

Teaching Strategy of Rock Climbing Flipped Classroom Model Based on MOOCs Perspective

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Abstract: *With the advent of the era of the Internet of everything, it is an important task for Chinese education to continuously promote quality education and the modernization of education. The emergence of flipped classroom and the rise of MOOCs have opened a window for the modernization and innovation of rock climbing sports skills teaching. The application of the MOOC-based flipped classroom in the teaching of rock climbing skills is a modern revolution in the field of physical education and an important way to complete educational innovation. Because the teaching of rock climbing sports skills is of sports practice, pure MOOCs teaching cannot meet this feature. The PE flipped classroom based on MOOCs came into being. It can not only promote the modernization of physical education, but also ensure the teaching effect teaching model. This paper adopts research methods of literature and experimental, and mainly focuses on the application of MOOC-based flipped classroom in the teaching of rock climbing skills. The differences between students and their learning progress are flexibly adjusted to meet the individual needs of students to the greatest extent, stimulate students' enthusiasm for learning, make the entire teaching process more rational and scientific, and improve teaching efficiency.*

Keywords: *rock climbing, MOOCs, flipped classroom*

1. Introduction

With the rapid development of China's economy and society and the continuous improvement of people's living standards, outdoor leisure sports have gradually developed into a way of physical fitness, recreation and relaxation in people's daily life. Among many leisure sports, rock climbing attracts more and more people to participate in it because of its trendy, fashionable and adventurous features. The pace of the education system has also been gradually accelerated. In the context of the new era, the flipped classroom is a product of modern development, and Internet technology is an important support for the implementation of the flipped classroom: teachers send teaching videos made by themselves or other teachers on the Internet to students through the learning platform, so that students can guide to complete the pre-class learning tasks. The emergence of the teaching model of flipped classroom is widely used in theoretical subjects, and is less used in practical courses such as rock climbing, but the emergence of this teaching mode also makes the combination of Internet and physical education classrooms to become possible. The flipped classroom teaching model innovating the process of rock climbing sports skills teaching classroom, makes the connection between before, during and after class more closely, and prolongs the actual teaching and learning time of teachers and students. In this teaching mode, physical education teachers need to make small videos according to the teaching content of each class. The production of small videos should be simplified, and the explanation of the content of a class should be completed within 5 to 10 minutes in a short and clear manner[1]. The level of each physical education teacher is uneven, and the quality of the short videos produced is also high and low. Most of the learning videos in the rock climbing MOOCs are high-quality teaching videos carefully produced by teachers from well-known universities. When the teaching mode of flipped classroom has just had an influence in the field of education, MOOCs, which are "the biggest innovation in education since the invention of printing [2]", began to sweep the field of Chinese education, not only the MOOCs of theoretical knowledge of various disciplines appeared courses and several courses of PE MOOCs have also come out one after another in this revolution. The innovation of MOOCs is fierce and has the ambition to subvert the traditional PE teaching classrooms. Promoting the modernization of education has always been an important part of the development of China's education. This form of education, which is embedded with modern advanced technology, promotes the continuous development of China's education.

2. MOOCs and flipped classroom

2.1 MOOCs

MOOC, the term was proposed in 2008 by the Director of Network Communication and Innovation at the University of Prince Edward Island, Canada, and a senior researcher at the National Institute of Humanities and Educational Technology Applications Large-scale open online courses. M stands for Massive, large-scale, MOOC can be chosen by many students, the number of which can reach more than 10,000 people, and the learning scale is large. The first O stands for Open, motivated by their own interests and needs, anyone can register an account to learn. The second O stands for Online, online, as long as there is Internet, you can learn without time and space limitations. "C" stands for Course, which means course.

(1) J R Chen expounded in his article that the Internet has become a new resource and a new place for education. In the context of the development of the times, MOOCs have become a new educational environment. In the educational environment of MOOCs, participants around the world can further share their educational resources on this platform, and as long as people have the Internet around, they can learn by requesting to participate in MOOCs[3].

(2) M Tang expounded in her book that the emergence of MOOCs, a new thing, will bring a revolution to the education field, which is known as "the greatest innovation in education since the invention of printing", and is taking over the education of countries around the world field. This revolution in the field of education triggered by the emergence of MOOCs may have an impact on us no less than that brought about by the Industrial Revolution[4]. It is a challenge to the traditional teaching model, and it also changes the way of talent training, and its impact on the future national competitiveness should not be underestimated. "Anyone, at any time, anywhere, can learn anything." The concept promoted by the MOOC means that no matter where you are or how much fragmented time you have, as long as you have a mobile phone or a computer, connect to the network, you can learn the knowledge you are interested in and want to learn. MOOCs not only bring people the best teaching resources, but also the most essential things in the differentiation, optimization and return to education of educational resources. In the era of MOOCs, education can achieve fairness at the greatest level.

(3) Stephen Haggard, B H Wang, X L He and others expounded in their articles that the emerging product of the MOOCs era is maturing, and its importance, popularity and expansion have always been recognized by the academic community, countries in many regions around the world have shown very strong enthusiasm for participation and professional demand[5]. In the future development, universities will face the opportunities and challenges brought by MOOCs. How to grasp the opportunities brought by MOOCs and how to deal with the challenges brought by MOOCs will bring a lot to the innovation and survivability of university education shock.

(4) B L Cai and others pointed out in their article that with the continuous development of mobile Internet technology, a kind of personalized teaching that pays attention to students' personalized learning needs has emerged [6]. This is a flipped classroom teaching mode based on MOOCs. In this teaching mode, it can make up for the inconsistency of students' learning progress in the classroom. Students can study in their spare time through the MOOCs platform, focusing on the indigestion in class. Absorb or digest knowledge that is not well understood. To a certain extent, this also improves the teaching efficiency of teachers and the learning efficiency of students, and is more conducive to the realization of teaching goals.

Combined with the research of many scholars, it can be seen that the emergence of MOOCs has brought about an educational revolution. It provides a convenient learning platform for students and even the community, forming a brand-new educational environment for the smooth and efficient development of education to offers more possibilities.

2.2 Flipped classroom

Flipped classroom originated from Woodland Park High School in the United States. Colorado is located in a remote area[7]. Due to the limitation of living conditions, local students often can't get to school on time or even miss classes for a long time. In order to help students finish their studies on time, two teachers of the school first thought of uploading teaching videos to the Internet so that students can watch the learning process by themselves and help them master the teaching progress in time.

At present, the flipped classroom mode is further defined, which is that teachers make video courseware in advance, students study at home before class, teachers and students communicate on the problems in the video in class, and complete a variety of effective classroom practice teaching forms. In the flipped classroom teaching mode, teachers are no longer bound by textbooks and courseware, and have more energy and time to know the teaching progress, explain and learn specific problems. The flipped classroom teaching mode does not give the learning task to students, but emphasizes the dominant position of teachers. The teaching process of flipped classroom is inseparable from teachers. Teachers are always ready to help students answer questions. Compared with traditional teaching mode, flipped classroom model has four characteristics

(1) The change of the roles of teachers and students. Under the flipped classroom teaching mode, the teacher transforms from the knowledge transmitter to the student's learning instructor and promoter. Students, as "listeners" and passive receivers of teachers' explanation in class, are transformed into autonomous learners. Flipped classroom mode is a teaching process in which students are the main body of learning.

(2) Teaching process. Flipped classroom teaching process is that students learn content in advance and finish their homework in class. In other words, in the flipped classroom teaching mode, the absorption and understanding of knowledge is completed by students watching the teaching video before class, and the digestion of knowledge is completed through the discussion.

(3) Teaching environment. Flipped classroom teaching mode provides a good learning environment for students, they no longer rely on teachers to give lectures in class, but through the teaching video, teaching media and other courseware provided by teachers for autonomous learning before class. For the weak learning ability of students, they can read the content of this class in advance before class, and then the class can follow the teacher's explanation. For students with strong learning ability, when teachers explain what they have understood, they can learn more about what they do not understand. For these two types of learning, you can adjust your learning progress according to your own learning situation.

(4) Teaching resources: The flipped classroom teaching model is that all teachers unite and adopt unified teaching to formulate teaching plans, study, discuss and record video together, and realize the sharing of educational resources for the whole grade. For a specific topic, the teaching video is usually about 10-20 minutes. Through the collective lesson preparation, we can strengthen the communication and communication between teachers, and make the recorded course content, difficulty and class type design more perfect. Teaching resources are open to all teachers and students.

3. Experiment and result analysis

3.1 Comparison of rock climbing learning attitudes

Before and after the experiment, the mixed teaching of the MOOCs and flipped classroom rock climbing classes was investigated: rock climbing learning attitude. Compare the data from each set of experiments and analyze the results. The preferences of the groups in the study are shown in Figure 1:

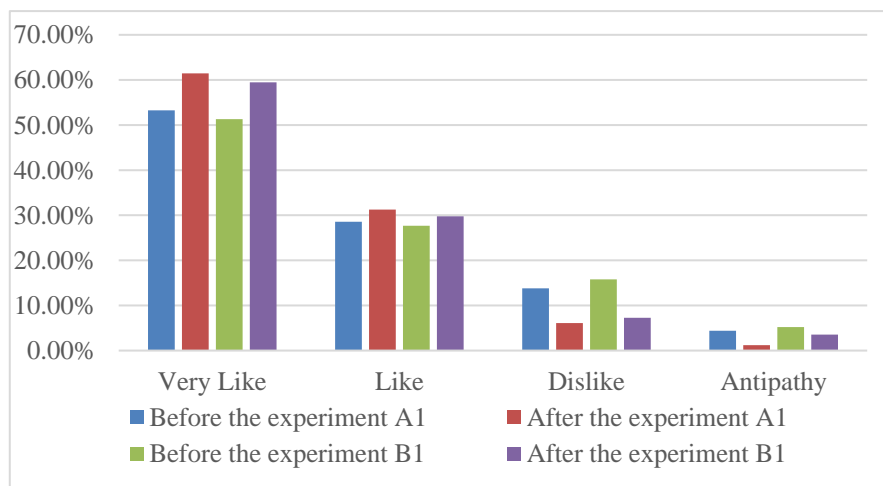


Figure 1. Comparison of acceptance of rock climbing among key groups

It can be seen from the figure that after this experiment, the acceptance of rock climbing in each group has been improved. This combination increases the interest of the classroom and further improves the acceptance of rock climbing by students, which not only improves the quality of teaching, but also enhances the fun of sports communication brings positivity. After the mixed teaching of rock climbing with MOOCs and flipped classroom, the proportion of group A1 and group B2 who hated rock climbing decreased by 3.2% and 1.68%, respectively. The mixed teaching of rock climbing combined with the concept of MOOCs and flipped classroom can stimulate students' interest in learning rock climbing more than ordinary teaching.

3.2 Comparison of rock climbing results in the final exam of 24 classes

The final exam results of groups A1 and A2, B1 and B2 are shown in Table 1:

Table 1. Final examination results of 4 classes

Number of people	Class size	Above 130 points	110-130 points	100-110 points	90-100 points	Less than 90 points	Average
A1	55	10	20	15	7	3	115.65
A2	54	6	15	16	11	6	104.78
B1	54	9	19	12	10	4	109.65
B2	55	5	15	21	10	5	102.45

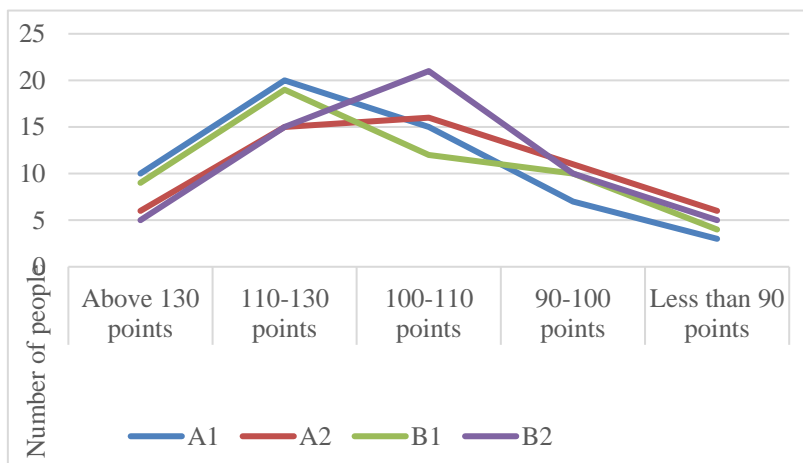


Figure 2. Number of students in different classes

As shown in Table 1 and Figure 2, this curriculum reform takes rock climbing as the driving force and practical operation as the link, and integrates the rock climbing curriculum into the comprehensive curriculum group. The relevant knowledge points and skill points of rock climbing sports are organized in an orderly manner according to the development process, combined with teachers' macro-thinking advantages, teaching experience, technical advantages and outdoor equipment support to escort rock climbing sports, fully connect inside and outside the classroom, mobilize students' subjective initiative, let Students gradually understand and master rock climbing sports technology in sports practice. While improving rock climbing sports skills, we should have a deeper understanding of the logical relationship between professional knowledge, build professional thinking ability, and lay a solid foundation for lifelong sports development.

4. Conclusion

With the development of the Internet era, compared with the traditional rock climbing teaching, the flipped classroom based on MOOCs can promote the fairness of interaction in the teaching of rock climbing skills. Without changing the nature of rock climbing sports skills teaching, the roles of physical education teachers and their teaching methods are more diverse, students' learning methods are more autonomous, and the evaluation indicators of teaching effects are more comprehensive. The flipped classroom teaching of rock climbing based on MOOCs can bring students a richer learning experience, effectively improve the quality of rock climbing teaching, and improve students' motor skills. Therefore, it is recommended to promote the flipped classroom teaching of rock climbing based on MOOCs to more schools, to promote the modernization and innovation of rock climbing teaching.

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