College English Ecological Teaching Model Based on Computer Network Environment

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Abstract. In recent years, ecological teaching of college English has become a research focus. This research mainly discusses the ecological teaching mode of college English based on the computer network environment. The college English classroom teaching and the network autonomous learning classroom under the computer network environment of the university public foreign language teaching and research department are selected as the objective test environment, and the qualitative and quantitative integration are combined to summarize the imbalanced performance in the integration. From a micro point of view, deeply explore the constraints that affect the successful construction of an ecological teaching model in a computer network environment, focus on investigating the "student anxiety" in the network teaching environment, sort out the original text data obtained from the experiment, and conduct scientific statistics on the effective data, quantitative analysis, find out the cause of anxiety, thus complete the experimental design and data collection. On average, 55.6% of students have an anxiety tendency when they study online, and even 35.9% of students have serious anxiety and frustration. This research has guiding significance for the ecological teaching of college English.

Keywords: Computer Network; Ecological Teaching College English; Network Autonomous Learning; Restrictive Factors

1. Introduction
Vocabulary is a basic element of language. Whether it is English listening, speaking, reading, writing or translation, it is inseparable from vocabulary. In view of the importance of vocabulary teaching in English learning and the current vocabulary teaching there are some problems that cannot be ignored, this research is based on observation on-the-spot teaching and launches a practical and guiding study of college English vocabulary ecological classroom.

According to the reasons for the imbalance of the ecological vocabulary classroom, the author tried to create a way to create an ecological vocabulary classroom in college English [1-2]. On the one hand, college English teachers must learn advanced theories of ecological teaching of English vocabulary and update their teaching concepts and teaching methods [3-4]. On the other hand, college English teachers should combine the advanced theories they have absorbed into daily teaching in order to truly improve the situation of college English vocabulary teaching [5-6]. College English teachers should absorb the advanced theories of ecological pedagogy at home and abroad, combine their own
teaching practice, choose the essence of them, and use them for my use, and find the way of ecological English vocabulary teaching that is compatible with the actual English teaching in our country [7-8]. Moreover, college English teachers should break the tradition in teaching methods, boldly let go, actively innovate, and combine new things such as Wei bo and We Chat [9-10]. Find ways and methods that students are easy to accept, let students learn actively, become masters of learning English, and go to teaching practice, teach them how to fish, let students master the methods and methods, and train students to use a variety of learning strategies and methods in vocabulary learning to improve vocabulary Learning efficiency [11].

First of all, how to assign each student to a suitable study group according to the characteristics of each student. Teachers need to understand each student's personality characteristics, strengths and shortcomings, etc., and teachers should have better coordination and management skills; secondly, when When the members of the study group have disputes and need to be adjusted, the teacher should patiently understand the ideas of the study group members, analyze the pros and cons, and handle them properly; finally, the study group does not mean that the teacher can ignore the students. On the contrary, the teacher should teach the students how to learn together, so that students know better to conduct group cooperative learning.

2. Ecological Teaching of College English

2.1. Ecological Teaching

The construction of ecological teaching mode can in turn promote the ecological development of classroom teaching. This model is guided by the theory of educational ecology, practiced the "student-oriented" educational philosophy, designed multi-dimensional interaction and other forms of teaching activities according to students' ability levels and knowledge needs, and balanced several teaching components and ecology. The niche relationship of factors promotes the natural, harmonious and free growth and development of students under good artificial conditions. The construction of the model aims to comprehensively consider the internal and external pressures of students' learning, students' nature and social norms and other objective factors, and utilize the subjective consciousness of teachers and students of ecological subjects and positive emotional development to mobilize teaching cognition and other body activities.

2.2. Computer Network Teaching

We must reasonably analyze the causes of the disorder and explore countermeasures to solve the disorder. Although traditional teaching theories can explain the nature of human learning activities well, the existing teaching system not only involves teaching and learning, but also includes more components such as technology and resources. For \( \forall f \), within time \( 0 \leq s \leq t \):

\[
(f \otimes g)(t) = \begin{cases} \inf [f(t-s)+g(s)], & t \geq 0 \\ 0 & \end{cases}
\]

(1)

Among them, \( \inf \) represents the upper bound of the function. Suppose that the data flow is restricted by the function \( \alpha(t) \) when it reaches a node. When passing through this node, the service curve provided by the node satisfies:

\[
R(t) - R^*(t) \leq R(t) - R(t) \otimes \beta(t)
\]

(2)

\[
Pr \{A(s,t) - \alpha(t-s) > x \} \leq f(x)
\]

(3)

Among them, \( x > 0 \). The ecological teaching concept believes that the ecological factors in education and teaching interact and influence each other, and insist on viewing the problems in education and teaching with the eyes of connection and development. Therefore, vocabulary teaching
does not teach vocabulary knowledge points independently, but integrates them into English Listening, speaking, reading and writing teaching. Teachers play different roles in classroom teaching practice according to the needs of activities. Through interactive and effective practical activities, teachers play some new roles in English vocabulary classrooms, such as student collaborators, participants in classroom activities, etc., so that the subjects of high school English vocabulary classrooms can coexist harmoniously and develop in an ecological direction.

3. College English Ecological Teaching Experiment

3.1. Questionnaire Survey and Interview
The college English classroom teaching and the network autonomous learning classroom under the computer network environment of the university public foreign language teaching and research department are selected as the objective test environment, and the qualitative and quantitative integration are combined to summarize the imbalanced performance in the integration.

3.2. In-Depth Test Teaching Elements
On the basis of questionnaire surveys and in-depth interviews, we carried out extensive classroom observations, combined with observations and findings, from a micro perspective, deeply explored the restrictive factors that affect the successful construction of an ecological teaching model under the computer network environment, and analyzed the hardware environment and software facilities, Teacher-student roles and ecological niche relations, etc., focusing on the investigation of "student anxiety" in the online teaching environment, sorting out the original text data obtained from the experiment, scientific statistics and quantitative analysis of the effective data, and finding out the cause of anxiety. Experimental design and data collection and analysis part. The selected student types are shown in Table 1.

| Classification basis | Natural information                          |
|----------------------|---------------------------------------------|
| Gender               | 548 boys; 452 girls                         |
| Source type          | 88 students in the excellent class; 234 students from the first class |
| Grade                | Freshman 532; sophomore 468                |
| Birthplace           | 624 students in the city; 376 students in the countryside |

4. College English Ecological Teaching

4.1. Teaching Concepts and the Role of Teachers and Students
Table 2 shows the analysis results of teaching concepts and the role of teachers and students. The survey statistics show that the average attitude of teachers and students believes that only 47.6% and 44.3% of teachers can act as direction guides in multimedia classrooms and student online autonomous learning, respectively. It can be seen that more than half of teachers have almost ignored their due guidance. At the same time, the survey showed that as many as 43.6% and 47.3% of the students were evaluated as marginal persons in multimedia classroom teaching activities and passive knowledge recipients in network autonomous learning, resulting in a serious lack of the role of learning subjects and poor personal learning needs. It is clear that the ability to decide independently is poor, and the learning process is only blindly and passively accepted. There are even 34.7% of the students who are evaluated as network information losers, and their learning effect is even worse.
4.2. Teachers’ Basic Quality of Online Education Technology

Figure 1 shows the analysis results of the basic literacy of teachers' online education technology. Teachers' information literacy ability is a key factor to promote the integration of computer network technology and foreign language courses. Students' evaluation of the effectiveness and quality of teachers using computer networks for teaching is the most illustrative. The survey shows that more than half of the students hold a positive attitude towards the teacher’s online education information literacy, but some students’ evaluations show that the teacher’s information literacy is inferior in some aspects. For example, in students’ online self-learning classrooms, 38.2% of students think that teachers’ ability to guide and monitor them is average, and 16.5% think they’re bad. In the multimedia presentation class where teachers mainly explain, 25.4% of the students think that the teacher's ability to operate computers is not strong, and even 19.4% of the students think that the teacher's ability in this area is weak. Combining the results of the in-depth interviews, we can conclude It is concluded that the teacher's lack of computer operation ability is mainly reflected in the demonstration of teaching courseware and CD-ROM and the troubleshooting of machine faults. Regarding the evaluation of whether teachers can use the media to promote teaching, 39.2% of students think that the effect is average, and 12.1% of students think that there is almost no effect. This shows that the information quality of college English teachers needs to be improved urgently.

Figure 1. Analysis of the basic literacy of teachers' online education technology

4.3. Student Information Technology and Autonomous Learning Ability
Figure 2 shows the analysis results of student information technology and autonomous learning ability. In network teaching and autonomous learning centered on "learning", students are required to have higher learning autonomy and self-discipline. However, the survey showed that more than half of the students did not perform well in this aspect. Combining the analysis of classroom observations and in-depth interview records, the imbalance of students' information technology and autonomous learning ability can be divided into two types according to their causes: On the one hand, due to the rejection of English learning itself, some students also lack self-learning on the Internet. Enthusiasm, low enthusiasm for participation. On the other hand, an average of 55.6% of students have an anxiety tendency when doing online learning, and even 35.9% of students have serious anxiety and frustration, unable to complete the planned learning tasks as scheduled. From the perspectives of anxiety type, degree, reasons, etc., this paper analyzes the student's learning anxiety in the computer network environment. The data obtained shows that the cultivation and development of students' autonomous learning ability in this environment is affected and restricted by many factors. Research shows that in the process of online self-learning, the anxiety level of boys in this school is higher than that of girls, the anxiety level of science, engineering and medical students is higher than that of literature and history students, and the degree of anxiety of students from rural and rural areas is higher than that of students from urban areas. The anxiety level of students with weak language foundation is higher than that of students with difficulty in computer operation. It can be seen that when we choose strategies to alleviate students' anxiety, we must comprehensively examine many natural factors such as gender, age, birthplace, and major of loyal students. And combine its original language foundation and computer operation ability to carry out comprehensive, rational and effective adjustment.

![Graph showing analysis results of student information technology and autonomous learning ability.](image)

**Figure 2.** Analysis of student information technology and autonomous learning ability

5. Conclusion
College English teachers actively learn advanced vocabulary teaching theories such as ecological pedagogy, and the vocabulary teaching ideas are novel. However, due to the gap between college English vocabulary teaching concepts and teaching practice, the uneven distribution of teaching resources, the "teaching" of teachers and the "learning" of students due to disharmony and lack of ecological evaluation mechanism, there are still some ecological imbalances in vocabulary teaching classrooms, such as the imbalance of the classroom subject, the imbalance of the classroom environment, the imbalance of classroom teaching, and the imbalance of classroom evaluation.

Advocate that college English vocabulary ecological classrooms should find innovative ways suitable for the teaching environment of large classes, such as setting up English vocabulary learning interest groups in the class, carrying out various forms of practical teaching activities, and integrating...
vocabulary teaching into English listening, speaking, reading and writing teaching. It should not only focus on the explanation of the knowledge points of words.

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