Research on Mixed Learning Mode Based on MOOCs and Micro Class in Internet Background

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Abstract. In the era of education information and globalization, a new mode of teaching and micro class has emerged in the background of the Internet, which brings new challenges and opportunities to the teaching of the classroom. MOOC has been piloted and applied in many universities in the form of SPOC. As a new form of curriculum, micro-course has been applied to the teaching and learning process. The integration of Moor and micro class resources helps to turn the classroom into a mixed mode. This article will focus on this hot topic to analyse the characteristics of the class, the characteristics of the micro class and the influence on the students and teachers, to improve the quality of teaching and to realize the individualized and active study of the students. The article summarizes the results of blended teaching mode at home and abroad, and explores the development and application of MOOC and micro class resources.

1. INTRODUCTION
With the increasing development of science and technology, the Internet has penetrated into the daily life of people, and also integrated into the classroom teaching in Colleges and universities, especially in recent years, the new resources of education are constantly emerging, which are constantly upgraded with the advent of the information society (Zhang, 2018). A variety of new educational forms, such as mousse and micro class, have also become the mainstream in the reform of colleges and universities. It has become an important topic to be studied and concerned in the Internet education. In the course of computer-based classroom teaching, it is an important problem that we need to think and explore if we can better cope with the new teaching environment.

Under the influence of foreign lessons, all kinds of MOOC platform in China, such as "love course" MOOC platform of China University, Tsinghua University school online, and Peking University's Chinese language courses are constantly emerging, MOOCs in the form of SPOC in a number of domestic colleges and universities to carry out the pilot and application. With online learning as the main way, teaching micro video as the core content, and supplemented to the theme related teaching tasks, teaching activities and teaching resources micro courses, also gradually formed into a form of curriculum (micro curriculum). The combination of "online and offline" combined with "extracurricular classes" has gradually become the direction of the current teaching reform, combining with the learning of class or micro class.
2. THE INFLUENCE OF INTERNET TEACHING IN COLLEGES AND UNIVERSITIES

2.1. Diversity of educational resources
In the era of information technology, the Internet has occupied people's heart in a fast and convenient way, and it also provides a more extensive learning approach for the teaching resources of computer basic class in Colleges and universities. In the traditional teaching mode, the search and reference of educational resources are always based on the library. In the new situation, the Internet provides a more open platform for teachers and students. We can learn and communicate through the school website, and can also open the public lessons on the Internet. Especially in recent years, the rise of "MOOC, micro class" in Colleges and universities has increased the diversity of educational resources and a more systematic learning platform for college students to exchange and share learning experience on this platform (Leach and Hadi, 2016).

2.2 The diversification of teaching mode
The traditional teaching mode always takes the teacher as the main body and carries on the instillation education. The monotonous and dull nature of this teaching mode can not arouse the enthusiasm of the college students and can not arouse their interest in learning. Although the teaching mode is constantly innovating with the pace of the reform of the educational system in China, the initiative of the teachers in the hands of the class has influenced the cultivation and development of the creative ability of the college students. In this era of network, only let people fully grasp the knowledge of computer theory, ensure the convenience of the network, and the sharing, dissemination and creation of knowledge on the platform of the Internet, so that students can give full play to their logical thinking ability. Make full use of the advantages of the network to search for the resources needed, and promote the development of the teaching model from the original rigid, single to diversified and new situation. A mixed teaching model is shown in Figure 1.

![Figure 1. Mixed teaching model](image)

2.3. The challenge to the traditional teaching
(1) Challenge traditional learning ideas and ways
The autonomous learning mode of MOOCs and micro class changes the main position of teachers as a teaching activity and enables students to become the main body under the guidance of teachers.
Independent study before class, make full use of the network resources, MOOC and micro lessons to study self-study. In class, the teacher will sort out the knowledge of self-study, help students absorb knowledge points, check self-study situation, arrange homework and so on, and achieve interaction.

(2) Challenge traditional teaching methods and means

The traditional blackboard plus chalk and slide projection teach a teaching model, which lacks the interaction link, does not have repeatability and cannot meet the needs of the teaching. In the internet background, the new mode of teaching and micro lesson has become another way for students to acquire knowledge. Network knowledge can be learned, but the good and bad, teachers can be screened first and then recommended, let students learn before class self-study, class combing, after class inspection and exchange of knowledge. Teachers, as gatekeepers and guides, can also make their own moody and micro lecture content uploads according to their characteristics.

(3) Challenging the teaching skills of traditional teachers

In traditional teaching, teachers need basic knowledge of chalk as well as professional knowledge. In the background of the Internet, we need to master the skills of combining teaching and understand modern information technology. In addition to the use of the network, we should also learn to use various new equipment, make video, master the methods of making mousse and micro courses. It is necessary to supervise and guide the students to study on the Internet, and to connect with students' WeChat.

3. A REVIEW OF THE RESEARCH ON MIXED TEACHING MODEL

Bishop et al. Proposed that flipped classroom is a technology that includes classroom interaction group learning activities and extracurricular computer based individualized teaching. In particular, it is a kind of teaching form in which the students watch the video explanation created by the teacher and complete the pertinent practice before the class, and the teachers and students can communicate with each other in the face to face and carry out the topic discussion under the guidance of the teacher or finish the homework to solve the problem promoting learning (Zhang et al., 2015). The overturned class is guided by the educational thought marked by mixed learning. It fully draws on a new "hybrid learning style" based on the two concepts of "interaction and feedback" and "online learning community", which are formed on the basis of "interaction and feedback" and "online learning community".

3.1. A study of mixed learning

With the concept of mixed teaching model, Singh & Reed (2001), mixed learning is a "appropriate" learning technique that matches the "appropriate" learning style that matches the "appropriate" learning style in the "appropriate" time, and delivers the "appropriate" ability to the "appropriate" learners and the way to achieve the best learning goal. He believes that mixed teaching is a way to combine the advantages of traditional learning methods with the two advantages of digital or network learning to make the learning effect optimal. Teachers can play the leading role in guiding, inspiring and monitoring the teaching process, and students participate in the learning process actively, actively and creatively, giving full play to the role of the main body.

The United States Josh Bersin believes that hybrid learning design consists of four processes: identifying and defining learners' needs, making learning plans and measuring strategies based on learner needs and characteristics analysis, determining the development or selection of learning content based on mixed learning implementation requirements, implementing plans, tracking processes and measuring results. Accordingly, Li Kedong decomposes the mixed teaching design into eight cycle processes, such as mixed learning goal determination, expected performance setting, transmission channel and media selection, learning design, support strategy, plan implementation action observation, learning evaluation, revision learning and so on.
3.2. Study on the mixed teaching model based on the admiring lesson

MOOCs (Massive Open Online Courses) are a new large-scale online open course for the public in recent years. At present, there are mainly two types of MC: cM00Cs, founded by Canadian scholars in 2008, based on the theory of relevance learning. The other is xM00Cs, which was founded in 2011 by Professor of Stanford University, supported by the platform of three major operators of Udacity, Coursera and edX, whose main theory is behaviorism and cognitive learning theory (Mitros et al., 2014). Compared with cM00Cs, xM00Cs teaching content and teaching methods have a larger "expansion". However, the MOOCs discussed in academic circles generally refer to xM00Cs. In recent years, various MOOC courses have emerged in China.

1) The positive role of blended teaching mode is generally recognized:
2) Expand the time and space of teaching;
3) Enrich the teaching means and enhance the attraction of teaching.
4) Stimulate learners' enthusiasm and autonomy in learning and promote individualized learning.
5) To expand the benefit of high quality education resources;
6) To increase teaching interaction, we can develop "flip classroom" and promote the transformation of teaching content, methods and teaching mode.

The study also believes that MOOC, as a new form of online learning, brings new learning experiences to learners and exposes many problems, such as learning lessons easily lead to learners' difficulty in entering the state of deep learning; and MOOC should be the original intention of colleges and universities, but the actual impact on College Physical Education is very small. In this case, many colleges and universities combined with reality and used SPOC (Small Private Online Course) to transform MOOC, giving MOOC new form and vitality. SPOC is a curriculum education mode that applies MOOC teaching resources to small-scale campus. Its essence is to combine high-quality MOOC curriculum resources with classroom teaching, so as to reverse the teaching process, change teaching structure and improve teaching quality. Chuan Zeng stars have built up a deep learning model composed of SPOC flipping class, DELC (Deeper Learning Cycle) deep learning process, and SPOC support for deep learning.

3.3. Research on mixed teaching model based on micro class

Micro courses, also known as micro courses, are a curriculum model that is small in terms of the traditional teaching mode (the micro class video is generally not more than 10 minutes), the content is short (usually a single point of knowledge or a certain teaching problem) and is supplemented to the teaching resources. According to Professor Li Bingde's teaching classification methods commonly used in the teaching activities of primary and middle schools in China, Hu Tiesheng preliminarily divides the micro classes into 11 types, such as lecture class, question and answer class, heuristic class, discussion class, demonstration class, practice class, experiment class, performance class, autonomous learning class, cooperative learning class and inquiry learning class. The concept of "micro course" was first proposed by David Penrose, a senior instructional designer and online service manager of the College of San Juan, New Mexico, United States, in 2008. He refers to the "micro curriculum" in addition to curriculum content or online teaching short video, but also includes tasks and teaching activities (such as corresponding assignments and topic discussions). In our country, the development of micro class is concerned about the composition of the micro class resources, the attention to the activities of micro class teaching, and the construction of the micro network course (micro video course) in three main stages. The micro course mainly takes constructivist learning theory as the guiding ideology, taking online learning as the main way, teaching micro video is the core content of the micro course. In addition, it also includes teaching design, material courseware, teaching reflection, practice testing, student feedback, teacher review and other teaching resources related to the theme. Li Huifang and other studies suggest that microcourses have promoted the professional development of teachers in the practice of their application, development and reflection, and put forward three practical strategies to promote the professional development of teachers.
Since David Penrose formally proposed the concept of micro lessons and applied them to online courses, micro lessons abroad were widely used in autonomous learning, online teaching, mixed teaching, and distance learning, and achieved certain results, especially in the United States, many primary and secondary schools. Micro lessons have been widely used in flipping classroom teaching (Jiang et al., 2011). Compared to the application of foreign micro-teaching in teaching, the construction of domestic micro-curriculum has just started.

4. ANALYSIS AND THINKING OF MOOC AND MICRO CLASS UNDER THE INTERNET BACKGROUND

Under the background of Internet, "three courses" have emerged in the teaching of computer basic class in Colleges and universities. This kind of change is also caused by the birth of the class, the micro class and the overturning class. It is also the Internet Education in the reform of our educational system. In the era of Internet rule, although the teaching model is injected with fresh blood, it also needs the rational use and infiltration of the teacher, because the magnificent change can not completely replace the traditional teaching. It can only promote the development of traditional teaching mode and assist the promotion of traditional educational means.

4.1. The research and thinking of MOOC

The advantages of MOOCs:

1) First, MOOC is more open, instant and personalized than traditional classroom. It can realize the network classroom of computer basic teaching through the construction of the platform, fully embody its curriculum and the opening of learning, and update and communicate all the contents of computer education in a timely manner. Faced with different quality of students, they can also formulate different learning plans, so that students have the right to freely choose lessons and learn, and then achieve the goal of teaching students in accordance with their aptitude.

2) Second, MOOC's teaching methods are more flexible and convenient than traditional ones. It can set up various teaching methods according to the characteristics of the content of the computer. For example, it can be explained behind the scenes, and can also be taught in the form of real scene to arouse the enthusiasm of our learning. The use of the convenience and flexibility of video production to achieve various teaching functions, to achieve the dissemination and interaction of knowledge content, to bring more opportunities for communication between teachers and students, these are not the campus classroom teaching.

The features of MOOC are shown in Figure 2.

Figure 2. The characteristics of MOOC
Although the Internet era, MOOCs become college student love most, and the number of MOOC users is shown in Figure 3 in 2014-2017 years. But the development of MOOCs in college computer teaching also has certain defects, and can not completely replace the traditional classroom teaching, the need for in-depth reform and perfection.

First of all, although the curriculum is more advanced, the dissemination of the content is more extensive and rapid, but in the use of MOOC teaching, students tend to be led by these “video” without subjective consciousness. Although "watching" occupies the dominant position, it has forgotten the essence of learning, and it will be influenced by many kinds of disturbing factors during the course of learning the lesson.

Secondly, the "death" of the network, after all, is not emotional, all of its information is transmitted through the network, which in a large degree the lack of emotional communication and interaction, more unable to truly replace the positive communication and sharing between teachers and students. In the classroom teaching, the teacher finds that the students are listening to the MOOC, which can be reminded or through various teaching methods to let the students concentrate, but in the classroom teaching, the students can only rely on the self-control of the students, which also greatly helped the students' randomness (Chen et al., 2016).

In addition, the advantage of the Internet has brought great pressure to the MOOC teaching, but it can not be replaced completely, because the scientific and systematic teaching system can carry out comprehensive education and training for college students. The form of MOOC teaching is only suitable for the diversification of the educational model. It can be used as a part of the classroom teaching to improve the students’ enthusiasm and initiative in learning and help them to deepen their understanding of knowledge, but they can not exist independently. Thus, the development of mousse has promoted the transformation of the computer based classroom teaching mode and improved the learning effect to a great extent. As long as it is carried out and permeated reasonably in the class of colleges and universities, the teaching quality can be promoted faster.

4.2. Research and thinking of micro class
The modern society has entered the micro era, and the micro lesson under the network environment has also entered the classroom teaching in Colleges and universities. Micro class and traditional multimedia video teaching is becoming more and more shorter, which can end a learning content with a short time of about ten minutes, and it will not bring the feeling of fatigue to the students. Moreover, the micro class can also achieve multi means and multi form presentation on the computer teaching content, and bring great visual stimulation to college students and improve their subjective initiative in learning. At the same time, the micro class also has its shortcomings, for example, because the micro class is relatively short, the teacher must cut the teaching content and cut it into the essence when
making the production, and the essence is often not enough to let the college students fully understand and absorb, and can not understand and understand the problem deeply. Therefore, when the micro class is used in the teaching process under the internet background, it must pay attention to its rationality and timeliness, and can not take the micro lessons as the main means of teaching, but to carry out a moderate reference. Let him integrate into the 40 minutes of classroom teaching, play a prominent focus and multidimensional role, in order to make the micro lessons fully play its advantages, for college computer based classroom teaching to play a "icing on the cake" effect. In addition, we can make use of the convenience of the micro class to make it an assistant to the students' extracurricular homework, to make better use of the network resources for online learning, to meet the needs of students' independent inquiry, and to improve their awareness of the Internet. The basic resources of the micro class are shown in Figure 4.

![The basic resources of the micro class](image)

Figure 4. The basic resources of the micro class

5. MOOC AND MICRO CLASS RESOURCES DEVELOPMENT AND APPLICATION MODE

5.1. Pattern classification
At present, the development and application of MU-based and micro-curriculum teaching resources can be divided into three modes: the development and utilization of MU-based resources; the development and application of micro-course resources; and the development and application of MU-based and micro-course resources integration (Li et al., 2014). The essence of "integration" and the end result is to make full use of the advantages of resources in MOOCs and micro-curriculums to complement and integrate the two, to maximize the benefits of resources, and to serve the teaching structure of a hybrid teaching "dominant one subject".

5.2. Teaching mode of mob and micro class resources based on blended teaching concept
With regard to the teaching mode of MOOC resources, Li Minghua put forward three teaching modes of MOOC: the first one is the "complete network teaching mode". The second is "network curriculum + student self-help face-to-face interaction model". Students use the virtual community platform provided by the network platform to find the students with the same local interests, especially the
students who have selected the same course at the same time, make up their own learning groups and arrange their own online learning, and carry out face-to-face interaction and interaction. The characteristics of the above two teaching modes are that the students’ learning and the management of the teaching team are realized through network remote operation. It is the mainstream mode of MOOCs teaching at present. But the revolutionary significance of MOOCs lies in the combination of its online courses and the local actual university teaching, that is, the third MOOCs teaching models, “network courses + local university professors face to face depth participation in teaching mode”, or "MOOCs kernel teaching mode". This model uses a mixed teaching team (platform teaching team + local university teachers or tutors), MOOCs is no longer an online course implementation or a few people like online learning methods, and become most of the favorite mixed teaching methods.

The first teaching mode and second teaching modes have high requirements for students' self-learning ability, learning control and resource selection, and the evaluation of their learning results is mainly the realization of the network platform. Compared with the micro courses (or micro courses), the mousse is more systematic, larger, and more open in the form of learning. However, from the learning model, there are many similarities between the micro course and the MOOC. Mogao often advocates the form of "micro video", which is different from the traditional 45 minute online teaching. Both mod and micro courses can be integrated into the teaching resources that teachers and learners can make full use of in the blended teaching mode. The hybrid learning pattern is shown in Figure 5.

Figure 5. Mixed learning model

5.3. The development of the integration of Moor and micro course resources under the guidance of blended teaching philosophy

The main flow of the integrated development and application of mousse and micro lesson resources under the guidance of the mixed teaching concept can be divided into the following stages: the analysis of the requirement of the preceding paragraph, the design of teaching (the objective of teaching, the content of teaching), the design of the platform and the function system, the preparation of the material, the integrated development and production, the trial, evaluation and adjustment of the teaching. Teaching video is the foundation and core resource of MOOC and micro class. The development and application should be mainly from three dimensions of technology, learning content or task and learning interaction, considering different types (special topics or tasks), focusing on the social construction of learners’ knowledge, satisfying the diversity needs of the learners and the convenience of teaching use, and integrating the curriculum and micro lesson resources. In the mixed teaching model, the teaching resources can be divided into online teaching activities such as self-study, discussion interaction, self-testing, and classroom practice. According to the needs, the teaching resources can be arranged flexibly to make the parts connected organically. Teaching resources can be organized in the form of content directory tree, and the fragmented teaching resources are structured,
serialized, hierarchical and systematized. Teachers play a major role in the development and application of the integration of mixed teaching resources. The specific responsibilities include the supply and optimization of teaching resources, teaching design, participation and interaction, curriculum management, student performance statistics and feedback. With the promotion of the construction of intelligent campus and the upgrading and improvement of the teaching platform, teachers can link or integrate the resources of mouse and micro courses into the campus end professional or course teaching platform, and form SPOC teaching resources to support the overturned class on campus. In order to realize the full sharing of teaching ideas, methods and resources, the achievements of the construction of the high quality curriculum resources on the campus can be transmitted to the open teaching resource sharing platform.

6. CONCLUSION

In a word, information education under the background of the Internet has become an inevitable trend in the reform and development of the current educational system, and it will also become mainstream in the classroom teaching. But in practical application, it must be combined with the characteristics of the students to carry out reasonable classroom infiltration. In this way, the advantages of the network can be fully brought into play, so that it will become the engine of the development and innovation of modern education and lead the university into the era of efficient development. The application of the mixed learning teaching model based on the curriculum in the course further trains the students' self-learning ability. Most of the students can combine the teacher's curriculum design with the combination of class teaching and classroom teaching to complete the learning task. The learning effect has been greatly improved than simple classroom teaching. However, this new teaching mode has put forward higher requirements for teachers. Therefore, teachers should increase the mastery of the application skills of network information technology so that they can really effectively promote the reform of higher vocational teaching and improve the quality of higher vocational education.

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