

# Effectiveness for OBE-oriented College Students' Blended English Learning Community in Smart Environment

Jinyuan Zhang<sup>1</sup>, Qianmei Li<sup>1,\*</sup>, He Huang<sup>1</sup>, Jiading Cui<sup>1</sup>, Heguo He<sup>1</sup>, Shiqing Li<sup>1</sup>

<sup>1</sup>Guilin University of Electronic Technology, Guilin, 541004, China

\*Corresponding author

**Abstract:** In view of the low efficiency of college students' autonomous independent learning, this research was aimed at building the OBE-oriented college students' blended English learning community in a smart environment. Its effectiveness is tested by a 12-week experiment of joint learning for CET-4. The results showed that (1) in the process of joint learning for CET-4, the average score for each part and the total average score of the students in the experimental group have been continuously improved, (2) compared with the initial mock CET-4, in the final CET-4, the average score for listening, the average score for reading, the average score for writing and translation, the total average score and the pass rate of the students in the experimental group have been more significantly improved than those in the control group.

**Keywords:** Smart Environment, OBE-Oriented, Blended English Learning Community, CET-4, Effectiveness

## 1. Introduction

In the 1990s, the American scholar Boyer first put forward the concept of “learning community” [1]. In the 21st century, other scholars such as Zhong [2], Xue [3], Sato [4] and Snyder [5] have also successively explained the definition of “learning community”. Simultaneously, with the rapid development of Internet technology, the concept of “online learning community” began to appear. Scholars such as Snyder [5], Guo [6], Zhong [7], Calhoun & Green [8], Gao [9], Liu & Fu [10], Chen [11], Xie [12], Zou [13], Qi & Wang [14] and Zhao [15] tried to define its concept and explore its construction strategy and application mode.

Based on the definitions of the scholars, this research defined “learning community” as a group composed of people who have common learning goals, abide by common learning norms, and learn jointly in an orderly and efficient way. On this basis, it further defined “online learning community” as a group composed of people who learn jointly in a network environment. Simultaneously, based on summarizing the previous research results, this research attempted to build the OBE-oriented college students' blended English learning community in a smart environment and put it into practice, in order to help the inefficient individual English learners in universities unite and become a member of an efficient OBE-oriented English learning community making full use of the smart environment and starting blended joint learning in a systematic and orderly way, and finally successfully achieving the expected English learning objectives and producing fruitful English learning outcomes. Based on this concept, this research conducted a 12-week experiment of joint learning for CET-4, trying to test whether joint learning under the framework of the OBE-oriented college students' blended English learning community in a smart environment could significantly improve college students' English learning effectiveness.

## 2. Design

### 2.1. Questions

This research mainly answered the following two questions: (1) In the process of joint learning for CET-4, have the average score for each part and the total average score of the students in the experimental group been continuously improved? (2) Compared with the initial mock CET-4, in the final CET-4, have

the average score for listening, the average score for reading, the average score for writing and translation, the total average score and the pass rate of the students in the experimental group been more significantly improved than those in the control group?

## **2.2. Subjects**

The subjects of this research were 60 undergraduate students in Guilin University of Electronic Technology. These students were preparing to take CET-4 in December 2020. Among them, 30 students were members of the experimental group and 30 students were members of the control group. The members of the two groups were both from up to eight colleges, with a gender ratio of one to one, and the grade ranging from freshman to junior. During the 12-week, the students in the experimental group was united into a learning community, with the production goal of successfully passing CET-4 as well as getting high score for each part and high total score, starting blended joint learning in a systematic and orderly way based on the smart environment, while the students in the control group started their autonomous independent learning.

## **2.3. Process**

This research was implemented by a innovation training project team in Guilin University of Electronic Technology, and the systematic steps were taken to conduct the joint learning experiment of the OBE-oriented college students' blended joint English learning for CET-4 in a smart environment.

### **2.3.1. Pretest**

In order to fully test the real English level of all the subjects, the project team organized a pretest in the form of mock CET-4, selecting the previous CET-4 questions as the test materials and inviting both the students in the experimental group and the control group to participate in the pretest. The test was supervised by the student members of the project team and scored under the guidance of the instructor. The test score was calculated into five items: the average score for listening, the average score for reading, the average score for writing and translation, the total average score and the pass rate. The data obtained through the pretest helped the project team accurately know the English level of all the subjects, laying a solid foundation for the final data comparison as well as providing a necessary basis for organizing the students in the experimental group to conduct the joint learning activities.

### **2.3.2. Joint learning**

According to the test focus, the test contents and the question characteristics of CET-4 as well as the specific test performance of the students in the experimental group, the project team made a practice plan for the OBE-oriented college students' blended joint English learning for CET-4 in a smart environment and followed the plan organizing the students in the community (i.e. the students in the experimental group) to start joint learning in an orderly way, including daily online practice, 4 offline mock tests, daily online discussion, communication and learning, and regular or any-time offline instruction.

Online exercises: The daily online exercises were all about objective questions, namely listening and reading. The student members of the project team regularly posted exercise files in the QQ group of joint learning, reminded the students in the experimental group to finish the exercise in time, collected the answers and got the answer data through the questionnaire, and based on the data, found out the questions with high error rate for analysis, and then posted the question answers and simple analysis in the QQ group after the answering time was over. In addition, the questions with high error rate were analyzed in detail. Simultaneously, the project team recorded the score of each student, getting the trend of their performance, and providing some follow-up learning suggestions for the students who didn't make continuous improvement in their performance.

Offline mock test: The 4 mock tests used the combination of the previous CET-4 questions as the test materials, and were conducted following the formal test process under the supervision of the student members of the project team, so as to ensure that the results accurately reflect the level of the students in the experimental group. After the test, all members of the project team were responsible for marking each part of the test paper respectively, and the subjective parts (writing and translation) were scored by the instructor and the student members with higher English proficiency. After marking the paper, the student members sent the score for test and the specific comments on writing and translation to each student in the group, and posted the answers and simple analysis of listening and reading questions, sample essay and reference translation in the QQ group. Also, they analyzed the listening and reading questions with high error rate in detail, and explained the common problems in writing and translation. Simultaneously,

they recorded the performance of each student, getting the trend of their performance, and reminding the students who didn't make continuous improvement in their performance and who didn't pass the test, and providing them with follow-up learning suggestions.

Online discussion, communication and learning: First, the students in the experimental group were encouraged to raise questions daily in the QQ group, and the students in the group were mobilized to actively discuss them, and finally the questions were answered by the instructor or the student members of the project team. Second, the students in the experimental group were organized to exchange their learning experience in the QQ group, and the comments were made and the suggestions were given on their learning methods by the instructor or the student members of the project team. Third, some students who had more learning difficulties than others or repeatedly didn't understand some certain language points were individually instructed online by the student members of the project team. Fourth, the key and difficult points as well as the preparation methods and question-solving skill for CET-4 were compiled and published in the project-owned WeChat official account "GUET English Learning Community", for the students in the group to learn. Fifth, various learning resources for CET-4 in on-campus and off-campus smart environment were connected for the students in the group to learn.

Offline instruction: Offline instruction included group instruction and individual instruction. Group instruction was to give regular face-to-face centralized explanation to all the students in the experimental group on the knowledge missed by most of them or the questions with high error rate among them, and guide them to finish the targeted or consolidated exercises on site by dividing them into small groups. Individual instruction was to give any-time face-to-face individual explanation to some students who had more learning difficulties than others or repeatedly didn't understand some certain language points, and guide them to finish the targeted or consolidated exercises on site one-on-one. During both the group instruction and individual instruction, the explanation and guidance of question-solving skills for CET-4 were integrated into them.

In the process of organizing joint learning, the project team actively explores effective management strategies for learning practice to help the students in the experimental group improve their learning effectiveness, including the implementation of hierarchical and grouping management system, instant statistics and evaluation of students' exercise and test results, in-time formulation of performance improvement strategies, any-time adjustment of learning tasks, progress and difficulty, adoption of archive-based personal performance recording mode.

### 3. Results and Discussion

#### 3.1. Analysis of Results of Pretest (Mock CET-4) for Experimental group and Control group

Before the experiment, the project team organized both the students in the experimental group and the control group to take a mock CET-4 (i.e. pretest), calculating and analyzing five sets of data for the two groups: the average score for listening, the average score for reading, the average score for writing and translation, the total average score and the pass rate (Table 1).

Table 1: Comparison of pretest results between experimental group and control group

Group	Average Score for listening	Average Score for reading	Average Score for writing and translation	Total average score	Pass rate
Experimental group	131.5	149.6	140.3	457.4	73%
Control group	132	143.4	142.2	462.3	70%

As shown in Table 1, before the joint learning experiment, there was no significant difference between the experimental group and the control group in the average score for listening, the average score for reading, the average score for writing and translation, the total average score and the passing rate, indicating that the overall English level of the two groups was basically the same.

#### 3.2. Analysis of Results of Online Exercise for Experimental Group

During the experiment, the project team regularly assigned exercise (listening and reading) tasks to the students in the experimental group in the QQ group, recorded their scores, and selected the data of the average score for eight of the exercises for analysis (Fig. 1).

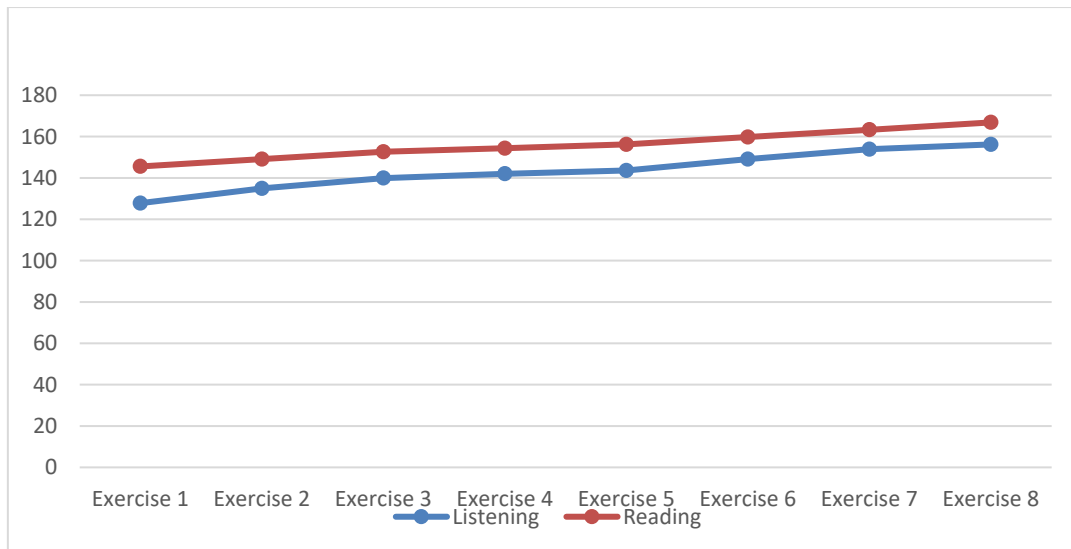


Figure 1: Broken line chart for the change of online exercise score of experimental group

As shown in Figure 1, the average score of the students in the experimental group for listening and reading in daily online exercise was increasing, and the improvement of listening was slightly greater than that of reading, indicating that the daily online exercise, a kind of joint learning activity, has significantly improved the listening and reading skills of the students in the experimental group.

### 3.3. Analysis of Results of Offline Mock Test for Experimental Group

During the experiment, the project team organized the students in the experimental group to take four offline mock tests, calculating and analyzing three sets of data: the average score for listening and reading, the average score for writing and translation, the total average score (Fig. 2).

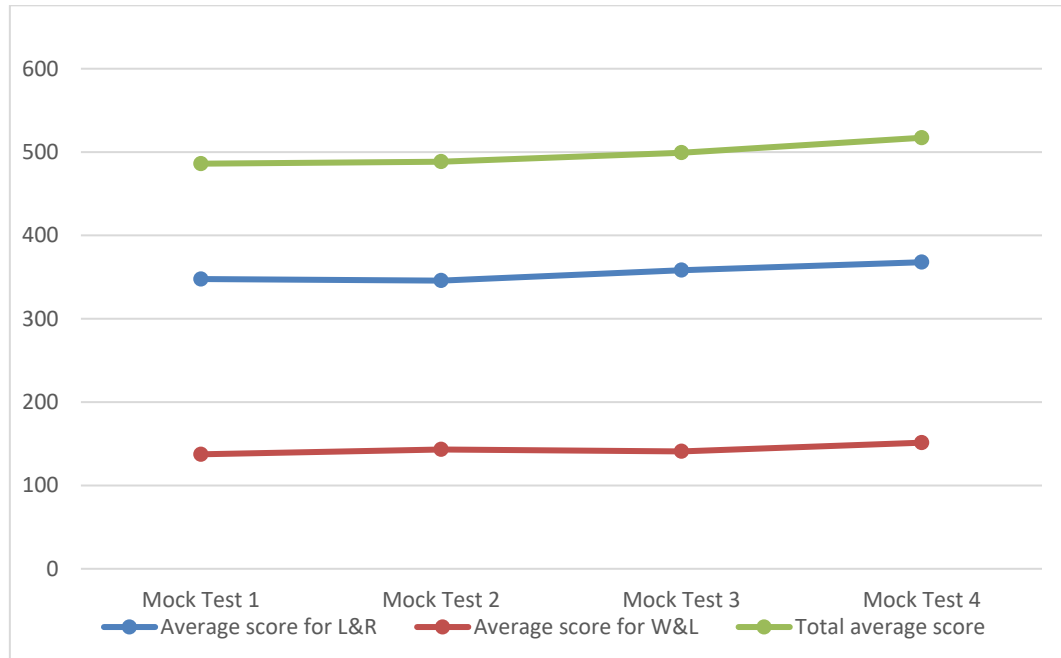


Figure 2: Broken line chart for the change of offline mock test score of experimental group

As shown in Figure 2, although in the second and third mock tests, due to the difficulty of the questions, the average score for listening and reading in the second mock test was slightly lower than that in the first mock test, and the average score for writing and translation in the third mock test was slightly lower than that in the second mock test, there was a general uptrend in the average score for listening and reading, the average score for writing and translation and the total average score of the students in the experimental group in the four offline mock tests, indicating that the daily joint learning

activities have significantly improved the listening and reading skills as well as writing and translation skills of the students in the experimental group.

### 3.4. Analysis of Results of CET-4 for Experimental Group and Control Group

After the result of CET-4 (i.e. posttest) was released, the project team summarized the test results of both the students in the experimental group and the control group, calculating and analyzing five sets of data for the two groups: the average score for listening, the average score for reading, the average score for writing and translation, the total average score and the pass rate (Table 2).

Table 2: Comparison of posttest results between experimental group and control group

Group	Average Score for listening	Average Score for reading	Average Score for writing and translation	Total average score	Pass rate
Experimental group	164.5	172.9	155.7	489.5	83%
Control group	151.8	160.1	141.6	470.1	73%

As shown in Table 2, in the final CET-4, the average score for listening, the average score for reading, the average score for writing and translation, the total average score and the pass rate of the students in the experimental group were higher than those in the control group, and compared with the initial mock CET-4, the average score for listening, the average score for reading, the average score for writing and translation, the total average score and the pass rate of the students in the experimental group have been more significantly improved than those in the control group. In contrast, the students in the control group not only did not improve significantly in the average score for listening, the average score for reading, the total average score and the pass rate, but also decreased in the average score for writing and translation.

## 4. Conclusion

This research has reported a 12-week experiment of joint learning for CET-4 for the purpose of testing whether the OBE-oriented college students' blended English learning community in a smart environment could significantly help the inefficient individual English learners in universities improve their English learning effectiveness through joint learning. And based on the results and discussion, the conclusions could be drawn that compared with the autonomous independent learning, the orderly joint learning had a more significant effect on the improvement of students' CET-4 performance.

However, there are still two questions that need further research. First, how to unite the higher-level students and lower-level students in the learning community to build a harmonious and symbiotic relationship between them, so as to realize the win-win effect of mutual help and benefit? Second, how to make the most of the smart environment to build a more orderly and efficient management mechanism for blended joint learning to better supervise and control the learning activities of the students in the learning community, thus enabling the production of the expected learning outcome?

## Acknowledgment

This work is supported by the Regional Innovation and Entrepreneurship Training Project for College and University students (Grant No. 202010595190), the Teaching Reform Project of Guangxi Higher Education (Grant No. 2020JGZ117, 2021JGA178, 2021JGA188), the Teaching Reform Project of Guilin University of Electr

onic Technology (Grant No. JGB202015, JGB202116), and the Innovation Project of Guang Xi Graduate Education(Grant No. JGY2022120).

## References

- [1] Boyer E. L. *The Basic School: A Community for Learning*[M]. Princeton, NJ: Camegie Foundation for the Advancement of Teaching, 1995.
- [2] Zhong Zhixian. *Understanding of Knowledge Construction, Learning Community and Concept of Interaction* [J]. *e-Education Research*, 2005(11): 20-24+29.
- [3] Xue Huanyu. *A Preliminary Discussion on the Theory and Practice of Learning Communities*[J].

- Journal of China University of Geosciences (Social Sciences Edition)*, 2007(01): 1-10.
- [4] Sato Manabu. *The Challenge of School: Building a Learning Community*[M]. Translated by Zhong Qiquan. Shanghai: East China Normal University Press, 2008.
- [5] Snyder, M. M. *Instructional-Design Theory to Guide the Creation of Online Learning Communities for Adults*[J]. *TechTrends*, 2009, 53(1), 47-55.
- [6] Guo Yongzhi. *Research on E-learning Model Based on Theory of Learning Community*[J]. *China Educational Technology*, 2011(08): 55-59.
- [7] Zhong Zhirong. *Construction and Application of E-learning Community Based on QQ Group*[J]. *China Educational Technology*, 2011(08): 92-95.
- [8] Calhoun D. W. & Green L S. *Utilizing Online Learning Communities in Student Affairs*[J]. *New Directions for Student Services*, 2015(149): 55-66.
- [9] Gao Xiaojing. *Research on the Construction of College Students' Mobile Learning Community Based on WeChat Platform* [J]. *China Information Technology Education*, 2017(Z2): 119-121.
- [10] Liu Na & Fu Yan. *College Students' E-learning Community: Connotation, Function and Construction Strategy* [J]. *Research on Transmission Competence*, 2017, 1(08): 165-166.
- [11] Chen Xia. *The Exploration of Establishing Model of College English Learning Community Based on Mobile Internet Environment*[J]. *Journal of Heilongjiang College of Education*, 2018, 37(02): 124-126.
- [12] Xie Quanfeng. *Research On the Construction of Blended Learning Community Based On Cyber Learning Space*[D]. Hunan Normal University, 2018.
- [13] Zou Ping. *Construction and Effectiveness of College Students' Online Learning Community for Deep Learning*[D]. Nanchang University, 2019.
- [14] Qi Mingjun & Wang Xuemei. *Construction and Implementation of Online Learning Community for College English Reading Class—A Case Study of Follow-up College English Course*[J]. *Journal of Beijing International Studies University*, 2019, 41 (04): 116-128.
- [15] Zhao Wei. *Research on the Strategy of Intelligence Tool Driving College Students' Network Learning Community Construction*[J]. *Journal of Huaihai Institute of Technology (Humanities & Social Sciences Edition)*, 2019, 17(11): 129-132.