

# Study of English teaching by multimedia in the perspective of ecology

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Accepted 1<sup>st</sup> January, 2017

**Abstract.** Nowadays our society has grown fast and undergraduates require more on their English proficiency. The development of technology has made widely-usage of multimedia possible in college English class, which provides a new and convenient approach for students to enhance their English ability. However, it makes some negative impacts on both students and teachers. Educational ecology has formed a relatively completed frame since 1960s, offering a new viewpoint for the study of education. Therefore, this passage summarized the concept and content of the combination of the educational ecology and the English teaching, regarded the classes teaching as a special ecosystem, explained theoretically the essence of the class ecosystem, learning and teaching effects of students and teachers in the multimedia environment, and analyzed the status of the teaching ecosystem on the effect of teaching activities, teaching management, and the communication between teacher and student through an investigation. The result of the study demonstrated that the multimedia could effectively improve the teaching activities, while the influence on the teaching management is dissatisfactory, and the least influence is on the interaction between the teacher and student. Based on this conclusion, corresponding suggestions to optimize the college English teaching ecosystem in the multimedia environment are proposed.

**Keywords:** Multimedia, ecosystem, college English teaching, effectiveness.

## INTRODUCTION

Since 1980s, Chinese English teaching is keeping a long-term growth and exploration. As the global economy integrates, the labour market is more demanding for English proficiency of graduated students. However, the survey indicates that, in recent years, employers are generally dissatisfied with the English ability of graduates. As the information technology develops rapidly, its application is increasingly popular in college English education, and provides a platform to improve students' listening and speaking skills and integrated applied abilities. The rise of ecology study in 1930s has made a great impact on the pedagogy so that a new and special pedagogy has formed, providing a correspondingly new viewpoint and academic tools for education study. As a micro object of ecology of study, teaching ecology study is at the preliminary stage, especially in the practical

study. "Higher education should take full use of the modern information technology based on the computer, and should change the old-style teaching model of teaching merely by teacher's lecture into a new one that can break the restriction of time and place for English teaching with developing self-learning style." The Ministry of Education cited in the College English Curriculum Requirements in 2007. Being directed by this rule, many colleges gradually managed to utilize the advanced multimedia and computer in English class by accelerating the process of information of the college English teaching. Information technology based on computer network has become an important part of college English teaching. Thanks to this teaching method by new technology, the relations between the teaching and learning, teachers and students, have changed remarkably

by pushing greatly the development of college English teaching. However, some problems still occur in the process of the application of the new teaching method. Traditional teaching theory is unlikely to explain the imbalance of the college English teaching in China.

## LITERATURE REVIEW

“Ecology” was first raised by a natural scientist Henry Thoreau in 1555, and it referred to the relationship structure containing complete ecosystem in German (Waller, 1932). In 1978, Doyle studied the ecological theory of teaching and associated teaching with the society (Doyle, 1977). In the same year, Wattenberg came up with the scale of classroom ecology, dividing the ecology into seven aspects: homework, the role of teacher, student activities, the scale of group, the relationship between students, the sequence of activities, the choices of students and the number of teachers (Wattenberg, 1977). In 2000, Wolery and his colleagues put forward the ecology of classroom culture, and noted that it contained five technical points - physical structure and organization, rules and regulations, altitude of class management, recognition and expectation (Wolery and Garfinkle, 2002).

Teaching ecology takes impact on both student and teacher, and it plays an important role in English teaching. Li *et al.* (2011) catalyzed class environment into natural environment, cultural environment and physical environment. Liu (2008) cited that the study for college English teaching should contain the ecological features, ecological environment in the classroom, the cooperation and competition in English class. Zuo (2007) proposed that when considered the factors that influenced the language study quality and effect, the various environments were necessary. Zhang (2000) thought that the four subjects were teacher, student, books and environment. Du (2004) considered the teacher subject, student subject, text subject and the text as the four elements of subject. Wang (2004) brought course evaluation in the teaching ecology system, and thought that the in-time evaluate would improve the interaction performance between teachers and students. Huang and Chen (2010) concluded that the individual characteristic should be exposed in the evaluation process, which helped the cooperation between subjects.

From the literature abroad we can find that many studies have applied the many methods such as observational method, scaling method, statistical method, system analysis method, and have studied such macro aspects as education phenomenon, educational system, educational ecosystem, and micro aspects as material equipment, seats arrangement, classroom atmosphere, subculture of student and learning tools of students, making great contribution at present. They also paid attention to the interaction among the whole environment

and revealed that the ecosystem benefiting the development of education. The abroad researches of classroom ecology also attach great importance on the disadvantaged groups, including special education class, kindergarten class, older student class etc. In contrast, domestic studies mostly focused on the introduction and primary summary of abroad research achievement of class ecology, far away from systemic and intensively practice. Although our college English teaching has made great achievement at present, there are still many things needed to be improved. As the related research could hardly been found, this paper is mainly to analyze the English teaching in ecology and the effect of the multimedia in this system.

## METHODOLOGY

Referring to a great number of studies on teaching ecosystem, the questionnaire is designed from the following aspects: the basic condition of the multimedia facilities, the effectiveness on improving teaching activities, the enhancement on teaching management, the acceleration on interaction between teachers and students. Based on the Likert5 tool, the questionnaire measured object though 1 to 5 to indicate the degree of approval (Table 1).

Questionnaires were handed out to several universities and colleges e.g., Jinan University, Sun-Yet-San University and Shenzhen University in Guangdong Province on Feb.2nd, 2016. Totally 156 were retained, among which 153 was valid, and effective rate was 98.08%. As for the test for the credibility of the original clause, the third one is to test the inner consistency of the questions (Li, 2004). Cronbach’s Alpha (Table 2) value can be got by Statistical Product and Service Solutions. The total scale of the Cronbach’ salpha is 0.817, showing a satisfactory consistency.

## ANALYSIS AND FINDINGS

Among the respondents, 105 are female accounting for 67.74% of the total number, and 50 are male. As for their majors, 60 students are from English major and others are not. 149 of the whole respondents have had or are on the way of studying their bachelor degree, accounting for 96.14%. As for the teaching by multimedia, 96.53% of the students pointed out that to display texts by PowerPoint is most widely used, then the rate of playing video, is up to 86.81%. The rate of using multimedia to display the pictures and recording hit 75 and 73.61% correspondingly. Generally, in college English teaching, multimedia is used variously in a high frequency, and this way is acknowledged by most of the students, who expressed that it did helped in their English learning. According to the questionnaire survey, the class ecosystem

**Table 1.** Questionnaire items.

<b>Ecological teaching</b>	<b>Main content</b>	<b>Resource</b>
The effectiveness of the teaching activities	Lecturing is logical and clear	Hongxia (2005)
	Multimedia-assisted teaching methods are convenient	
	A good classroom environment can be established	
	Learners can be helped effectively	
	The interests of the learners can be motivated	
The effectiveness of the teaching management	The establishment and implementation of the rules of the class is effective	Yichun (2003)
	The control of the teaching time is effective	
	The teaching management is appropriate	
The harmony of the interaction between teachers and students	Problems occurring in the class can be handled on time.	Shangwu (2004)
	The questionings are appropriate and efficient	
	The group discussion is appropriate and efficient	
	Learners can be motivated effectively	
	Non-verbal communication is satisfying	

**Table 2.** Cronbach's alpha of the questionnaire.

<b>Scale</b>	<b>Number of items</b>	<b>Cronbach's alpha</b>
Basic conditions of the use of multimedia	4	0.716
Teaching activities	5	0.801
Teaching management	4	0.771
Interaction between teachers and students	4	0.769
Total scale	17	0.817

**Table 3.** Score of each measured item.

<b>Item</b>	<b>Score</b>
Effectiveness of the operation of multimedia teaching method	4.04
The effectiveness of sorting the knowledge logically and clearly	3.65
Time control	3.53
Construction and implementation of the class rules	3.5
Assignment and correction of the homework	3.46
The enhancement of the discussing atmosphere in class	3.34
Direct and high-effective communication	3.27
Group work and collaboration	3.22
Problem solving	3.18
Questioning between teachers and students	3.12

can be divided into three parts, and the scores tested from students are ranged as follows from high to low: the effectiveness of the teaching activities, the effectiveness of the teaching management, and the degree of the harmony of the interaction between the teachers and the students. They can be ranked more specifically in Table 3, as the scores can be divided into 3 levels with a gap of 0.5 point between each level. As the scores can be divided into 3 levels with a gap of 0.5 point between each level, it is found that the use of multimedia can highly

improve the effectiveness of the operation of multimedia teaching method in teaching activities. The second level's score is from 3.50 to 4.99, showing the influence on the effectiveness of sorting the knowledge, time control and construction of class rules is almost the same, which is concluded in teaching management. The third level's score is from 3.00 to 3.49, and the influence on the questioning between teachings and students is the least, which concerned the interaction between subjects.

From the statistics, some findings could be drawn out:

Firstly, the use of multimedia largely improved the teaching activities in English teaching classes as the figure indicates 4.04. As the core bridge connecting the students and the internet, multimedia is capable of offering various English study materials including text paper, practice items, original videos and online questions and answers and so on. This helps students to logically separate knowledge and create them a healthy environment of English study.

Secondly, the influence of multimedia to teaching management is less obvious than to the teaching activities. Though the various resources the multimedia can offer, it could also exist as a "tool". In a class of 45 minutes, a teacher can often lecture more than 30 minutes with taking the multimedia as a "tool" to finish the teaching objectives. Usually in class, teacher would present the class rule and time arrangement in the first class through multimedia and use it to present the class content in the following classes.

However, the third finding indicates, the multimedia use can barely improve the interaction between teachers and students. The main reason for this issue, from my perspective, is that the teachers have not yet mastered the psychological features of the students at this age. There is no doubt that the clear and logical lecturing of the teacher to some extent guarantees the flow of a big abundant of knowledge in class teaching. In the practical class, such phenomenon as unrealistic expectation from teacher to students, lack of affective interaction and strained relations occur often. Although a great number of papers have conducted theoretical research on this issue, practically speaking, there are still many classes short of vitality. How students percept and feel about the teaching with multimedia should always be regarded as a vital factor on the formulation and implementation of the teaching objectives.

## CONCLUSION

Education ecology is an emerging edge discipline with a history of more than seventy years. Ecology with its unique ideas and opinions, offers education ecology a unique perspective and academic tool, and provides a new direction to the research of pedagogy. Based on this, the authors selected this research subject, regarded the classroom as a kind of special ecosystem to analyze the multimedia college English teaching problems with the ecology-related idea, viewpoint and method. Since the ecological class teaching is a complex ecosystem, the proposed strategies to improve the English class teaching in the view of ecology should not be limited to the three aspects described herein. The class teaching is a multidimensional complex network organized by teachers, students and teaching environment, and the factors influencing the ecological class teaching are more than the external and internal ones. What's more,

principle of ecology provides us a transitional way of thinking, instead of the universal way to solve the problem.

## RECOMMENDATIONS

One of the most important reforms mentioned in College English Curriculum Requirements is to establish a totally new teaching model based on the computer, network and multimedia. It reads: "Colleges and universities should take full use of the modern information technology based on the computer and multimedia to swift the traditional teaching pattern from lecturer-centred to a new modern teaching model supported by the networking technology, to release the English teaching from the restriction of time and place." Therefore, some suggestions to better multimedia teaching are put forward. Firstly, the use of multimedia in teaching activities in English teaching classes should be encouraged. According to the survey, the use of multimedia greatly diversify the teaching activities because of the abundant English study resources. Students can build team work to enhance communication to increase the usefulness of resource, and teachers can also introduce outstanding methods, websites and videos to help students create real English learning surroundings as much as possible. What's more, teachers could also take a scientific evaluation way to maximize the teaching effectiveness.

Secondly, the use of multimedia in teaching management in English teaching classes should be enhanced. In teaching management, the problems solving score is the least and is called limiting factors that should be concerned. Limiting factors are the crucial factors in ecology that refers to the restriction of the survival or breed of the biology. Limiting factor can transfer into non-limiting factor or facilitated factor. This rule reminds us that we should pay close attention to every factor, especially those that problems would occur immediately in the teaching management and take full advantage of the factors to decrease the problems. Suppose teachers do not divide students into groups to create a space and time for their communication, this teaching management method will fall into a limiting factor. Therefore, to improve the functions of every factor, previous managing way needs to be reformed and a democratic way is required to cultivate the initiative of the students.

Thirdly, the use of multimedia in the interaction between teachers and students should be paid great attention to. In the same English class, some students can benefit a lot from just listening to the lecture of the teacher, some can do from reading the materials, while others maximize their earnings from discussion with friends and teachers, which shows the huge different learning style among individuals. When interacting and communicating with each other, both the students and

the teachers should take notice of the demand of each other so that faith can be achieved. We should focus on both the individuality and the generality of the subjects of the class.

Fourthly, as we know, ecology is not just a science but also a special methodology and ideology to guarantee the effectiveness of the teaching activities and the teaching management and to improve the interaction between the students and the teachers. We can also allow teachers and students to assess each other by using one-to-one conversation or group discussion so that we can get mutual understanding and teachers can take a more proper way to teach with being trusted by the students.

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