

A Practical Study on the Construction of College English Digital Resource Bank in the Era of Artificial Intelligence

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Abstract: In the era of artificial intelligence, online learning is the trend in modern times. How to build high-quality college English digital resources to meet the needs of students has become the key. In order to solve this problem in depth, this paper carried out a practical study. First of all, this paper investigates the status quo of the construction and use of college English Digital Resource Bank in 5 higher vocational colleges, finds out the problems and puts forward the corresponding countermeasures. Then, in practice, through a questionnaire survey, the author analyzed statistics to figure out the current needs of vocational college students for College English Digital Resource Base. Based on student needs, the author designed a personalized Vocational College English Digital Resource Base, and implemented college English online and offline teaching to improve the quality of college English teaching, thus to provide some reference for further study.

Keywords: Artificial Intelligence; College English; Digital Resource Bank; practical research

1. Introduction

At present, in college English teaching, teachers often still use a textbook, a PPT, a blackboard, a chalk teaching mode, which is time-consuming and inefficient, especially in teaching listening and speaking course. This model can not achieve the language of effective input and output. "College English Teaching Guide" points out that "each University should make full use of information technology, actively create a variety of teaching and learning environment. Teachers are encouraged to build and use micro-courses and MOOCs, to transform and expand teaching content by using high-quality online resources, and to implement blended teaching models based on classroom and online courses, such as turning over the classroom, so that students develop towards active learning, autonomous learning and individualized learning." [1]

There is a close relationship between self-regulated learning and constructivism. Professor Bintrich of the American University of Michigan Institute (Golgi, 2005) believes that autonomous learning is an active, constructive learning process. [2] The idea of self-directed learning has been around in our country for a long time, emphasizing that what one learns should be acquired through one's own thinking, and that the important issues of self-directed learning should be systematically and comprehensively addressed by the East China Normal University Pang Guowei, in his monograph "Autonomous learning-principles and strategies of learning and teaching"(2003), the author discusses the psychological mechanism of autonomous learning, autonomous learning strategies and the development of autonomous learning ability. He believes that autonomous learning has the characteristics of initiative, independence, effectiveness and relativity. [3]

Along with the integration of artificial intelligence and English teaching, many online course teaching platforms have emerged in China, such as MOOC, classroom online, wisdom tree, excellent course alliance, Super Star, etc.. The reform of college English teaching has entered a stage of deep exploration, and the quantity and quality of digital resources are the important factors that affect the teaching effect of online courses. [4] This paper makes an empirical investigation on the current situation of the construction and utilization of college English digitized resources in higher vocational schools, and attempts to answer the following two questions: first, to have a deep understanding of the construction and utilization of college English digitized resources in higher vocational schools? and second, design a scheme and carry out the experimental research to figure out how to improve this situation. Through these studies, the aim is to provide some reference for the construction of college

English digital resources and online open courses in higher vocational schools.

2. Research basics

(1) A 26-member English project team consisting of front-line teachers, teaching researchers, vocational education curriculum reform experts, and industry and enterprise personnel was formed. Three questionnaires were formed as follows: The questionnaire of English Digital Resource Bank in higher vocational education (student questionnaire), the questionnaire of English Digital Resource Bank in higher vocational education (teacher questionnaire), and an interview outline of students. In order to ensure the authenticity, reliability and practicability of the research, the research adheres to the following principles: wide coverage, wide sample, authenticity, validity, practicability, economy and flexibility.

(2) The questionnaire was designed for about 1000 college students using the language self-access Learning Centre (SLC) and about 100 interviewees. The questionnaire focuses on closed questions, supplemented by open questions, and guided by constructionist theory. This paper studies the present situation of autonomous English learning resources and Environment in higher vocational colleges from the aspects of learning motivation, learning resources, environment and equipment, learning evaluation, etc. A total of 1,000 questionnaires were distributed, which eliminated invalid questionnaires, counted the answers to each question, calculated a percentage, plotted on the basis of the percentage, identified problems from the data and charts and found solutions to the problems.

(3) We managed to determine the content of the investigation. In the first place, the survey made an investigation on the construction of digitalized English resources in higher vocational education; in the second place, we tried to find out the students' source and the students' basic situation of English, to make clear the students' goal of learning English, to find out the difficulties and focal points of students' learning English; in the third place, we tried to find out the ways and means for students to learn English. Finally, we made a survey of English teachers in Higher Vocational Education to understand English teachers' teaching methods and means and to find out teachers' views on the construction of English digital resources.

(4) Analysis of Survey Data

Firstly, the first is the analysis of the students' understanding of English digital resources and the status quo of their study. Table 1 is the students' views on the interest and function of English digital resources.

Table 1 Students' views on the interest and function of digital English resources

Questions	Option 1 /percentage	Option 2 /percentage	Option 3 /percentage	Option 4 /percentage
Is the digital resource suitable for you?	Yes.always./ 17.43%	Yes. But only sometimes./ 60.67%	No. It doesn't suit me./ 18.68%	We don't have digital resources./ 3.22%
Is the digital resource helpful for your future?	Yes.always./ 36.26%	Yes. But only sometimes./ 36.82%	I have no idea../ 26.5%	We don't have digital resources./ 3.42%
Is it happy for you to learn from the digital resource?	Yes.always./ 18.76%	Yes. But only sometimes./ 30.68%	I have no idea../ 43.03%	No. never./ 7.53%
Does the digital resource meet your current needs in learning?	Yes.always./ 21.33%	Yes. But only sometimes./ 36.81%	I have no idea../ 37.96%	No. never./ 3.9%

As shown in Table 1 above, 95% of students recognize that digital English resources will help them in the future, and nearly 40% of them feel that they will be very helpful in the future. English is of great significance in improving self-quality, professional study, further promotion, study abroad and international communication. However, the discussion shows that besides teaching materials, the digital English learning resources provided by the school are limited, and students lack the habit and ability to use the online resources to study independently.

Secondly, the weakness, difficulty and emphasis in English learning of Higher Vocational Education Students.

In survey, most students lack self-confidence in communication and basic communication and expression ability when they discuss their weaknesses, difficulties and key points in English learning. Only 16.53% of the students could spell the words fluently with the help of phonetic symbols, and

59.07% of the students could spell the words basically. On the other hand, we give three English passages with gradients of difficulty for students to read in order to infer the students' basic English. More than 80% of the students choose and can read the second passage fluently, 10% of the students chose the first one and 10% chose the third one. This shows that most of the students' English is at the level of second year in senior high school. The majority of students don't have enough confidence in learning English and some even are full of fear in learning. In addition, they don't possess sufficient vocabulary in order to express themselves freely in their English speaking, writing and translation. Therefore, students' focus is also on improving their listening, speaking, reading, writing and translation skills. Among them, the interest in improving spoken English is the highest (51%), followed by reading, listening, writing and translation.

Thirdly, the way students learn English in higher vocational school

Students learn English mainly through the teacher's classroom teaching, to preview, review and complete the way of Homework; a few students will learn independently after class. Students are used to the way of teaching, relying on teachers and textbooks while lacking of self-learning awareness and network learning materials. Their active participation in classroom activities as well as initiative to learn is not high; therefore, how to reform on the basis of current classroom teaching, integrate innovative elements to guide students to actively participate in active learning has become particularly important.

Fourthly, teachers' evaluation of current English digitized resources

The teachers' evaluation of current English digitized resources mainly focuses on the quantity, grammar, content and overall difficulty of resources. This is shown in Table 2 below:

Table 2 comparison in vocabulary, grammar, text content, difficulty and other situation

DQ	PO	DQ	PO	DQ	PO	DQ	PO
There is too much vocabulary.	21.43%	There is not enough grammar.	7.22%	The digital resources help to develop abilities.	50.51%	The digital resources are too difficult.	9.09%
There is much vocabulary.	29.59%	Grammar is difficult.	37.11%	The digital resources only help to develop listening and speaking abilities.	13.13%	The digital resources are a bit difficult.	33.33%
There is appropriate amount of vocabulary.	40.82%	Grammar is easy.	43.3%	The digital resources only help to develop reading abilities.	9.09%	The digital resources are neither difficult nor easy.	53.54%
There is too little vocabulary.	8.16%	There is too less grammar.	12.37%	The digital resources can't help to develop communicative abilities.	27.27%	The digital resources are too easy.	4.04%

NOTES: In the table, DQ is short for description of the questions in the questionnaire; PO is short for the percentage of option, which means the percentage of students who agree with the description of the question.

From Table 2, we can conclude that about half of the students surveyed consider the English digital resources suitable for students while half of students think they are not suitable for them. Moreover, the basic digital resources are not systematic and systematic, which is not conducive to students' systematic learning. This situation will lead to the dilemma that classroom teaching can not encourage most students to participate in classroom activities, thus affecting the teaching effect and the improvement of students' ability. Therefore, the development and utilization of new digital curriculum resources is essential.

Fifthly, a survey of the needs and requirements of employers for English.

The enterprises not only attach great importance to students' professional knowledge, but also attach great importance to students' comprehensive quality and learning ability, including professional ethics, behavior, attitude, cooperation awareness, cultural quality, communication skills, adaptability, physical and mental health. The general requirements for employers are: Effective oral and written English communication skills, sustainable learning skills, cross-cultural communication skills. Overall, 53% of the enterprises surveyed want graduates to have good English listening and speaking skills. The needs

of listening, speaking, reading, writing, the English language skills can be seen in Table 3(from Wanfang data).

Table 3 the requirements of employers for graduates' English skills

Comprehensive abilities	Speaking ability	Reading ability	Writing ability	Translation ability
11%	53%	14%	11%	11%

(5) Conclusion of the investigation

Through the statistical analysis of the interview video, questionnaire, etc. , this paper basically finds out the current situation of the construction and use of public English digital resources in higher vocational colleges, and sorts out the existing problems. Consequently, the conclusion will provide the basis for the next step of digital resources construction and practical application.

In the first place, the students' English Foundation is weak.

Because of the objective condition and the limitation of the students' source, the students' English Foundation is weak, and the differences between schools and individuals are great. This leads to the fact that some students in the classroom teaching cannot have enough knowledge to learn and master while the other students cannot understand what is taught in class at all. This difference restricts the development of teaching activities. It is not conducive to take into account the individual differences of students. This requires us to consider carefully in the next step. The construction of digital resources, should be based on the students' actual needs.

In the second place, students have two paths towards success after graduation.

The students can choose to further their studies or hunt for employment after graduation. Students who choose to further their English language knowledge, language skills, graduation to meet the higher requirements required for further studies. The students who choose employment hope to learn the contents related to the workplace in the course of study, and to meet the basic requirements of the employer when they graduate, so as to improve their ability in the workplace. This requires us in the next step of the design to fully consider the two outlets for students to meet the different needs of students.

In the third place, there are many kinds of teaching methods, but the use of modern information technology needs to be strengthened.

Teachers often use situational teaching or task-based teaching, but the participation rate of students in teacher-student interaction is still not high, the setting of a situation or task has not yet achieved its intended purpose. In the context of big data, the rapidity of network enables students to quickly access a large amount of information. Teachers should make full use of network means to stimulate students to learn English online and offline, to train students to use the network for self-learning and lifelong learning ability. In the next step of digital resources to strengthen the teachers of modern information technology learning and application.

3. Construct the digital resource base of higher vocational English based on artificial intelligence

The research and development of English digital teaching resources is beneficial to the cultivation of students' individuality. Through the English database resources, teachers can promote the establishment of teaching multi-dimensional space, digital resources of college English classes, and students can use debris time, mobile phones as well as other mobile devices, bit by bit, at any time, anywhere to study step by step.[5]

Therefore, based on the survey data and analysis, this practice puts forward the three-dimensional integrated curriculum system of "English basic required course"+ "English listening and speaking Skills Improvement Course" + "Web-based autonomous learning course".

Innovate English listening and speaking training and guidance, English test, go abroad, workplace promotion and college English listening and speaking classification guidance.

This paper introduces a teaching service platform which integrates "test, practice and evaluation" into one. The students can practice listening and speaking on-line to break through the limitation of time and space. By means of modern information technology, students' interest in learning can be aroused, their knowledge structure can be improved, and their listening and speaking ability can be

effectively improved. It is suggested that such methods as role-playing, experiential teaching, task-based teaching and project-based teaching be adopted to train students' thinking and learning in classrooms, through which the teaching effect can also be improved.

4. Carry out teaching practice based on digital resource database

We carried out a semester's experiment, selected students from class one majoring in Internet of Things Engineering to carry out the English teaching based on digital resources. Different teaching models of the same class were used to compare and analyze, and some monitoring data were used to analyze and judge, such as the statistical data of students' online learning activities and assignments, the statistics of the utilization of teaching resources and the students' online activities can fully reflect the students' participation in teaching activities and the completion of learning tasks, it can judge whether the designed teaching activities are carried out smoothly, and the degree of students' mastery of knowledge content, etc. The following three graphs are drawn from the online teaching database to illustrate the experiment teaching.



Fig. 1 monitoring data of access time of digital resources in online course teaching

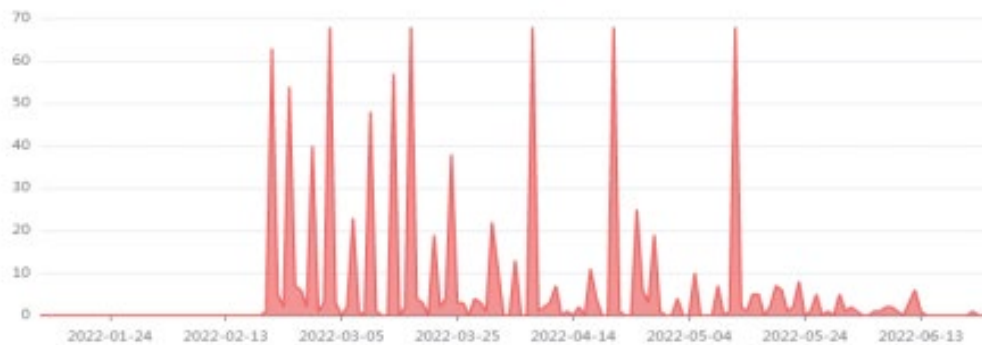


Fig. 2 the monitoring data of the number of students participating in digital resource learning in online course teaching

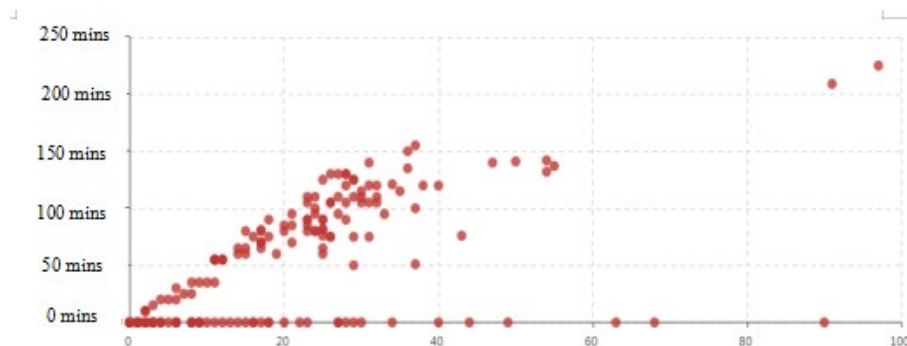


Fig. 3 monitoring data of students' access to autonomous digital resources after class

Figures 1 and 2 intuitively reflect the reality of the online course teaching process, with all students participating in the online learning, which means a 100% participation rate. A majority of students participating for periods range from 30 to 60 minutes, with the highest being 180 minutes. The students

will continue to study in class to after-class, whose self-awareness continuing to improve. Students are able to participate in activities and complete learning tasks as required. The peak appears at the same time as the training requirements after each class. The number of visits (self-directed learning) during the course is maintained and the course is completely silent after the end of the course, it also reflects the current state of online course learning.

Figure 3 reflects the learning calls to non-assigned partial autonomous learning resources, with half of students having 50 to 100 minutes of study time and a quarter of students having more than 100 minutes of access time, a quarter of the students did not participate in the digital resources learning, but can not truly reflect the students' autonomous learning, from questionnaires, teaching feedback forms found that, students devote considerable energy and time to learning a variety of other resources outside the classroom. Compared with the students' visiting teaching resources in different classes taught by different teachers, the differences of Teachers' supervision and inspection have obvious differences in the degree of self-regulated learning, and the students with high degree of self-regulated learning have obviously higher average grades.

Nevertheless, it is much difficult to process the data of students' participation in class activities. At present, the statistical analysis of the students' participation in various teaching activities in the online course is still lacking. The data of the active students and the results of tests can be grasped by the teachers, but other activities, for example, group, discussion and inquiry, the majority of students' participation, the implementation of the monitoring effect is not easy, which is the short board of online course platform.

5. Prospect of college English online course teaching and construction of autonomous learning resources

The future of artificial intelligence will be the future of education reform and resource construction in Britain. The Beijing Foreign Studies University has set up the laboratory of artificial intelligence and human language, which aims to study the laws of human language acquisition, explore the physiological mechanisms of foreign language learning, and effectively intervene in foreign language learning.[6] First, the wireless network and bandwidth will meet the classroom teaching interaction and online resources to meet the needs of a variety of flexible teaching activities, more to reflect the teacher-led, student-oriented teaching and learning. Second, the real-time statistical analysis function of the intelligent teaching environment for the learning process can help teachers understand the students' learning status, evaluate the teaching effect and adjust the teaching process, there are also long-distance classroom direct-link interaction, intelligent push of resources, etc. will give curriculum teaching and self-learning to bring new promotion.

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