set up.

Papers for vocabulary stage assessment

Corresponding to the 5 teaching units of *College English I*, 5 papers of unit vocabulary test are designed.

Pre-test and post-test papers

The pre-test and post-test papers are used for the pretest and posttest at the beginning and end of the semester respectively. The target vocabulary and the questions in the two tests are the same.

"Tsinghua Education Online" online education integrated platform and V8 mobile terminal

"Tsinghua Education Online" online education integrated platform takes course teaching as the core and provides "mobile learning client" (EOL APP) to support students' online learning and testing on mobile devices.

Vocabulary learning questionnaire

The vocabulary learning questionnaire is employed to survey the subjects' feedback of their English vocabulary learning methods and the evaluation of vocabulary testing mode.

2.3 Experimental Process

2.3.1 Matching Experimental Group and Control Group

The subjects of this study are first year non-English majors from a comprehensive university in Beijing. Four intact classes were randomly selected for vocabulary pretest. The pretest was conducted at the second week of the semester. The target vocabulary is the intensive reading vocabulary of the five teaching units of the course College English I to be taught in the semester. The type of questions is blank filling. There are 50 questions in total. Each question has 2 points.

The pre-test scores of the four classes were analyzed with SPSS 19.0. Two experimental classes and two control classes were paired out. In this study, the first two classes paired are named Experimental Class 1 and Control Class 1 (pretest p value = 0.306 > 0.05), which have no significant difference in pretest score. The second two classes paired are named Experimental Class 2 and Control Class 2 (pretest p value = 0.634 > 0.05), which have no significant difference in pretest score either. Table-2 and Table-3 are independent samples t-tests of vocabulary pretest of the two pairs respectively.

Table 2
Independent samples t test of pretest of Experimental Class 1 and Control Class 1

	Classes	N	Mean	Std.	Standard error of mean
Pretest results	Experimental Class 1	41	33.71	14.287	2.231
	Control Class 1	34	30.62	11.076	1.899

	Levene test of variance equation		T test of mean equation					95% confidence interval for difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Standard error of mean	lower-bound	upper-bound
Pre-test	3.222	.077	1.030	73	.306	3.090	3.000	-2.890	9.069
Score			1.054	72.702	.295	3.090	2.930	-2.751	8.930

Table 3
Independent samples t test of pretest of Experimental Class 2 and Control Class 2

	Classes	N	Mean	Std.	Standard error of mean
Pretest results	Experimental Class 2	43	37.91	13.331	2.033
	Control Class 2	35	36.46	13.347	2.256

	Levene test of variance equation		T test of mean equation					95% confidence interval for difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Standard error of mean	lower-bound	upper-bound
Pre-test score	.215	.644	.477	76	.634	1.450	3.036	-4.598	7.497
			.477	72.784	.634	1.450	3.037	-4.603	7.503

Continued

2.3.2 Application of Online Vocabulary Testing Mode and Paper-Based Vocabulary Testing Mode

The experimental group and the control group were taught for 12 weeks. The teaching materials, the teaching content and schedule and the teaching mode as well for the two groups are all the same.

At the end of each teaching unit, the experimental group and the control group were given a vocabulary test. The online testing mode was implemented for the experimental group in which the subjects apply "Tsinghua Education Online" online education integrated platform or V8 Youmu mobile phone terminal to participate in the test. 10 questions (random) are tested each time with the limited time being 10 minutes. The subjects can participate in the test for unlimited times with the test being open to the end of the semester. At the end of the semester, the average score of each test is taken as the vocabulary assessment score of the unit. For the control group, the paper-based testing mode is implemented, i.e. the test is carried out in the classroom with 20 questions (fixed) each time for 20 minutes, and the test is implemented only once. The paper score of the test is taken as the vocabulary assessment score of the unit.

2.3.3 Vocabulary Posttest and Questionnaire Survey

After 12 weeks of experimental teaching, the posttest of vocabulary was carried out. The target vocabulary, question type, question size, score and scoring criteria of the posttest were the same as those of the pretest. At the same time, a questionnaire survey of vocabulary learning was conducted among the subjects to investigate the characteristics of vocabulary learning and their evaluation of testing mode.

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3. RESULTS AND ANALYSIS

3.1 Vocabulary Posttest Results

The post-test scores of the experimental group and the control group were analyzed with SPSS 19.0. The results show that there is a significant difference in the post-test scores between Experimental Class 1 and Control Class 1 (t = 7.467, P = 0.000 < 0.05) and between Experimental Class 2 and Control Class 2 (t = 7.275, P = 0.000 < 0.05) (see Table-4 and Table-5 for details).

Table 4
Independent samples t test of posttest of Experimental Class 1 and Control Class 1

	Classes	N	Mean	Std.	Standard error of mean
Post-test score	Experimental Class 1	41	64.73	20.946	3.271
	Control Class 1	34	34.12	14.413	2.472

	Levene test of variance equation		T test of mean equation					95% confidence interval for difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Standard error of mean	lower-bound	upper-bound
Post-test score	9.582	.003	7.218	73	.000	30.614	4.241	22.161	39.067
			7.467	70.757	.000	30.614	4.100	22.438	38.790

Table 5
Independent samples t test of posttest of Experimental Class 2 and Control Class 2

	Classes	N	Mean	Std.	Standard error of mean
Post-test score	Experimental Class 2	43	58.51	22.173	3.381
	Control Class 2	35	39.83	11.994	2.027

	Levene test of variance equation		T test of mean equation					95% confidence interval for difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Standard error of mean	lower-bound	upper-bound
Post-test score	11.142	.001	6.873	76	.000	28.683	4.173	20.371	36.995
			7.275	66.938	.000	28.683	3.943	20.814	36.552

3.2 Results of the Survey of Vocabulary Learning

The results of the questionnaire survey show that there is no significant difference between the experimental group and the control group in terms of the length of vocabulary review after class. The major of the subjects tend to review new words about one hour after class each week.

In terms of the function of the vocabulary test, both the two groups think that the tests stimulate their motivation to learn English vocabulary to some extent.

Compared with the subjects who took paper-based vocabulary tests, the subjects who took online vocabulary tests approve the testing mode they are given more, with 91% of them thinking that the online vocabulary test mode has a positive effect on English vocabulary learning, including improving the interest of vocabulary learning and enhancing vocabulary learning and retention.

3.3 Result Analysis

In the pretest, there is no significant difference between the experimental group and the control group: the pretest scores of Experimental Class 1 and Control Class 1 are 33.71 and 30.62 respectively; the pretest scores of Experimental Class 2 and Control Class 2 are 37.91 and 36.46 respectively. In the posttest, the average scores of the experimental group and the control group are significantly different: the average scores of the posttest of Experimental Class 1 and Control Class 1 are 64.73 and 34.12 respectively; the average scores of the posttest of Experimental Class 2 and Control Class 2 are 58.51 and 39.83 respectively.

The results of vocabulary learning questionnaire survey show that there is no significant difference in the total length of vocabulary learning time spent by students after class, but there is significant difference in the subjects feedback on the effects of testing modes on vocabulary learning between the experimental group and the control group: subjects in the experimental group are more positive about the effect of the online testing mode. They think that the testing mode can arouse their interest in vocabulary learning and can better enhance the memory than the traditional paper-based testing mode.

The research results show that the online vocabulary testing mode designed by the research, including the design of off class self-test, random test questions, average unit test scores and open test time, is conducive to the learners to break through the limitation of time and space, to make rational use of personal off-class time, and to make the target vocabulary become highly frequent words for the learners. Furthermore, such testing mode improves the vocabulary memory and retention.

CONCLUSION

This study explores the effect of online vocabulary testing on college English teaching. The experiment lasts for 12 weeks, during which the online vocabulary testing mode and the traditional paper-based testing mode are designed and applied in teaching. The statistical results of the pre-test scores, post-test scores and vocabulary learning questionnaire survey show that the online vocabulary testing mode is effective in integrating English vocabulary learning and testing, stimulating students' motivation to participate in tests and enhancing vocabulary memory and retention. Additionally, online vocabulary testing can free teachers who undertake the teaching of general courses from the heavy task of marking papers and score statistics, and thus further improve the efficiency of teaching.

In view of the facts that subjects in this study are only from four intact classes, with the online vocabulary testing mode being designed for only one general course and the experimental teaching lasting only for one semester, there is much room for the study to improve its breadth and depth in the future.

REFERENCES

Bai, X., Li, Y. X., & Li, X. M. (2014). The influence of vocabulary module and online examination on college English vocabulary teaching. *Science and Technology Innovation*, (3), 126-127.

He, K. K. (2004). The new development of educational technology theory from the perspective of blending learning (I). *Research on Audio-visual Education*, (3), 3-8.

He, K. K. (2004). The new development of educational technology theory from the perspective of blending learning. *Audio-visual Education in China*, (4), 9-14.

Hou, J. J. (2010). College English teaching practice and research based on blended Learning. *Audio-visual Education in China*, (5), 110-113.

Li, K. D. (2004). Principle and application mode of blended learning. *Research on Audio-visual Education*, (7), 3-8.

Ma, W. L., & Zhang, X. P. (2011). Research and practice of College English blended learning mode. *Audio-visual Teaching of Foreign Language*, (3), 52-59.

Meng, Y. L. (2011). Research on the cultivation of College English writing self-efficacy based on Hybrid Teaching. *Research on Audio-visual Education,* (5), 98-103.

Qi, H., & Fu, Z. Q. (2007). An empirical study of College English blended teaching mode supported by blackboard platform. *Journal of Xi'an Foreign Studies University*, (3), 86-89.

Shen, H. (2016). An empirical study on the application of online testing in college English Teaching. *Journal of Jilin Normal University of Engineering and Technology*, (7), 80-83.

Tian, F. P., & Jiao, D. L. (2005). Practical exploration of mixed mode in colleges and universities under the information environment. *Research on Audio-visual Education*, (4), 65-67.