



## The Promotion of Students' International Communication Skills Growth through the Construction of Higher Vocational English Culture Curriculum System

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**SUMMARY:** *Under the background of vocational education reform, English teaching, as a key link in the articulation of high school through courses, has a direct impact on the quality of teaching and the coherence of talent cultivation. For this reason, based on the establishment of the “three-module nine-type” higher vocational English culture curriculum system, the article introduces the SPOC teaching platform to design a higher vocational English flipped classroom teaching model. Students of a vocational school in S city were selected as the research objects, and teaching experiments under different teaching modes were designed to investigate the changes of students' English performance and learning ability. The experiment shows that there is a significant difference between the English achievement of the post-test experimental group and the control group ( $t=6.395$ ,  $Sig=0.000<0.01$ ), and the average relative vocabulary acquisition rate of the experimental group is 74.56%, which is different from that of the control group ( $t=9.512$ ,  $P=0.000<0.01$ ). And the students' international communication ability increased from 2.015 to 4.634, and its increase reached 129.98%. Therefore, optimizing the construction path of senior English cultural curriculum system and promoting the reform of English teaching mode is an important way to improve students' English expression and lay a solid foundation for promoting students' international communication ability.*

**KEYWORDS:** *SPOC teaching; flipped classroom; higher vocational English; international communication ability*

### 1 Introduction

As China's foreign exchanges and cooperation are increasingly strengthened, the cultivation of composite talents with international vision and profound cultural background has become a general trend [1]. In the past, English education emphasized on increasing and consolidating the accumulation of students' basic knowledge, but now it is no longer able to meet the needs of cultivating English talents in the new era, and it needs to emphasize on cultivating diversified talents with multiple abilities, excellent quality and strong English application ability [2, 3]. Therefore, “intercultural communication” is a new direction of talent cultivation. Intercultural communication refers to the students' ability to understand the cultural elements contained in each other's words in the process of English communication, and to utilize certain language skills to reach an effective dialogue, which is an important part of English language application skills [4, 5]. Cultivating intercultural communication skills helps to improve students' global perspective and intercultural understanding. In English education, by exposing students to international news, film and television dramas, TV programs and other contents, and analyzing

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the multicultural background behind them, students can cultivate their sensitivity to cultural differences and enhance cross-cultural understanding and respect [6, 7].

At present, the development of intercultural communication education in English education in colleges and universities is relatively backward from the concept to the teaching materials, the evaluation mechanism is not sound, and the professionalism of the practice environment is generally poor. While intercultural communication emphasizes the cultivation of students' multidimensional language application ability, the innovation of educational modules, educational methods, teachers' awareness and evaluation mechanism of English teaching in colleges and universities based on intercultural communication can enrich the content system, improve the quality of parenting and the quality of practical training [8-10]. Many schools have already begun to take intercultural communication as a prerequisite for the innovation of English education, but exactly how to reform the existing English education system needs to be analyzed in terms of the characteristics and structure of intercultural communication as well as the current situation of English education [11, 12].

In order to improve the quality of talent cultivation in higher vocational English culture courses, the article designs a curriculum system and constructs a flipped classroom teaching mode for higher vocational English culture courses in combination with the SPOC teaching mode, and verifies its effectiveness through teaching experiments. The optimization of the senior vocational English course system can promote the quality of international talent cultivation and better help students improve their international communication ability.

## **2 English Curriculum System and Teaching Mode**

With the rapid development of information technology and the increasing demand for international communication, higher vocational English teachers need to keep abreast of the times, adopt new and diversified teaching methods, integrate the concept of information education into English teaching, and create a multi-dimensional and innovative teaching environment. Relying on information-based teaching to optimize the English culture curriculum system in higher vocational English, and then promote students' international communication ability and the quality of English talent cultivation.

### **2.1 English Culture Curriculum System in Higher Education**

According to the teaching guide of English culture curriculum for higher vocational education, English courses can be roughly divided into three categories: general English, special-purpose English and cross-cultural communication English courses, and the proportion of each type of course is not fixed, but determined by each institution according to the actual needs. Based on this, this paper designs a “three-module, nine-type” higher vocational English culture course system as shown in Fig. 1 from the “three-three system” talent cultivation goal and the teaching goal of English courses.

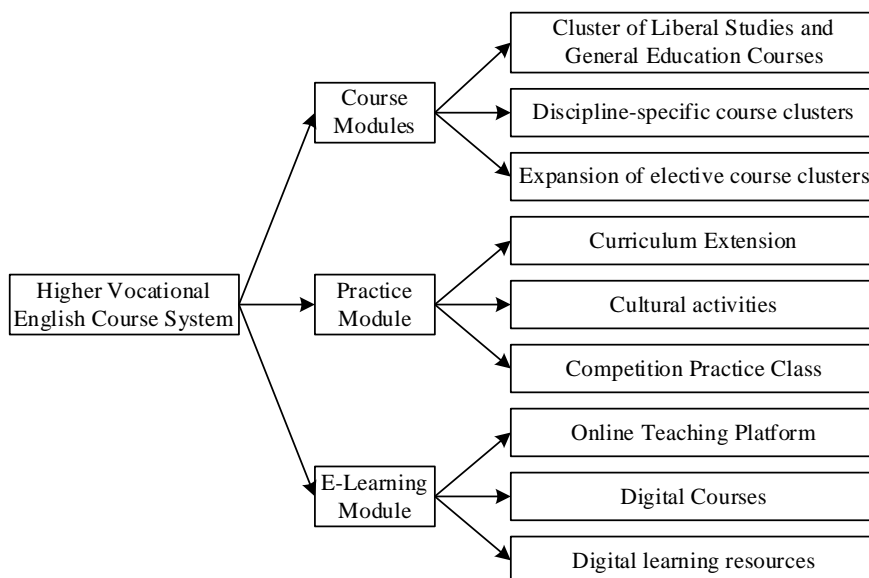


Figure 1: Higher vocational English culture course system

The “three modules” include curriculum module, practice module and network teaching module. The curriculum module is the core content of the English culture curriculum system for higher vocational education, and the design of the module follows the principle of “taking the general English course as the basis, supplemented by cross-cultural communication courses, and expanded to academic English courses”. Under the module, three major groups of courses are set up, namely, general education courses, subject-specific courses and extended elective courses. The practical module and the online teaching module are the expansion system, the former includes the three contents of curriculum extension, cultural activities and competition practice, and the latter includes the online teaching platform, digital courses and digital learning resources.

## 2.2 Flipped Teaching Mode of English in Higher Education

### 2.2.1 SPOC teaching model

SPOC is a small private online class, “small” refers to the small capacity of the classroom students, the general number of people is more than ten people below one hundred people, “private” refers to the course has a specific access conditions, only to meet the application conditions of the students open, specifically refers to the students elective Private” means that the course has specific access conditions and is only open to students who meet the application conditions, specifically, a blended learning mode in which students take a course with restricted conditions and complete the training step by step in accordance with the process. In addition to both online teaching mode is not limited by time and space, relatively low cost of teaching, learning efficiency and many other advantages, SPOC also integrates the advantages of traditional face-to-face teaching, combining online theoretical explanations and offline practical operations, guiding students to explore on their own, so that students can get a richer learning experience and optimize the teaching effect.

The teaching characteristics of SPOC include focusing on the teaching object, being targeted, putting forward specific requirements for students in terms of access conditions, precise control and strict screening, so as to understand the students' demands and formulate more targeted teaching content for students. In addition, teachers can also quickly know the

basic situation of each student through the set access conditions, and timely adjustment of teaching strategies. The mode can be freely combined and flexible, teachers can flexibly switch the teaching mode in the teaching process, while choosing the SPOC teaching mode, it can be combined with the traditional face-to-face teaching, MOOC teaching, flipped classroom and other teaching modes, and reasonably utilize all the resources available to improve the quality of teaching. SPOC adopts the task-driven teaching method, so that the teacher's role is changed, and the students are changed from passive recipients of information, to the students. Students change from passive acceptance of information to active learning and exploration, thus establishing a set of fair and scientific, multi-dimensional, diversified and relatively perfect teaching evaluation system to motivate students to make progress.

### 2.2.2 Flipped teaching model design

On the basis of the existing higher vocational English culture curriculum system, in order to promote students' internationalized communication ability, the higher vocational English culture curriculum should be based on the purpose of perfecting classroom teaching and promoting effective learning, integrating information technology into classroom teaching and making it an organic part of classroom teaching. Only in this way can information technology play a powerful and unique supporting role in innovating classroom teaching and improving the quality of classroom teaching. As a result, the article establishes a flipped classroom teaching model for higher vocational English culture course based on SPOC as shown in Figure 2, in which the teaching model integrates online independent learning, online collaborative learning, offline community practice and mobile micro-learning, which creates the conditions and environments for the effective learning and deep learning of higher vocational English culture course.

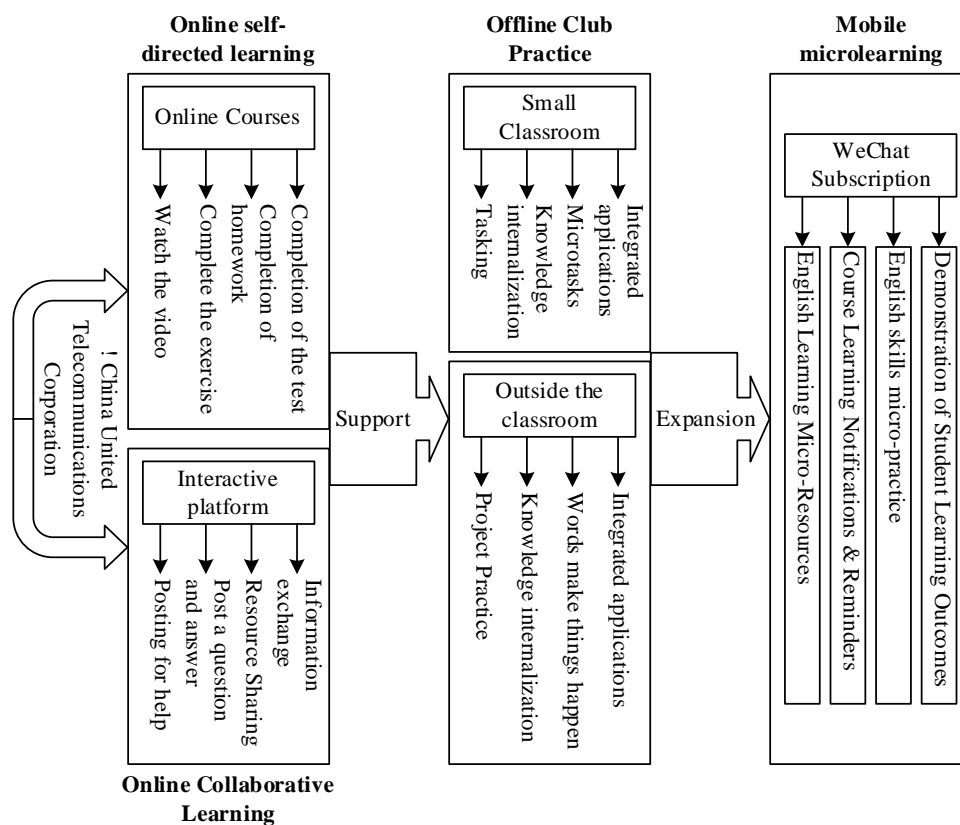


Figure 2: English culture course flipped classroom teaching mode

Online independent learning and online collaborative learning are the components of students' pre-course acquisition of language knowledge, which are the prerequisites for supporting offline community practice. Offline community practice includes both small classroom and out-of-classroom components, providing students with the time and space to internalize their language knowledge and improve their language skills. Mobile micro-learning utilizes the WeChat subscription number to regularly push to students English learning micro-resources, course learning notifications and reminders, English skills micro-practices, and students' learning achievements that are highly relevant to online independent learning, online collaborative learning, and offline community practice.

### **3 Teaching Experiment Design for Higher Vocational English**

As one of the important disciplines in the stage of higher vocational education, English education and teaching methods in higher vocational colleges should keep abreast of the times, realize all-round innovative teaching concepts of discipline teaching by creating novel and diversified learning modes and integrating diversified informationized education modes, so as to promote the international communication ability of higher vocational students. Based on this, this chapter designs a teaching experiment based on the flipped classroom teaching mode of higher vocational English language and culture course constructed by SPOC, and verifies the teaching effectiveness under this teaching mode.

#### **3.1 Research objectives and research tools**

##### **3.1.1 Objective of the study**

The subjects in the preliminary stage of this study about the teaching effect of the English culture course in higher vocational education are the second-year undergraduate students majoring in English in a vocational college in S city, who took the basic English culture course in the first year. Based on the results of the first round of questionnaire survey and the platform data, the study designed the teaching interaction strategy for the learning of the Basic English course, applied it to the new round of SPOC learning, and verified the effectiveness of the SPOC flipped classroom teaching model through experimental research.

The subjects of this study are two natural classes of the same major as the experimental class and control class respectively, and the learners of the two classes are identical to the learners of the first round in terms of major setting, teaching objectives, teaching content, course assessment, and they are taught by the same teacher with rich teaching experience. Class A (30 students) was used as an experimental class to implement the SPOC flipped classroom teaching model of this study, and Class B (30 students) was used as a control class with no intervention.

##### **3.1.2 Selection of research tools**

This study mainly used tests, questionnaires, interviews, and classroom observations to collect data. The test is divided into a student level test at the beginning of the teaching experiment, and a final exam at the end of the teaching experiment, with the same type of questions as the Grade 4 exam, and a full score of 100 points. In order to ensure the reliability and validity and avoid the interference of human factors, the tests were corrected by 10 college English teachers in a flowing manner, and the collected data were processed and analyzed by using SPSS software to understand the impact of the SPOC-based flipped classroom teaching mode on the performance of the higher vocational English courses as a way to promote students' international communication skills. The questionnaires used were divided into three categories,

namely, SPOC-based flipped classroom college English independent learning ability, international communication ability, and learning effect. Thirty questionnaires were distributed to each of the two classes, and 60 valid questionnaires were returned. All questions were on a five-point Likert scale, with options A, B, C, D, and E scored 1, 2, 3, 4, and 5 from low to high, respectively. The scale was divided into 5 levels from “5 = significant improvement” to “1 = no improvement at all”. The higher the mean score of the assessment scale, the more significant the progress of the students, and vice versa, the less significant the progress of the students.

The reliability and validity of the questionnaire were tested to be greater than 0.9, thus having good reliability and validity. In order to confirm the results of the questionnaire, 15 students in the experimental class were additionally selected for semi-structured interviews, which were audio-recorded, and the relevant data were analyzed in order to gain an in-depth understanding of the effectiveness of the SPOC-based flipped classroom teaching model of higher vocational English language and culture in improving students' English performance and international communication skills.

According to previous studies on the developmental characteristics of vocabulary richness in college students' English writing, we examined the changing characteristics of vocabulary richness in students' writing from four dimensions: vocabulary complexity, vocabulary diversity, vocabulary density, and average word length, and counted the relevant data using WordSmith, Range, AntConc, and PosTagger software.

In this study, PosTagger, an auto-attachment software, was used to automatically annotate the lexical properties of all the words in the processed compositions, Antconc was used to calculate the number of real words in the compositions, WordSmith software to analyze the word length, and Range vocabulary analysis software to analyze the vocabulary complexity. The class-token shape-token ratio (TTR) is the most common method traditionally used to assess lexical diversity, i.e., dividing the total number of different lexical items (class-tokens) in a text by the total number of all lexical items (shape-tokens) in the text. However, this method has been shown to be affected by text size. In this study, lexical diversity was analyzed using the Uber index formula, i.e:

$$Uber\ index = U = \frac{(\log\ tokens)^2}{\log\ tokens - \log\ types} \quad (1)$$

Lexical density is another important parameter of lexical richness that can be used to assess the development of discourse competence. Lexical density is calculated by the ratio of the number of real words in a text to the total number of words appearing in the text, which is calculated by the following formula:

$$Lexical\ Density = \frac{Number\ of\ lexical\ items}{Total\ number\ of\ clauses} * 100\% \quad (2)$$

## 3.2 Flow design of teaching experiments

### 3.2.1 Course design ideas

Based on the educational concept of “student-centered and result-oriented” and Bloom's theory of classification of educational goals, and relying on the SuperStar platform and the school's smart classroom environment, we have implemented the SPOC flipped classroom teaching reform in which advanced English is taught in a four-step progression of “perceiving-comprehending-analyzing-creating”. The SPOC flipped classroom teaching reform is carried out, forming a closed teaching loop of online digital resources learning before class, results

presentation, context introduction, task implementation and summarization in the physical classroom, and online and offline enhancement after class. The distinctive feature of the course design is that digital technology facilitates the efficient management of the three stages of learning before, during and after class.

Figure 3 shows the idea of teaching design of senior English culture course supported by SPOC. In the pre-course driving learning stage, students use online self-constructed teaching video resources to complete the active learning of “information transfer” of language and writing knowledge of classical texts according to the teacher's instruction, and realize the “perception and comprehension” of knowledge. At the stage of facilitating the structure and content of the lesson, the teacher implements “SPOC flipped classroom” teaching based on students' independent learning, and the students, in small groups, complete the discussion and report on the characteristics of discourse writing, thematic ideas and social issues through the main activities of seminar and debate, student lectures and student evaluations, and practicing instead of lecturing. At the end of the lesson, students will be engaged in group facilitation and individual facilitation, and they will practice extended reading on the theme and model writing in the four genres. During and after the lesson, the higher-order ability goal of “analyzing and creating” is achieved.

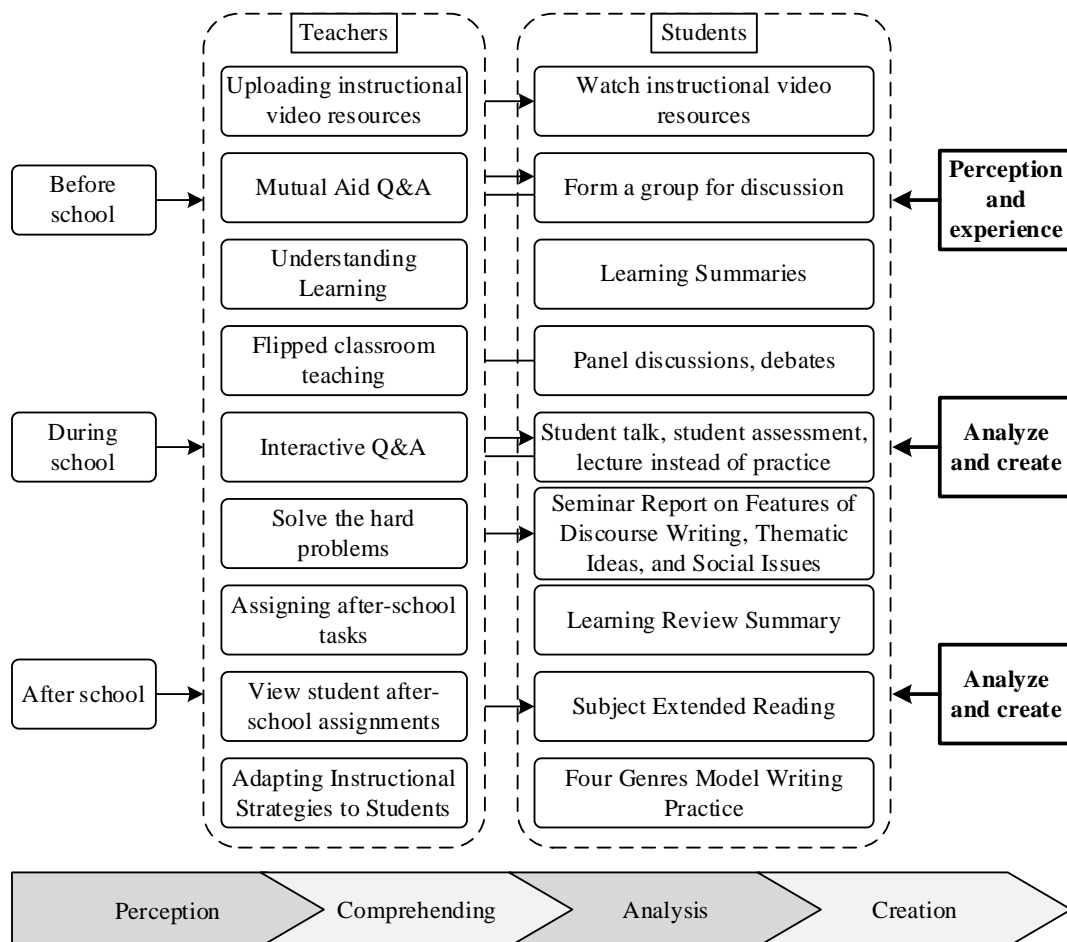


Figure 3: English Course teaching design ideas

### 3.2.2 Flow of teaching experiments

(1) Experimental Group A. The total learning time is 20 weeks and 60 lessons, including 36 lessons of online learning, 23 lessons of communication and discussion, and 1 lesson of

examination. The specific process is shown in Figure 4. The first step is to pre-study before class according to the teacher's assigned textbook. The second step is to enter the computer room, log on to the Internet to register and access the assigned course. Step 3, read the relevant materials and watch the MOOC videos (the content of a section is usually divided into two videos, and the length of one video is about 10 minutes). Step 4, complete the online test (the above three steps are usually completed in one 45-minute session). Step 5, go to the classroom of your class, guided by the teacher, to carry out teacher-student and student-student exchanges, discussions, or doing exercises for 1 class period. Step 6, review after class.

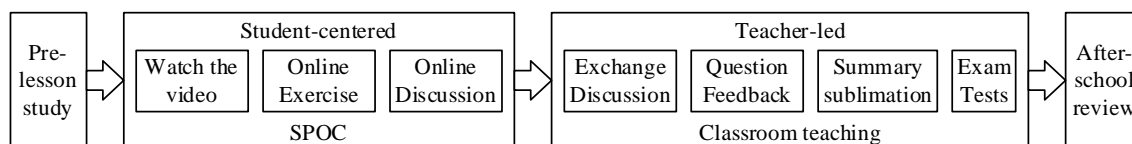


Figure 4: SPOC flipped classroom teaching mode

(2) Control group B. The total study time is 20 weeks and 60 lessons, including 40 lessons taught by the teacher, 19 lessons for Q&A, communication and discussion, and 1 lesson for examination. The specific process is as follows: the first step is to do pre-course pre-study according to the teacher's assigned textbook. In the second step, the teacher teaches according to the same progress of blended learning in Group A, using the teaching mode of traditional face-to-face lectures, and the lecture time is generally controlled at about 45 minutes. In the third step, in the discussion and Q&A class, the teacher answered questions, exchanged or discussed according to the students' mastery. In the fourth step, review after class.

(3) Test. In the last class of the 20th week, groups A and B have finished the English course. At this time, the teacher adopts a unified question and closed-book test to conduct the test, and counts the test scores of the two groups of students separately. And a questionnaire survey was conducted for the students' international communication ability, so as to compare the impact of students' international communication ability under the SPOC flipped classroom teaching mode.

## 4 Teaching Effectiveness of Higher Vocational English Programs

Under the background of the rapid development of education information technology, the environment of teaching and learning in the higher vocational English culture classroom is also changing dramatically in a subtle way, and the traditional teaching form can no longer fully meet the students' English learning needs. How to effectively promote students' English cultural achievement and international communication ability has become the key research direction of the current reform of higher vocational English culture classroom teaching.

### 4.1 Achievement performance in English courses

#### 4.1.1 Achievement in English language courses

English pre-tests and post-tests were given to the two groups of students with the actual teaching content, and the test questions were objective and did not contain subjective factors. The control group of students did the pre and post-tests with the paper version of the test paper, and the experimental group did the pre and post-tests with the Learning Express software. Paired-

sample t-tests were conducted on the collected data, and the test results are shown in Tables 1 and 2.

As can be seen from the paired samples statistical table, the mean values of the English pre-test in the experimental group A and control group B were 62.09 and 61.98, respectively. In the paired samples t-test, there is no significant difference between the samples of the experimental and control A and B groups in the pre-test ( $t=0.271$ ,  $\text{Sig}=0.758>0.05$ ). It can be concluded that there is no significant difference between the performance of the experimental and control groups in the English pre-test. According to the SPSS data analysis, it can be found that the mean values of the English posttest for the experimental group A and control group B were 84.71 and 65.62, respectively. The posttest scores of both the experimental and control groups are higher than the pretest scores, and the difference between the pre and posttest scores of the experimental group is larger, and the posttest scores of the students in the experimental group are significantly higher than those of the students in the control group. In the paired-samples t-test, there was a significant difference between the samples of the posttest experimental group A and control group B ( $t=6.395$ ,  $\text{Sig}=0.000<0.01$ ). The data show that after the implementation of the teaching task, the students in the experimental group have a significantly better mastery of the teaching content and English knowledge than the control group, reflecting that the flipped classroom based on the SPOC teaching mode can improve the teaching effect of the English culture course in higher vocational education. It can be found that the independent learning session in the teaching mode can enable students to quickly familiarize themselves with the topics and accumulate certain knowledge of English vocabulary. In the cooperative puzzle-solving session, offline group discussion and group cooperation are more effective.

*Table 1: Statistics of English test data samples*

-	Class	Means	Standard deviation	Average standard error
Pair1 Before	Class A	62.09	14.712	2.934
	Class B	61.98	11.698	2.051
Pair2 After	Class A	84.71	12.573	3.498
	Class B	65.62	8.649	2.175

*Table 2: English test data paired sample test*

Pairing difference		Means	Standard deviation	Average standard error	
Pair1-Before	A-B	0.11	11.716	2.417	
Pair2-After	A-B	19.09	10.538	2.263	
Pairing difference		95% CI of difference		<i>t</i>	Sig.(2-tailed)
		Lower	Upper		
Pair1-Before	A-B	-3.273	5.273	0.271	0.758
Pair2-After	A-B	2.358	4.796	6.395	0.000

#### 4.1.2 English Vocabulary Achievement

For senior students' international communication skills, vocabulary mastery is crucial to their ability, thus, this paper tests vocabulary breadth and vocabulary depth respectively. The vocabulary breadth test paper covered 240 target words. Each word is given four Chinese meanings, one of which is correct (all are the first meaning in the textbook word list), and the other three are distractors, requiring students to select the correct meaning, with one point for a correct choice, and zero points for a wrong choice, an omission, or multiple choices. The words for the vocabulary depth test were selected from 240 words according to the following principles:

(1) They are general requirement words.

(2) All of them are verbs or adjectives, which have richer lexical meaning, affixes and collocations features, and all of these features are within the scope of vocabulary script instruction in the experimental and control groups.

(3) Words with an error rate of 90% or more in the pre-test.

In the 1st week of the teaching experiment, a pre-test was administered to the experimental and control groups using the same set of test papers, the results of which are shown in Table 3. In the pre-test, although learning of the target words had not yet begun, overall, the experimental and control groups mastered an average of 15.33% and 14.97% of the vocabulary, respectively. This was mainly due to the fact that the target words covered some of the high school vocabulary or were derived from high school vocabulary. There was no significant difference between the vocabulary scores of the experimental and control classes within the same level ( $t=0.943$ ,  $P=0.328>0.05$ ), which means that the vocabulary levels of the subjects in the group before the experiment were basically the same, and could be representative of the two groups of learners with the same vocabulary level.

Table 3: Pre-test score difference test

Test	Class	Means	Accuracy	<i>t</i>	<i>P</i>
Vocabulary breadth test	Class A	36.78	15.33%	0.943	0.328
	Class B	35.92	14.97%		
Vocabulary depth test	Class A	4.51	-	0.315	0.216
	Class B	4.63	-		

After a semester of instruction, the experimental and control groups were tested on vocabulary depth in week 20. In order to reduce the influence of the test effect, the word order and incorrect options of the pre-test questions were randomly disrupted for the post-test in week 19. All of the above tests were completed by the subjects independently and in a time-limited manner in a classroom setting, and their specific results are shown in Table 4. Overall, at the end of the teaching experiment, in terms of vocabulary breadth, the experimental group and the control group mastered an average of 89.89% and 71.89% of vocabulary, with an average relative acquisition rate of 74.56% and 56.92%, respectively, and the experimental group's results were significantly higher than those of the control group ( $t=9.512$ ,  $P=0.000<0.01$ ), and in terms of the development of vocabulary depth of knowledge, the experimental group was also significantly better than the control group ( $t=4.523$ ,  $P=0.027<0.05$ ). It is inferred that the flipped classroom based on the SPOC teaching mode of the senior vocational English culture course has better effects than the traditional teaching classroom in vocabulary teaching, and can lay a reliable vocabulary foundation for enhancing students' international communication skills.

Table 4: Post-test score difference test

Test	Class	Means	Accuracy	<i>t</i>	<i>P</i>
Vocabulary breadth test	Class A	215.74	89.89%	9.512**	0.000
	Class B	172.53	71.89%		
Vocabulary depth test	Class A	23.15	-	4.523*	0.027
	Class B	12.74	-		

Note: \* and \*\* in the table indicate  $P < 0.05$  and  $P < 0.01$ , respectively, and relative acquisition rate is the difference between the correct rate of each posttest and the correct rate of the pretest.

In addition, this paper further adopts the method of “three-level evaluation” to analyze the vocabulary use of English composition of the two groups of students before and after the teaching, so as to illustrate the vocabulary richness of the students' English composition under different teaching modes. Based on the vocabulary richness calculation method given in the previous section, the results of the vocabulary analysis of the English composition of the two groups of students are shown in Table 5.

As can be seen from the table, the number of tokens and types of vocabulary used by the students in the experimental group have been significantly improved. The number of form tokens increased from 9328 to 15882 in the pre-test and the number of class tokens increased from 1384 to 1708 in the pre-test. These data indicate that after participating in a semester of flipped classroom instruction in an English culture course, students' writing output per unit of time was increased. This increase in output directly improved the variety of students' vocabulary output. In addition, except for the decrease in the percentage of Level I vocabulary (i.e., formants decreased from 85.24% to 84.48%, and classants decreased from 59.61% to 56.38%), the percentage of both Level II and Level III vocabulary increased, with the most pronounced increase in Level 2 vocabulary (formants increased from 3.38% to 3.93%, and classants increased from 11.78% to 13.23%). To some extent, these data indicate that the number of advanced vocabulary has increased in the writing of the students in the experimental group, an indication of the students' improved language skills. Relatively speaking, the vocabulary richness of the experimental group increased significantly more than that of the control group. It can be seen that the SPOC-based flipped classroom teaching model of higher vocational English culture courses can accelerate the process of vocabulary transformation, thus improving writing and promoting students' English vocabulary expression level.

*Table 5: Essay Vocabulary Analysis Scale*

Level	Class A				Class B			
	Number of Token		Number of Type		Number of Token		Number of Type	
	Before	After	Before	After	Before	After	Before	After
I	7951	13417	825	963	7863	8046	831	854
II	315	624	163	226	307	368	172	188
III	428	806	157	218	415	434	145	163
Other	634	1035	239	301	624	715	229	252
Total	9328	15882	1384	1708	9209	9563	1377	1457

#### 4.1.3 Changes in lexical density

For the expression of students' international communication ability, in addition to analyzing the changes of their vocabulary's form and class characters, this paper further analyzes the vocabulary density of students' English compositions. In the 20-week teaching experiment, the students in the two groups were asked to write a composition every week, and combined with the vocabulary density calculation method given in the previous section, the vocabulary density change trend of the two groups of students during the period of carrying out the teaching experiment was obtained as shown in Fig. 5.

As can be seen from the figure, both the experimental and control group students made overall progress in vocabulary density, and the experimental group students made a greater improvement in vocabulary density. The vocabulary density values of the students in the experimental and control groups were 4.012 and 4.005 at the 1st composition in the first week, respectively. As time went on, students' English language input increased and their opportunities to speak and write increased, and by the 13th composition, the vocabulary density values of English compositions of students in the experimental group and the control group

reached 6.112 and 5.638, respectively. Despite the fluctuations in the vocabulary density of the first 13 English compositions, the vocabulary density still maintains an overall increasing trend, and the vocabulary density of the students in the experimental group is significantly higher than that of the control group.

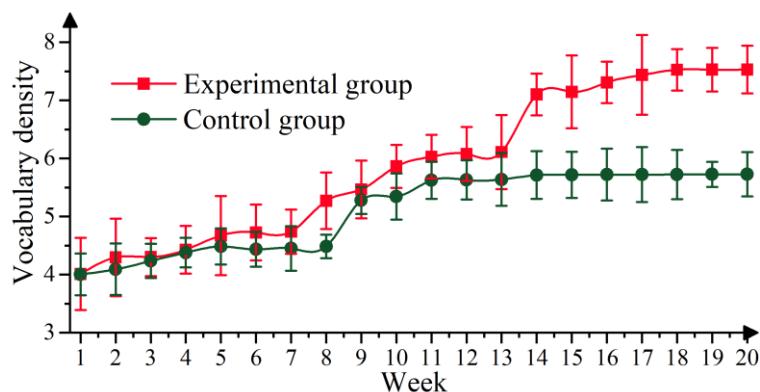


Figure 5: The trend of vocabulary density changes

## 4.2 Effectiveness of the English Teaching Model

### 4.2.1 Analysis of learning outcomes

Flipped classroom teaching is different from traditional teaching, and learners' learning effects and satisfaction with the course under different teaching modes are different. Therefore, this study investigates the dimensions of learning effect mainly from the four main variables (XX1-XX4) of effectiveness expectation, perceived ease of use, perceived usefulness, and intention to use to understand learners' satisfaction with the course. In this paper, we set the options by very satisfied, relatively satisfied, generally satisfied and dissatisfied and get the learning effect satisfaction as shown in Figure 6. From the distribution of data in the figure, it can be found that learners have a high rate of satisfaction with perceived usefulness and intention to use, while there is the existence of dissatisfaction in effectiveness expectations and perceived ease of use.

Students have high expectations for the learning effect of this course, and after completing the course, they think that the usefulness of the content of this course is very high, which shows that the flipped classroom teaching model of the English course is very effective in consolidating the students' foundation. Perceived ease of use, i.e., "perceived ease of use" is defined as the degree to which a user subjectively believes it is easy to use a certain system. It can be seen that students' satisfaction with the SPOC platform is also high, and the number of dissatisfied students is only 3.46%, which is mainly due to the fact that a computer must be used to operate the mutual evaluation settings of the course, which is an inconvenience for students who do not have a computer. In response to the question "How do you learn online open courses?" Among the responses, the majority of students chose the "mobile phone" option, only 2 to 3 students selected the "computer" option, and another one chose the "computer room" option, but the result was 0. In addition, students' intention to use both the course content and the learning platform is relatively high and relatively good.

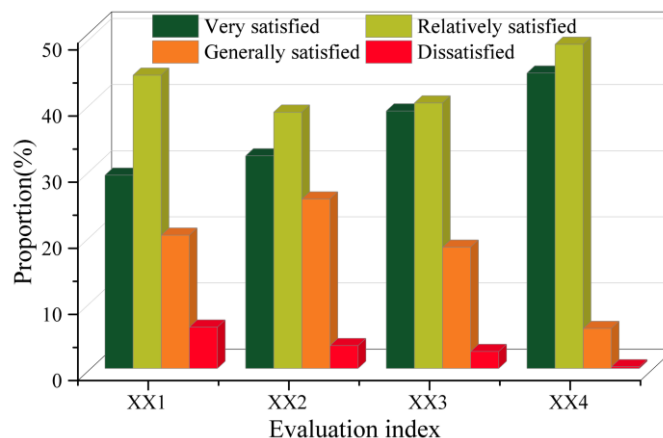


Figure 6: Students' satisfaction with their learning outcomes

### 4.2.2 Changes in learning capacity

For the changes in the learning ability of the students in the experimental group, this paper mainly prepares a questionnaire, which mainly includes international communication ability, problem-solving ability, cooperation and coordination ability, thinking development ability, and learning engagement ability. Before and after the teaching experiment for the experimental group of students' learning ability to test, the data will be collected and independent samples t-test. Table 6 shows the results of the test of differences in students' learning abilities before and after the teaching experiment.

Based on the data in the table, it can be seen that after the implementation of the flipped classroom teaching experiment of the higher vocational English culture course based on the SPOC teaching model, the mean values of all dimensions have risen by different magnitudes, and all of them show a significant difference compared with the preexperiment ( $P < 0.05$ ). Among them, students' international communication ability increased from 2.015 to 4.634, with an overall increase of 129.98%. This shows that relying on the flipped classroom teaching mode can significantly improve students' international communication ability, thus boosting students to better realize international communication. The improvement of problem-solving ability, cooperation and coordination ability, thinking development ability and learning engagement ability has changed students' learning behaviors and habits to a certain extent. Students try to use English thinking to analyze and solve problems, exercise and cultivate their critical thinking and oral expression skills, thus enhancing their self-confidence and self-efficacy in English learning, and laying a reliable foundation for promoting students' international vision and communication level.

Table 6: Test results of learning ability differences

Dimension	Test	Means	STD	<i>t</i>	<i>P</i>
International communication skills	Before	2.015	0.783	6.894	0.000
	After	4.634	0.617		
Problem-solving ability	Before	2.571	1.435	1.315	0.034
	After	4.098	1.299		
Cooperative coordination	Before	2.834	1.421	4.728	0.005
	After	4.156	0.847		
Thinking development ability	Before	2.367	1.1.8	5.176	0.002
	After	3.952	0.692		
Learning input ability	Before	2.479	1.467	2.053	0.016
	After	4.026	0.848		

## 5 Conclusion

Based on the establishment of the senior English culture curriculum system, the article constructs a senior English flipped classroom teaching model in combination with SPOC, and takes the students of a vocational college in S city as the research object to carry out the teaching experiment. The study shows that the mean value of English posttest of the experimental group reaches 84.71 points, which is 22.62 points higher than the pre-test score, and the control group's score improvement is significantly lower than that of the experimental group ( $P < 0.01$ ). Under the flipped classroom teaching mode, the overall improvement of international communication ability of students in the experimental group reached 129.98%. Therefore, the dual optimization of the curriculum system and teaching mode helps to improve students' English scores and vocabulary richness, which makes students more confident and comfortable in telling Chinese cultural stories in international communication.

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