Research on the Teaching Model of "Mooc + Spoc + Flip Classroom" under the Background of "Internet +"

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Abstract: "MOOC + SPOC + flip classroom" is the teaching model of the future university. "MOOC + SPOC" effectively reflects the teacher's teaching of knowledge and thinking. The physical classroom effectively increases the interaction between students and students, and promotes student learning. And exercise initiative. "MOOC + SPOC + flip classroom" combines the advantages of both, and will develop into a more typical teaching model in the future of colleges and universities, promote the improvement of education and teaching quality, and promote it in education and teaching. Therefore, this article analyzes the teaching mode of "MOOC + SPOC + flip classroom", discusses the application advantages of "MOOC + SPOC + flip classroom" in colleges and universities, and proposes the design and application strategy of "MOOC + SPOC + flip classroom".

1. Introduction

With the rapid development of science and technology, especially mobile Internet, cloud computing, the Internet of Things, big data, artificial intelligence, virtual reality and other modern technologies are maturing and rapidly developing, giving human thinking, production, living and learning methods, etc. It has a huge impact, and it is gradually being widely used in the field of education. It has brought new technology and new concepts to education and teaching reforms, and it has also affected students 'learning methods and teachers' teaching methods. The "Thirteenth Five-Year Plan" for National Education Development requires "to fully promote the deep integration of information technology and education and teaching. Teachers are encouraged to use information technology to improve teaching standards and innovate teaching models. Good quality digital resources. "With the advancement of education informatization, the globalization of education resources, the personalization of teaching and the autonomy of learning have become inevitable trends. The rapid development of connected information technology has had a huge impact on the country, society, economy, education, science and technology, and culture. "Internet + education" has also become a mainstream development trend in the development of China's education.

2. The Concept of "Mooc + Spoc + Flip Classroom"

MOOC (MU Course) has risen in the United States since 2012, and entered China in 2013. In order to solve the practical teaching problems of colleges and universities in China, MOOC has been used to form online and offline blended learning. Teacher teaching is combined with student self-learning. , Blended teaching combining high-quality courses from foreign schools and the courses of this college. SPOC is a small-scale restricted online course, which is mainly for internal use on campus. Compared with MOOC, SPOC is limited to open to specific groups. Both SPOC and MOOC are online courses. The flip classroom originated in the United States. In 2007, Jon Bergmann and Aaron Sams used video recording to record courses and share them to the Internet for students who need them. Flipping the classroom is the reverse order innovation of traditional classroom teaching, allowing students to learn new knowledge before class, and then discuss,

practice, internalize, strengthen knowledge in the classroom, and expand the teaching mode of knowledge after class.

"MOOC + SPOC + flip classroom" is a new model that integrates online and offline learning. It combines traditional classrooms, online classrooms (classes that are not restricted by time and space), and interactive classrooms (classes that can be discussed across schools and disciplines). Organically promote student-centered teaching and learning. MOOC and SPOC effectively reflect the teacher's teaching of knowledge and thinking, and the physical classroom increases the interaction between teachers and students.

3. Research Status of "Mooc + Spoc + Flip Classroom"

"MOOC + flip classroom", a new type of teaching mode, has developed rapidly in China, providing a development path for the informatization and internationalization of Chinese universities. Therefore, many colleges and universities in our country have continuously absorbed and borrowed the ideas and methods of the "MOOC + flip classroom" model to promote the education reform of our school. With the development of network technology, "MOOC + flip classroom" will have better and better development prospects. However, for university education, the open MOOC for the society is not completely suitable for the teaching activities of college students. There are certain differences between social students and school students, and teachers have certain limitations in management, so " SPOC + flip classroom "new teaching mode. During the operation process, the Love Course platform established by China University Mu Kewang added new functional modules such as the introduction of student lists and teacher permissions to support and assist the operation of SPOC courses. MOOC's audience is mainly social students, emphasizing the sharing of high-quality resources, while SPOC is mainly open to school students and emphasizes student management. By combining the advantages of MOOC and SPOC, it can solve the differential teaching of different levels and different student bases, so the "MOOC + SPOC + flip classroom" teaching mode has appeared. At present, more and more colleges and universities have begun to adopt the new teaching mode of "MOOC + SPOC + flip classroom" and conduct teaching research.

MOOC originated in the United States and swept the world in just a few years. As of August 2017, the number of MOOCs worldwide is as high as 6,000. The University of Queensland's David pointed out that the development of MOOC is like a tsunami, sweeping the world, is a shock to global university education, and a symbol of entering the era of online education. Combining high-quality MOOC and flipped classrooms will help improve the quality of teaching and develop curriculum content. MOOC-based flipped classrooms use the Internet and digital innovation to reconstruct the learning content outside the classroom. In 2012, Stanford University opened the first materials science course, "Materials Science," based on the "MOOC + flip classroom" teaching model. In 2013, the University of California, Berkeley also began to apply SPOC to the teaching of "Cloud Computing and Software Engineering." In the same year, Harvard University used SPOC to carry out teaching practice on three courses, and achieved good reputation and student recognition. Professor Jamie Henri conducted a practical study of the MOOC + SPOC + flip classroom teaching mode at Bunker Hill Community College, using MIT's "Python Computer Programming Language" curriculum resources to carry out teaching practices on the edX platform. At the end of the term, more than 50% of the students insisted on completing their studies with an average grade of B. Professor Jamie Henri believes that the college's student base is weak compared to the MIT student base. Using high-quality teaching resources can help The college has achieved good teaching results. The development of "Internet +" technology has promoted the promotion of the "MOOC + SPOC + flip classroom" teaching model. More and more universities at home and abroad have begun to use this teaching model for practical research in order to improve the quality of teaching and promote the development of education.

4. Construction of Teaching Mode of "Mooc + Spoc + Flip Classroom"

4.1 Teaching Preparation Before Class.

Under the modern education model, an education model of "teacher-oriented and student-oriented" should be promoted. Based on the learning of the flipped classroom, the initiative of the students should be brought into play. Therefore, before carrying out flipped classroom learning, it is necessary to understand the specific situation of the students and design a classroom teaching mode suitable for the students' learning. According to the talent training plan of each specialty, the design of specific learning goals combined with the syllabus is an indispensable link to ensure the quality of teaching. In the implementation of the SPOC curriculum, the overall teaching objectives of the course must first be designed according to the syllabus, and each unit or each section of the specific small objectives should be designed in accordance with the general objectives, and this level of decomposition should be used to ensure that the teaching objectives are achieved. The learning content of the learner is complex, and the knowledge covered is extensive. Therefore, the teacher must conduct a specific analysis of the specific learning content, conduct a preliminary review of each part of the learning content, and find a suitable teaching method. Different teaching contents should be matched. Only by using teaching methods can we achieve more results with less effort, thereby more effectively promoting the successful completion of the teaching goals.

The learning environment, as an indispensable condition for the development of learning activities, greatly affects the learning effect, as well as the teaching based on "MOOC + SPOC". For online learning environments, the most important are MOOC and SPOC learning platforms. The platforms should be easy to learn, easy to operate, and able to effectively support teaching activities. For students, the platform function and interaction design should meet the learning needs. In terms of learning resources, see if you can quickly upload resources such as videos, PPT courseware, literature, and software, and whether you can play and browse smoothly. In terms of interaction support, effective and timely interactions must be achieved between teachers and students, and between students and learning resources. In terms of functional support, does the platform have an automatic scoring function for tests and assignments, record and monitor learning behaviors, and send messages or emails to remind you to complete related learning tasks, submit assignments, complete test. The offline learning environment should provide classrooms for students to conduct group discussions, collaborative learning and inquiry learning, and computer classrooms for students to conduct online learning and experiments.

4.2 Resource Design.

With the rapid development of MOOC at home and abroad, MOOC courses are not only increasing in number, but also becoming more complete in curriculum design, production, and interaction mechanisms. Facing such a rich MOOC curriculum library, teachers must start from In terms of aspects, we must first analyze the curriculum. The major learners targeted by the curriculum need preparatory knowledge, the teaching objectives and content system of the curriculum, and the teacher's teaching style. Next, from the perspective of the school's teaching planning, the school's talent training plan is developed. , The teaching objectives of this course, the scheduled lessons. It is also necessary to analyze the knowledge reserve and cognition level of our students. Online resources mainly include short videos, PPT courseware, related documents, supplementary materials and extended materials. Offline resources are mainly reference materials and experimental designs. The reference textbook is provided as a supplement to online learning. The textbook will contain different knowledge points from the video. Students who are interested in this course can expand their knowledge and knowledge, and lay a solid foundation for future learning. A review of resources.

4.3 Implementation of Teaching Activities.

Before the lesson, the teacher releases relevant information about the course on the SPOC

platform course homepage, including course overview, class hours, instructors, course start and end time, course content update cycle, unit test deadline, in addition, course assessment methods and scoring standards, and preparation Knowledge, teaching unit content, knowledge points of each chapter. By browsing the course announcement, students can choose the course they want to study, and if they meet the entry requirements, they can choose the course. At the same time, the teacher will upload the learning resources of this week one week before or before the start of the class. Generally, there are short videos (including lectures), PPT courseware, reference documents, websites, discussion topics, etc. Students are free to choose the time and place according to their daily lessons and time schedules, and study according to their habits and preferred learning methods. Due to the intelligence and portability of mobile devices, the coverage of wireless networks on campus is also increasing, and mobile learning

Became the main way for students to learn. In the course of learning, you can ask the teacher and peers for help at any time through the discussion area, and the teacher can also gain knowledge from it. At the same time, the content of the course is also constantly enriched.

4.4 Classroom Flip Instruction.

The classroom is a stage of internalizing knowledge. It is student-centered, problem-based, and inquiry-driven learning. It is necessary to encourage students to develop the habit of exploration and innovation. It mainly includes the following links: (1) Teacher-student communication and interactive Q & A. The teacher discusses with the students about the problems they have reflected in the forum, and summarizes the results of the discussion. This interaction has narrowed the distance between students and students, and between students and teachers. (2) Group discussion. Class students are divided into groups, and questions are set up for the difficult and difficult points in the chapters. Then the students discuss the problem in the form of groups. After the discussion, one person reports and discusses in the whole class. Finally, the teacher makes further explanation and knowledge. to sum up. (3) Individual counselling. For students whose learning progress is slow or difficult to learn, teachers need to provide individual guidance to help them build self-confidence and master the skills and methods for learning this course. Students can also ask the teacher questions that are not answered during the pre-class study, homework or experiment. (4) Results display. In the classroom, the results of the experimental homework are displayed. Students give their results through self-evaluation and mutual evaluation. The teacher gives guidance on problems that arise in the homework, and praises and encourages the outstanding homework.

4.5 Teaching Evaluation.

The teaching evaluation under this mode adopts a variety of evaluation methods. Once the traditional "final exam + homework" evaluation method is changed, it will be evaluated throughout the entire learning process. The online assessment is based on the indicators of watching videos, participating in discussions, completing tests, and submitting assignments, and the offline assessment is based on the indicators of classroom communication, experimental assignments, and group collaboration. , Organically integrate process evaluation and summary evaluation.

5. Conclusion

The rapid development of various new learning platforms such as SPOC and MOOC and large-scale online open courses on a global scale has further increased the learning autonomy and motivation of students, broadened the time and space of teaching, and further enhanced the scope of teaching. The attractiveness of teaching, meanwhile, is also conducive to continuously expanding the benefits of global quality education resources. The innovation of technological means brought by the Internet technology has brought more opportunities for the innovation and reform of higher education and teaching. It also makes the development of higher education teaching face many challenges.

Acknowledgements

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