

# Research on College English Flipped Classroom Based on Multimedia Application

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## Abstract

Under the circumstances of globalization and informatization, College English teaching reform shows a growing trend of rapid development. To some extent, Multimedia technology has been applied to College English to improve teaching quality. Flipped Classroom, combined with multimedia technology, represents a new trend in the information age. It converts monotonous language teaching into vivid and amusing exploring instruction by virtue of multimedia, internet and computer for the sake of internalized knowledge. Modern information technology applied to College English teaching, not only achieves modernization, diversity, and convenience of teaching approach, but also promotes the change of teaching idea, teaching content and teaching method. Colleges and universities should fully utilize information technology to create multiplex environment of teaching and learning. This paper introduces current multimedia information technology in education and College English course. Then, theoretical basis of College English Flipped Classroom and methodology of this study are shown. It makes quantitative and qualitative analysis and discusses the results due to statistical data. Finally, it draws the conclusion that Flipped Classroom College English based on multimedia is feasible and put forward some suggestions for further study. It's of urgency to construct multimedia teaching and managing platform, polishing College English teachers' quality and teaching level with informatization, and cultivating students' English autonomous learning competence.

**Keywords:** *Multimedia, Application, College English Flipped Classroom*

## 1. Introduction

“Work outline of the Ministry of Education in 2021” points out actively promoting informationalized education construction. During the period of “the 13th Five-Year plan”, China and UNESCO held a series of conferences revolved around hot spots and the frontiers in the field of international education, education informatization, multimedia technology and so on. It inspires inner impetus for teachers' application in information technology, instructs teachers to adapt actively to new technology change like informatization and information technology, etc. and positively explore education and teaching method in modern times.

As a required course in colleges and universities all over the nation, College English course plays an important role in Chinese higher educational curriculum [1]. *A Guidebook to College English Teaching (2020)*, further defines curriculum design based on teaching objective should attach importance to the construction of online courses platform, which blend classroom

teaching and learning based on network. Teaching method and teaching approach have a great impact on teaching effects and teaching quality. In the era of informatization and intelligentization, modern information technology such as multimedia technology, has become an important means of foreign language teaching. English teachers should make full use of multimedia network teaching platform, and give the autonomous learning path and abundant autonomous learning resources integrated with classroom teaching and modern information technology to impel students to transform from passive learning to active learning [2].

## 2. Theoretical basis

Mastery Learning Theory by American psychologist and educator Bloom in the 1960s is deemed the earliest theoretical basis of Flipped Classroom, which overthrows Psychologist Carrolle's normal distribution theory of learning competence. In view of academic achievement factors, Bloom permits students to master their learning schedule under the guidance of the teacher

directed to individual and small group. In the 1990s, the professor of Harvard University and famous educator, Eric Mazur founded Peer Instruction. Compared with traditional one-way classroom lecture, Peer Instruction tends to concern about both imparting knowledge and internalizing knowledge. Constructionism, Piaget', holds that learning needs constant self-adjustment, and abstract concept construction by reflection. Knowledge would be constructive, social, complex, affective, and tacit. The teacher should arouse students' initiative to learn actively and mutually [4].

Mastery Learning Theory, Peer Instruction and Constructionism offered to Flipped Classroom. With the development and popularization of the Internet, Flipped Classroom Model has been increasingly prevalent in U.S [3]. In 2000, teachers of Michigan University, Maureen Lage, Glenn Platt and Michael Treglia issued an academic paper "Inverting the Classroom: A Gateway to Creating an Inclusive Learning Environment", in which Flipped Classroom Model was introduced when they taught An Introduction to Economics course. It proved that better teaching effect was taken. In 2004, teaching video made by Salman Khan which was uploaded to the Internet, and then Flipped Classroom Model used in teaching by Chemical teachers of Woodland Park High School Jonathan Bergmann and Aaron Sams in Colorado, U.S. helps spread advanced teaching model in elementary and secondary education in U.S. In 2011, Khan Academy, an educational non-profit organization, makes efforts in extending free lecture online. By means of based-web courses in the form of 10-minute short videos, a great number of subjects such as mathematics, history, astronomy and etc. and more than 3500 short teaching videos are presented on the Internet in its open multimedia e-learning platform. This new teaching model has achieved a breakthrough in Flipped Classroom worldwide.

### 3. Methodology

#### 3.1. Research hypotheses

Modern information technology, especially multimedia technology, is applying to College English teaching. Flipped classroom create multiplex multimedia environment of teaching and learning. Feasibility and measures of College English classroom based on multimedia network is worthy of being conducted research. Hypotheses are as follows:

1). Colleges and universities can fully utilize multimedia network to achieve the innovation of teaching idea, teaching content, teaching method and management level.

2). College English teaching resources would be rich and convenient by establishing language laboratory,

multimedia network learning center on campus and multimedia teaching platform of online course teaching.

3). Modernized College English Flipped classroom teaching makes students personalize learning with interactivity, sharing, collaboration, and autonomy.

4). The Information Technology quality of College English teachers would be prominently important in College English Flipped Classroom.

### 3.2. Research instrument

#### 3.2.1. Quantitative analysis

Through statistical data, this research makes quantitative analysis of feasibility of College English classroom based on multimedia network.

#### 3.2.2. Questionnaire

During experiment, questionnaire investigation is utilized to evaluate students' satisfaction degree of College English multimedia network teaching. This would lay foundation for feasibility and measures of College English Flipped Classroom teaching.

#### 3.2.3. Interdisciplinary approach

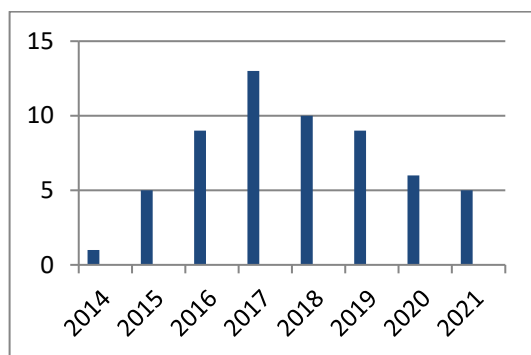
Interdiscipline is followed by the law of development of science. As one characteristic of this research, interdisciplinary approach is taken to synthetically study College English Flipped Classroom and multimedia network.

### 3.3. Research design

Firstly, the quantity of related themes' papers in CNKI is listed out. It evidently shows the research on College English teaching model based on multimedia is significant among modern scholars. Secondly, One hundred of the undergraduate investigated are chosen randomly from those who participated in Flipped Classroom for one semester. At the end of the semester, through EXCEL and SPSS, the teacher collects data and makes quantitative analysis to figure out students' satisfaction degree of College English Flipped Classroom. Finally, sum up the feasibility of College English Flipped Classroom based on multimedia with interdisciplinary approach.

## 4. Results and discussion

### 4.1. Quantitative analysis



**Figure 1.** The quantity of related themes' papers in CNKI trend chart

Researches on Flipped Classroom have been prevalent since the beginning of the 20<sup>th</sup> century, while the earliest research of Flipped Classroom applied to College English teaching was traced back to 2013. Theme of College English Flipped Classroom related to multimedia has greatly changed since 2014 (**Figure 1**). One-way teaching method in traditional College English Classroom is fixed in form and content, and seems boring and monotonous towards the youth born in the new era. Along with the arrival of Information Technology age, traditional College English Classroom cannot fulfill the requirements of College English teaching and learning. In order to reverse the current situation of unattractive College English Classroom, it is urgent to build a new College English Classroom model, easy to be distinctive in content, flexible and fashionable in form, and interactive emotionally based on multimedia. As a new study field, College English Flipped Classroom has aroused Chinese scholars' interests in recent years. Although only 58 papers involve the theme of Flipped Classroom with College English teaching model based on multimedia so far, it shows that multimedia technology applied to College English Flipped Classroom begins to emerge and expand gradually.

### 4.2. Questionnaire

**Figure 2.** Percentage of students' satisfaction degree of College English Flipped Classroom with multimedia

	Very Satisfied	Satisfied	Just So-so	Not Satisfied
The form of teaching with multimedia	58%	26%	10%	6%
The multimedia teaching resources	70%	18%	8%	4%

The role of College English teacher	42%	20%	19%	19%
Multimedia Learning environment	32%	20%	33%	15%
Multimedia network teaching platform	67%	10%	14%	9%
Teaching management	33%	38%	15%	14%
Students' participation degree	75%	9%	8%	8%
The effect of teaching	55%	24%	18%	3%
The timely learning feedback	46%	30%	16%	8%
Assessment of achievements	68%	17%	5%	10%

A questionnaire survey was conducted after one semester. One hundred participators in total are elected randomly from the undergraduate. There are ten items for investigating students' satisfaction degree of College English Flipped Classroom with multimedia (**Figure 2**). First four are about teaching procedure of teaching form, content, teacher and environment with multimedia. The item of multimedia teaching resources evidently wins higher satisfaction, and even 70% of students are very satisfied with it. It reveals that the teacher and students have a tendency of appreciating and making full use of abundant multimedia resources such as electronic files, audios, videos and web page links, etc. to help achieve College English learning better. Item five and six involves management system and teaching facilities, where multimedia network teaching platform are welcomed very well by students on the basis of data. Last four items cover students' true feelings after learning with multimedia online and offline for one semester. Among them, students' participation degree of Flipped Classroom is confirmed obviously higher than traditional College English classroom. And even 75% of students are very satisfied with participation degree in College English Flipped Classroom. As figure two shows, 42% of students are very satisfied with the role of College English teacher, while 20% of students are satisfied with it for College English Flipped Classroom teaching with multimedia. The effect of teaching are greatly influenced by multimedia learning environment and students' participation degree in multimedia teaching platform, for 79% of students in total are satisfied or even very satisfied with multimedia teaching.

### 4.3. *Interdisciplinary approach*

In Information Technology age, multimedia application technology, network, computer and smart phone have greatly changed people's way of living and learning. College students approve of springing up of Information Technology psychologically. With the aid of Web-based teaching and managing platform, College English Flipped Classroom is provided with abundant multimedia resources and advanced network technology, prompt and convenient to teaching and learning. College English Flipped Classroom is inclined to perfect managing system of College English course, and evaluation mechanism of teaching and learning. It urges College English teachers to improve their teaching level and Information Technology quality. By means of web-based teaching and managing platform, students' English autonomous learning competence would be enhanced step by step.

Through multimedia network, College English Flipped Classroom boosts comprehensive ability in English. Interactive instruction and empathy ability should be fundamental to College English learners. Task-based teaching approach and situational interactive teaching approach are common in College English Flipped Classroom. Among five English skills of listening, reading, speaking, translation and writing, multimedia network-based English teaching platform are suitable for listening to audio files and reading electronic documents, while language output like speaking, translation and writing are more likely to be trained in offline class. Multimedia interaction mode for listening and reading would save a lot of time and it is easy to operate for College English teacher and students. Speaking, translation and writing needs active participants of the teacher and students simultaneously. Comprehensive ability in English would be cultivated in a more flexible and highly effective approach in College English Flipped Classroom.

## 5. Conclusion

### 5.1. *Major findings*

The process and results of the experiment has testified research hypotheses before the experiment. College English Flipped Classroom takes full advantage of multimedia network in information technology and ensures improvement of teaching quality, autonomous learning ability of students and College English teaching model reform. Hardware and software of College English Flipped Classroom depend on multimedia network-based English teaching platform design. Combined with teaching online and offline, under regular epidemic prevention and control, the teacher could take full advantage of multimedia technology and College English teaching websites of We Learn,

Learning Channel, Tencent Classroom and etc. to build teaching platform in terms of present situation in our university. Short teaching videos are recorded and uploaded onto teaching websites. High-quality and rich teaching multimedia resources such as electronic files, audios, videos and web page links are shared with learners to the Internet. Managing platform of College English Flipped Classroom is based on the teaching and learning data of managing platform of our university and English teaching platform above. Formative Assessment and Summative Assessment could be achieved through managing platform. Learning supervision on online managing platform covers all aspects and stages of teaching and learning, such as cognitive structure, affective factors, ability improvement, rate of progress, learning effect and etc. Students' self-evaluation, mutual evaluation between learners and evaluation from the teacher would be shown on managing platform online.

### 5.2. *Teaching implication*

Information technology construction provides dominate guidance centering on College English teacher. With defined teaching objective, teaching points and teaching tasks, teachers should have multimedia, internet and computer knowledge. Well equipped with multimedia network technology, College English teachers should grasp how to make teaching courseware, collect useful electronic learning materials on the internet, and assigned tasks on web-based multimedia English teaching platform. To master academic frontier at home and abroad is ranked first for College English Teachers. Through the Internet, they could broaden their horizons, learn more specialized knowledge and obtain more electronic teaching materials in time. Therefore, College English Teachers must exert more effort to improve their teachers' information quality.

College English Teachers should possess the quality of controlling online class and offline classroom to properly and totally arrange teaching progress, inspire learning motivation, execute interactive instruction, and achieve online teaching and managing feedback. With the novelty and interest of information technology, it is helpful to establish harmonious relationship between teachers and students by online and offline communication in a new era. Teachers should fully employ task-based teaching approach in College English Flipped Classroom and well-designed classroom activities would make teaching more effective. In the background of large data age, teachers should make efforts to take advantage of multimedia network information technology in College English Flipped Classroom teaching and improve the ability of solving problems and being given immediate feedback.

### ***5.3. The prospect of multimedia application in College English Flipped Classroom***

Traditional College English Classroom puts emphasis on the teacher's lecturing. In College English Flipped Classroom, the learner becomes the main character of online and offline classroom, when conveying knowledge is converted into internalizing knowledge. Students have more enthusiasm and motivation towards College English learning. Their autonomous learning competence would be stimulated. To think deeply and learn actively could contribute to their competence of analyzing and solving problems. Web-based College English Flipped classroom teaching platform urges students to master basic multimedia network information technology in order to adapt quickly to English learning.

Individualized learning in College English Flipped Classroom seems worth spreading among students. English teaching and managing platform based on multimedia network should embody individuality, humanity, systematization and interaction. Situation and environment would be paid more attention to, and different learners make difference in cognitive level, learning ability, and knowledge structure. Self-adjusting ability is applied to individualized learning. Individual difference and external stimulant contribute to self-reflection, learning strategy, self-evaluation and self-monitor. Individualized guidance of the teacher is more clearly targeted at each individual online or offline. Students' learning goal is more concrete and easy to attain [5]. Learning effect would be more prominent for them.

The form and content of Multimedia could be increased in College English classroom more and more. More paths online and offline should be merged into College English classroom in order to cultivate students' English basic skills of listening, speaking, reading, writing and translation. It is necessary to construct and utilize English teaching platforms based on multimedia. Abundant audios and videos would be made. On one hand, it can arouse students' interests and let them enjoy English learning whole-heartedly. On the other hand, it can help stimulate their senses and learn English more efficiently. Yet, to collect and construct multimedia resources for English learning means a giant challenge for College English teacher. Teachers should exert their efforts to improve their multimedia and information technology urgently. Other multimedia approaches such as the text, picture and flash have enriched College English classroom. But for College English Flipped Classroom, how to utilize multimedia technology online and offline better still needs English teachers' exploration and practice.

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