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Research on the Application of the "Learn through Competition, Promote Learning through Competition" Teaching Mode in the Teaching of Sports Anatomy

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Abstract: *Sports anatomy is a compulsory course in the field of sports, which plays a crucial foundational role in subsequent specialized studies. However, for students majoring in physical education whose athletic abilities surpass their theoretical learning capabilities, mastering this course is quite challenging. This paper strives to implement teaching reforms by establishing a "Learn through Competition, Promote Learning through Competition" teaching model. From a task-driven perspective, the aim is to enhance the intrinsic motivation of students' learning. This shift encourages students to transition from passive memorization of knowledge to actively experiencing and applying knowledge in practice. Through this process, students learn to think critically, improve teamwork and emotional intelligence through communication with team members. Simultaneously, the practical application of this teaching model aims to explore the universality and practical value of the "Learn through Competition, Promote Learning through Competition" teaching model in other courses.*

Keywords: *Learn through competition; Sports Anatomy Course; Teaching Reform*

1. General Teaching Situation of Sports Anatomy

1.1 Course Overview of Sports Anatomy

The course of Sports Anatomy is one of the core subjects in the undergraduate major of Physical Education, belonging to the category of Morphology. As a pivotal course in the discipline of sports human science, it provides students with knowledge of the normal structure of various organs in the human body. The course aims to equip students with an understanding of the characteristic features of the morphological structure of the organs in the motor system, the mechanical movement laws of joints, major muscle groups involved in sports, as well as the fundamental principles of developing muscle strength and flexibility. Through the study of this course, students delve into the anatomical analysis methods of sports techniques, laying the foundation for analyzing excellent athletic movements and devising training programs for developing strength and flexibility. The course places a strong emphasis on exploring the impact of sports on various organs of the human body and their effects on external features. It provides essential knowledge for formulating training plans in sports education, coaching, guidance in community sports, and scientific research in sports science. The understanding gained from Sports Anatomy is crucial for professionals in the field, offering valuable insights for future careers in sports teaching, training, guidance, and scientific research, establishing a solid foundation for these endeavors."[1]

1.2 Problems in the teaching of Sports Anatomy

The complex human systems, relatively independent terminology, diverse forms of movement, and abstract logic within the knowledge framework of the course "Sports Anatomy" pose higher demands on students' memory and understanding. Moreover, the theoretical content of the course is closely linked to the practical application of sports, increasing the overall difficulty of teaching sports anatomy. This leads to some issues in traditional teaching methods: outdated teaching content and organizational forms, relatively singular teaching methods and means, and an incomplete evaluation system for students' comprehensive qualities.[2]

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1.3 Put forward the new teaching mode of Sports Anatomy

Therefore, how to help students truly grasp the knowledge content, and truly achieve the "combination of theory and practice" to solve the above problems has become an urgent problem for teachers to explore.[3] In order to address the aforementioned issues in this course, this paper proposes a teaching model of "learning through competition and promoting learning through contests" based on years of teaching reform practices. The model includes the following steps: assigning problems, group presentations, teacher-led discussions, tackling challenging questions, teacher evaluations, and knowledge competitions. Specifically, before the class, simple knowledge tasks are assigned to groups. At the beginning of the class, groups present their learning results through a random drawing. The teacher evaluates the presentation process, analyzes more complex course content, assigns application-oriented complex problems for group discussions, and provides feedback. Before the end of the class, tasks for the next group presentation are assigned, and a knowledge competition between groups is held at the conclusion of each major chapter. The innovation of this teaching model is reflected in the transformation of the teacher-student relationship. By flipping the classroom, it fully embodies the student-centered approach, moving away from a traditional emphasis on teaching by teachers and learning by students.[4] The "task-driven" teaching mode through group presentations exercises students in pre-class self-study and preparation. The group completes discussion-based teaching tasks, and through horizontal competition between groups, the model emphasizes the dual status of teachers and students as "co-subjects" in the teaching process. This innovative approach effectively addresses the issues mentioned above by organically combining theory and practice.[5]

2. Advantages of the teaching mode of "learning by competition and promoting learning by competition"

2.1 Solving the problem of outdated teaching content

From the perspective of traditional teaching mode, where teachers deliver lectures and students passively listen, there is a lack of interaction and discussion. The innovation in this course lies in the organic integration of theoretical teaching content with pre-class and in-class questions assigned by the teacher, creating a "combination of theory and practice" teaching mode. The course places a strong emphasis on practicality in content design, highlighting the connection between textbook content and practical sports activities. As shown in Figure 1, students are more actively engaged in discussions with their group peers to better understand each other's viewpoints and ideas, attempting to reach consensus and solve problems. At the same time, students enhance their expressive and listening skills, learning to communicate and collaborate more effectively with others.

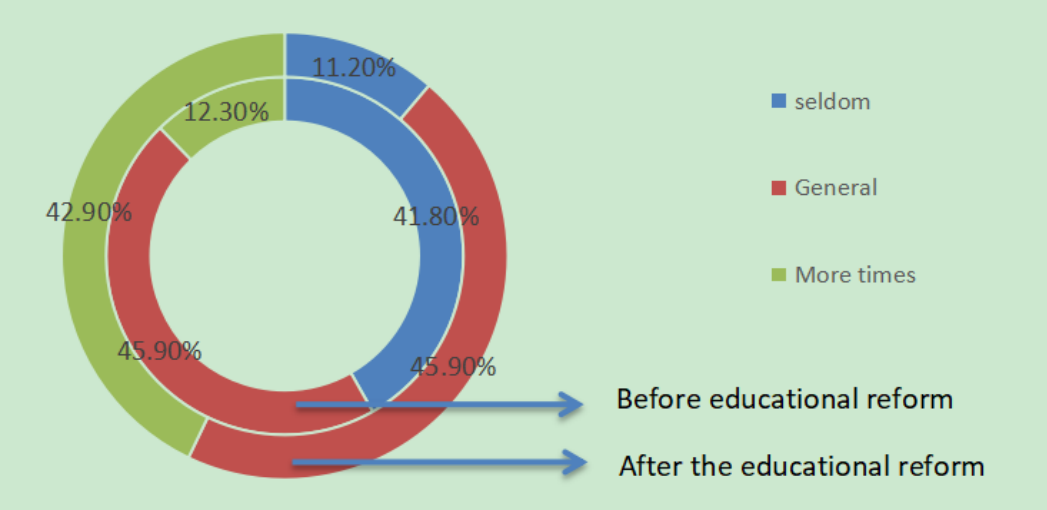

Figure 1: Discuss with the group during the learning process

2.2 Putting forward the student-oriented teaching organization form

The whole teaching process of this course highlights the student-oriented teaching organization form, which is transformed from self-learning to self-learning. The whole teaching process includes the

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assignment of questions, group demonstration, teacher collation, discussion of difficult problems, teacher comments, knowledge competition. In the pre-class preparation stage, instead of conducting comprehensive knowledge preview, the teacher divides the course content into difficulty levels in advance and provides questions for students to engage in problem-oriented preview. The organization of the preview involves group activities within the dormitories. Each group presents explanations for the assigned relatively easy knowledge points, and inter-group presentations are conducted in a competitive manner. Following the group presentations, the teacher evaluates and encourages the competitive results of each group. The teacher then delivers lectures on more challenging knowledge points, aiming to help students understand content that may be difficult to self-learn. Subsequently, practical problems are assigned for discussion by each group. During the subsequent answering process, groups learn from each other's highlights, enhancing the efficiency of learning. After completing the unit, a unit knowledge competition is organized, and final rankings are assigned to each group, providing motivation for improvement among less advanced groups and rewarding the top-performing groups. The survey results in Figures 2 and 3 demonstrate that this teaching model encourages students to engage more frequently in autonomous learning, both before and after class, fostering proactive previewing, reviewing, and preparation for competitions. It truly establishes a student-centered organizational form of teaching.

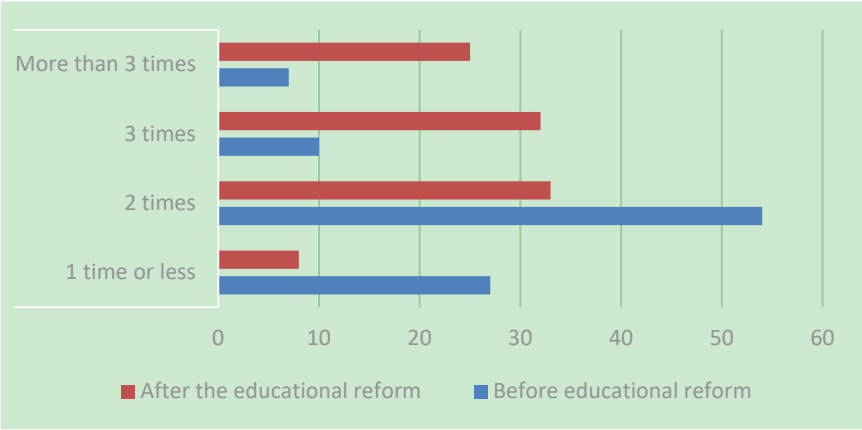

Figure 2: Number of extracurricular sessions per week

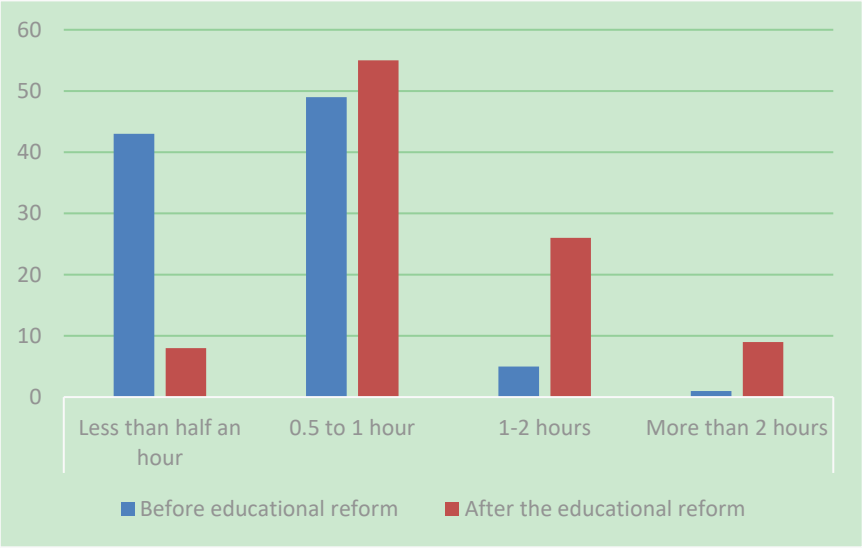

Figure 3: Time for each extracurricular study

2.3 Enriching the course teaching methods and teaching means

The teaching methods employed in the "learning through competition, promoting learning through competition" teaching model mainly include flipped classroom teaching, cooperative learning, lecture-based teaching, task-driven teaching, and independent learning. [6]Throughout this approach, the competitive nature of sports science students is harnessed in various learning activities, injecting a

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sense of competitiveness into the otherwise mundane theoretical studies. Various teaching strategies are applied, with a strong emphasis on utilizing online platforms to take advantage of the benefits of modern information technology in education. This includes activities such as knowledge exchange within online groups, knowledge assessments through online courses, and the use of various resources and software to create an excellent "Internet+" course.

2.4 Improving the evaluation system of students' comprehensive quality

In terms of teaching evaluation, the proportion of process assessment in group preview presentation, discussion and solution of questions, and knowledge competition should be increased to give students a more comprehensive, reasonable and fair evaluation. The course grade is composed of two parts: regular performance and theoretical achievement. Regular performance constitutes 40% of the total grade, and it is assessed based on attendance, participation in class discussions, presentations, and completion of assignments. The theoretical achievement contributes 60% to the total grade, and it is determined by the performance in the final written examination. This comprehensive assessment approach is relatively fair and better reflects students' overall qualities. On the other hand, the innovation in the format of theoretical exam questions is manifested through an increase in the weighting of subjective questions and the inclusion of practical application questions. Such questions cannot be solely answered by reading textbooks; they emphasize the integration of theory with practical application in sports, highlighting the course's practicality.[7]

3. Popularization and application value of the teaching mode of "learning by competition and promoting learning by competition"

In the task-driven teaching mode of "learning through competition and promoting learning through contests," teachers create opportunities for students to organize and arrange their own learning behaviors. Students analyze, synthesize, and process information and materials through methods such as collecting data, researching, and group discussions. They fully leverage their intelligence and creativity, engage in divergent and critical thinking from various perspectives, and ultimately formulate their own solutions to problems. This approach greatly enhances students' communication, collaboration, and creative problem-solving abilities, while also elevating their interest, comprehension, and emotional value in the learning process. Therefore, this represents an enhancement of comprehensive abilities and is not a singular benefit derived solely from the course in sports anatomy. It aligns well with other courses, fostering a deeper understanding. Furthermore, it enables students in sports-related majors to better grasp theoretical foundational knowledge, offering a reference for instructional reform in other grades or courses. It provides guidance and insights for universities that have already implemented or plan to introduce such courses, promoting the better development of sports anatomy courses in higher education. This endeavor serves as a significant exploration in the profound reform of physical education courses.

4. Summary

To sum up, the application of the "learning through competition, promoting learning through competition" teaching mode has shown certain effectiveness, feasibility, and promotional value based on the characteristics of the course in sports anatomy and the nature of sports major students. The "learning through competition, promoting learning through competition" teaching mode is a specific form based on research-oriented learning, emphasizing the subjectivity, participation, and experiential nature of student learning. Students acquire knowledge and skills through participation, experience, cooperation, and summarization, ultimately developing abilities. This approach aligns with advanced educational principles and the "student-centered" teaching philosophy, genuinely serving students and the course instruction.

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