

Empirical Research on SPOC Teaching in College Sports Course Reform: A Case Study of Basketball Courses

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Abstract: With the rapid development of the Internet and information technology, especially during the pandemic, various forms of online teaching, such as MOOCs, SPOCs, live streaming classes, and micro-courses, have emerged like mushrooms after rain. These new methods have injected fresh vigor into higher education, adding new teaching models and enriching the teaching content. The blended online and offline teaching mode has gained widespread recognition and become the mainstream trend of teaching reform. College sports courses are receiving increasing attention, and the reform of college sports education has also attracted a lot of focus. The traditional teaching model now faces new challenges.

1. Introduction

The Outline of the National Medium and Long Term Education Reform and Development Plan (2010-2020) emphasizes "driving education modernization with informationization", and the Ten-Year Development Plan for Education Informationization (2011-2020) clearly puts forward "building an informationized learning environment with high-quality resources for everyone, and truly realizing the deep integration of information technology and education and teaching".

2. Feasibility Analysis of SPOC Teaching in College Sports Course Reform

In recent years, the rapid development of MOOCs has attracted widespread attention from scholars and has had a significant impact on higher education. However, due to various issues such as high dropout rates, incomplete learning experiences, and lack of teaching interaction, many new forms of learning, such as SPOC, MOOL, and MOOR, have emerged. Among them, SPOC, characterized by its niche and restricted access, is an online course format that many universities at home and abroad are experimenting with. SPOC (Small Private Online Course) is a derivative of MOOCs. While MOOCs are known for being "massive and open," SPOCs are characterized as "small-scale and private."^[1]

2.1. Emphasizing Student-Centered Learning to Promote Comprehensive Development of Students' Skills

In traditional college sports teaching, teachers are seen as the dominators of education and the

holders and transmitters of knowledge (including sports knowledge), while students are passive recipients of this knowledge. This teaching model does not reflect the students' role as active participants, and there is a need to enhance their overall competencies and skills. College sports SPOC teaching is a "fragmented, interactive, learning-oriented course that uses video as the medium." Video content is modularized, with knowledge points organized around specific problems and used to conduct teaching. Fundamental sports theoretical knowledge is organized into coherent knowledge points according to their internal logic and relationships. These are then recorded as videos or other online teaching materials, featuring explanations, demonstrations, and practice methods by the instructor (lasting 5-10 minutes each), and uploaded along with teaching outlines and instructional designs onto the SPOC system platform for registered students to view, study online, or download independently. Finally, through traditional classroom teaching, students' learning outcomes are summarized, and learning experiences are exchanged. Students can discuss unsolved problems and deepen their understanding of the course content. In this "course model," teachers are no longer the primary controllers but act more as course initiators and coordinators.^[2]

2.2. Changing Traditional Sports Teaching Concepts and Methods to Promote Teaching Reform

In traditional college sports teaching, teachers' explanations and demonstrations are the primary methods, followed by students imitating these actions, practicing, and receiving corrections from the instructor. This single teaching method makes it difficult to maintain students' interest, and the teaching outcomes for classroom-based courses often fall short of expectations. On the SPOC learning platform, learning resources are abundant, and learners can make autonomous choices. Through the display of videos, audio materials, and other resources on the platform, teaching content can be presented more intuitively, allowing students to better absorb knowledge points. For example, in traditional classroom teaching, sports teachers typically rely on physical demonstrations to deliver content. Students, in turn, learn by observing and imitating these movements. However, the shortcomings of this traditional teaching method are evident; not every teacher can achieve perfect movement demonstrations. This discrepancy can lead to learning variations among students, making it difficult for teachers to gauge students' actual levels accurately. In contrast, online learning allows students to review movements in slow motion and in sequences, leveraging online tools to capture essential points of the actions. This requires both learners and instructors to change traditional mindsets and methods. Learners' study methods shift from passive reception of knowledge to active, self-directed, and exploratory learning. The teaching process changes from traditional lecturing and demonstration to an organized, guided, and supportive process. Increased teacher-student interaction fosters students' personalized development during classroom instruction and improves the overall teaching effectiveness.^[3]

3. Advantages of SPOC Teaching in College Sports Course Reform

SPOC teaching is a teaching model that utilizes online platforms, resources, technologies, and teaching methods, combined with theoretical applications, to support classroom teaching. This emerging teaching model overcomes the drawbacks of traditional teaching methods while integrating the strengths of existing online teaching models, posing higher demands on teachers' teaching design, objectives, tasks, evaluation, feedback, and more. Currently, this teaching model is applied in a limited number of courses, with interactive learning being its biggest advantage. Students shift from passive knowledge absorption to active participation. Teachers can even empower students to design course units, which maximizes their practical skills and enhances their enthusiasm and engagement.

Taking basketball teaching as an example, basketball is a traditional sport in college physical education and one of the most popular elective courses. With the popularization of basketball education, the teaching of this sport is starting to target younger students, and its promotion in social sports is also significantly higher than that of other courses. The promotion and popularization of basketball not only require rational course design but also demand that basketball education adapts to new circumstances. Currently, most basketball courses still rely heavily on traditional teaching models. Many instructors continue to adhere to conventional approaches, lacking innovation and reflection. Simplistic action-based teaching and superficial theoretical dissemination provide little benefit to basketball instruction. However, the advantages of SPOC teaching precisely address these issues and present new challenges to traditional basketball teaching. SPOC teaching integrates the strengths of conventional basketball education while incorporating more interaction and engagement in the teaching model. It fosters a positive learning environment between instructors and students, breaking free from the constraints of traditional basketball education. The role of teachers shifts from being mere knowledge transmitters to course facilitators, greatly enhancing student participation and stimulating their interest in and motivation for learning basketball.^[4]

4. Structure of SPOC Teaching Content

The advantage of SPOC teaching in basketball courses mainly lies in the structure of the teaching content. The structure of the teaching content in college basketball courses directly impacts the realization of course objectives and the evaluation of teaching effectiveness. In the current traditional teaching model, the structure is still based on a dichotomy between teachers and students. Basketball is an interactive and communicative sport with intense competition, requiring students not only to master the basic skills of basketball but also to develop team cooperation, mutual understanding, and collaboration. In the traditional teaching model, learning is not yet fully interactive, and independent learning is not adequately promoted. Utilizing the advantages of SPOC teaching in basketball courses is essential. Through the use of SPOC teaching, teachers can comprehensively integrate resources and reorganize and arrange video resources for teaching. Students can systematically watch videos and engage with the interactive content. Through the theoretical knowledge of basketball and practical skills demonstrated in the videos, students complete the instructional tasks and are then evaluated on their learning outcomes.

Traditional basketball courses in China not only place higher demands on students' skills but also emphasize how teams collaborate and divide roles. Basketball is not an individual sport but a collective effort. For example, in traditional basketball classes, when it comes to dribbling skills, the conventional approach requires students to repeatedly practice on the court to achieve continuity and coordination of movements. This mechanical repetition is often tedious for students. However, under the SPOC model, students can not only learn the techniques through video tutorials but also observe how players pass and dribble during real games. This interactive learning fosters independent learning, fundamentally transforming students' roles from passive recipients to active participants, which cannot be achieved through traditional teaching methods.^[5]

The basic structure of a flipped basketball class using the SPOC model is similar to that of traditional basketball courses, including the beginning, preparation, core, and ending parts. To help students achieve course objectives and truly master basketball knowledge and skills, in the core part of a flipped volleyball class using the SPOC model, students are first required to explain and demonstrate, with teachers offering guidance and feedback. The flipped classroom teaching method not only eliminates the limitations of time and space in traditional teacher-led demonstrations but also allows students to integrate pre-class visual learning of technical movements with classroom

activities, thereby improving the efficiency of skill practice. This is the key difference between the SPOC flipped basketball classroom and the traditional classroom.^[6]

5. The Confrontation Between SPOC Classroom Teaching Model and Traditional Teaching Model

The primary purpose of this research is to explore how to introduce high-quality online learning resources, such as MOOCs and micro-courses, into physical classrooms, and to establish a teaching model for college sports courses based on SPOC principles. This model not only provides diverse course resources for students but also optimizes teaching activities and enhances the effectiveness of the existing traditional learning model. By creating more learning opportunities and personalized learning conditions, this model cultivates students' abilities for independent learning and collaborative exploration, ultimately improving learning efficiency and teaching outcomes.

From a research perspective, previous studies on college sports course reform have mainly focused on traditional classroom teaching, including teaching content, teacher quality, target students, educational environment, and teaching methods. With the development of MOOCs, research combining MOOCs with college sports teaching has proliferated, and scholars have increasingly focused on the educational impact and teaching reform. This study systematically examines college sports teaching by integrating traditional classroom teaching and MOOC teaching through the SPOC model from a new perspective, enriching the research landscape of college sports course teaching.

From a research content perspective, previous studies primarily explored the value and impact of SPOC teaching on college sports courses or studied teaching design and evaluation independently. This research delves into the theoretical foundations of SPOC teaching and comparatively analyzes its advantages to strengthen the case for integrating SPOC teaching into college sports courses. It addresses three main aspects: teaching design, teaching implementation, and teaching evaluation. Each aspect closely aligns with the unique characteristics of college sports courses. While ensuring that the teaching of college sports courses remains true to its essence, this research provides a comprehensive and systematic theoretical framework for applying SPOC teaching to college sports courses.^[7]

6. Evaluation of the Teaching Effectiveness of Physical Education Based on the SPOC Classroom Teaching Model

We conducted an evaluation of the teaching effectiveness using the basketball course option under the public sports curriculum, selecting two parallel classes from the 2020 cohort of the Civil and Architectural Engineering major.

Classes 201 and 202 (total of 50 students) were designated as the teaching reform group, while Classes 203 and 204 (total of 50 students) were designated as the traditional teaching group. The basketball instructor for both groups was the same person, responsible for the classroom design. Classes 201 and 202 adopted the SPOC classroom teaching model, while Classes 203 and 204 followed the traditional teaching model.

After one semester of basketball teaching, a comprehensive evaluation of the teaching effectiveness was conducted for both parallel groups:

1) Pre-Class Evaluation

The content of the evaluation focused on students' online learning status and level of participation before classes. This involved recording the number of learning sessions, duration of learning, number of questions asked, exercises completed, and discussions held on the SPOC platform, forming a learning profile for each student.

2) In-Class Evaluation

Evaluation was based on teaching quality and students' learning outcomes. One source of evaluation was students' regular grades, which were documented through a teaching activity record sheet that tracked student participation, learning performance, quiz results, and experiment operations in class. Another source was the final exam scores. A combination of these two scores formed the basis for formative assessment.

3) Post-Class Evaluation

A comparative analysis of the exam scores between students in the reform group and those in the traditional teaching group revealed that the final exam scores of students in Classes 201 and 202 were significantly higher than those of students in Classes 203 and 204. Interviews and questionnaires were conducted to investigate online learning, classroom effectiveness, and existing problems, thereby comprehensively assessing the teaching effectiveness. A total of 100 questionnaires were distributed, and all 100 valid questionnaires were recovered. The survey focused on improvements in five areas: learning interest, teamwork, critical thinking, research quality, and mastery of new knowledge. Results showed that the teaching effectiveness of Classes 201 and 202 was significantly better than that of Classes 203 and 204.^[8]

7. Conclusion

The flipped classroom teaching model for basketball courses based on the SPOC framework is conducive to improving students' basketball skills. In terms of enhancing basketball techniques, the task-driven teaching approach of SPOC shows a more significant positive impact. The SPOC-based flipped classroom teaching model also has a positive influence on improving students' learning attitudes. The task-driven teaching approach of SPOC is superior to traditional teaching in enhancing students' learning motivation, learning process, and learning outcomes, demonstrating positive teaching effectiveness. Students have given positive feedback on the task-driven teaching model based on SPOC. They acknowledged the teaching resources provided by the online platform and the practice tasks designed for the class. Furthermore, students believe that the task-driven teaching model of SPOC plays a role in stimulating interest in learning, improving learning efficiency, and enhancing self-learning capabilities.

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