

Research on Teaching Practice of Sports Injury Prevention Course for Physical Education Students in Higher Vocational Colleges

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Abstract: Based on the career-oriented characteristics of physical education students in higher vocational colleges and the practical needs of sports injury prevention and control, this study focuses on the optimization of teaching in the sports injury prevention course. By adopting teaching experiments, questionnaire surveys, and interviews, it systematically investigates the current teaching situation and analyzes problems in the adaptability of the curriculum system, the practicality of the teaching model, the risk prevention and control regarding students' learning conditions, and the supervision of the evaluation mechanism. A four-dimensional optimization path is proposed, including reconstructing a hierarchical curriculum system, innovating the theory-practice integrated teaching model, strengthening the cultivation of safety literacy, and constructing a diversified evaluation mechanism. The effects were verified through one semester of teaching practice. The results conclude that the optimized teaching model can effectively improve students' mastery of sports injury prevention knowledge and their practical handling abilities. Students are generally satisfied with the course, and their professional literacy has been significantly enhanced. This study can provide practical references for the teaching reform of safety-related courses for physical education majors in higher vocational colleges.

Keywords: Higher vocational physical education; Sports injury prevention; Teaching practice; Curriculum optimization; Professional literacy

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1. Introduction

Physical education (PE) in higher vocational colleges aims to cultivate technical and skilled talents for grassroots sports service positions. Graduates are primarily prepared for roles such as social sports instructors, fitness coaches, auxiliary PE teaching in primary and secondary schools, and the organization of mass sports activities. The ability to prevent sports injuries and handle emergencies directly affects the safety

and professionalism of sports services. The Sports Injury Prevention course is a core foundational course for PE-related majors, characterized by both theoretical and practical aspects. It serves as an important pathway to consolidate students' safety awareness and enhance their job competence ^[1].

With the continuous advancement of the National Fitness Strategy, grassroots sports service scenarios have become increasingly diversified. Service targets cover various groups, including adolescents, middle-aged and elderly people, and those undergoing chronic disease rehabilitation, which places higher demands on practitioners' sports safety prevention and control capabilities. However, the current Sports Injury Prevention courses in some higher vocational PE colleges still face issues such as a disconnect between course content and job requirements, insufficient practical training, and weak risk awareness cultivation, which fail to fully adapt to the educational positioning of vocational education. Therefore, taking students in higher vocational PE colleges as the research object, this paper explores teaching optimization paths from four aspects: curriculum system, teaching mode, literacy cultivation, and evaluation mechanism. It tests the effects through practice, providing feasible schemes for improving course teaching quality and strengthening students' occupational safety capabilities.

2. A realistic review of the teaching of the sports injury prevention course in higher vocational PE colleges

Talent cultivation in higher vocational PE colleges is characterized by occupational, applied, and skill-oriented features. The setting of the Sports Injury Prevention course must be closely aligned with the actual needs of job scenarios ^[2]. From the current operational reality, most colleges list this course as a compulsory subject for majors such as physical education, social sports, and sports training. The class hours generally range from 32 to 48, covering basic content including an overview of sports injuries, management of common injuries, first-aid techniques, and sport-specific injury prevention, which builds a basic knowledge framework for students.

At the teaching implementation level, the course mostly adopts a combination of classroom theoretical lectures and basic practical training. The theoretical part focuses on explaining knowledge points such as injury mechanisms and pathological manifestations, while the practical part mainly demonstrates basic techniques like bandaging and cardiopulmonary resuscitation (CPR) ^[3]. Some colleges rely on campus clinics and on-campus fitness venues for a small amount of on-site teaching; however, the overall proportion of practical teaching is relatively low, and it is not closely connected with subsequent specialized training courses and internship programs.

Regarding students' learning outcomes, most students can master the basic theoretical knowledge of sports injuries, but their lack of risk identification and on-the-spot handling abilities in complex scenarios is quite apparent. They are unable to formulate targeted injury prevention and control plans for different sports scenarios and service targets of different age groups, indicating a certain gap from actual job requirements ^[4]. This shows that the course teaching cannot adequately adapt to occupational needs, nor can it effectively strengthen students' practical abilities.

3. Current cruxes in the teaching of the sports injury prevention course in higher vocational PE colleges

3.1. Weak specialized adaptability of the curriculum system

Currently, the course content mostly adopts a universal structure of general knowledge plus typical cases,

lacking specialized design for the various professional directions of higher vocational PE. On the one hand, the differentiation of injury characteristics and preventive measures among different specializations such as ball games, track and field, martial arts, and fitness/bodybuilding is low, making it difficult for students to connect their own specialization's injury characteristics with preventive measures ^[5]. On the other hand, the alignment between the course content and the real scenarios of grassroots sports service positions is insufficient. The proportion of content related to injury risk prevention and control for scenarios like youth sports training, fitness guidance for the middle-aged and elderly, and community sports activities is low, and occupation-oriented content modules are missing, resulting in a lack of adaptability and transferability for students in their positions.

The hierarchical structure of the course content is weak, with an unclear gradient among basic theory, advanced skills, and comprehensive application. It cannot meet the learning needs of students with different foundational levels, easily causing advanced students to be under-challenged and weaker students to fall behind, which affects overall teaching efficiency.

3.2. Insufficient practical experience in the teaching mode

The current teaching mode remains dominated by teacher lectures and demonstrations, with students lacking active hands-on practice and scenario experiences. The proportion of theoretical teaching is generally greater than 60%. Practical training mainly consists of students practicing in groups by imitating the teacher's demonstration. The training format is monotonous and lacks real-scenario simulation drills. Students repeatedly practice a single movement in a static environment without adaptive training for sudden situations.

The support from teaching resources is minimal. The application of digital teaching resources such as virtual simulations and case databases is rare, and the collaborative educational role of off-campus practice bases has not been fully utilized. Students have few opportunities to encounter real injury cases, resulting in a disconnect between theoretical knowledge and practical application, and students' on-the-spot handling capabilities cannot be effectively exercised.

3.3. Low awareness of risk prevention in student profile analysis

During the teaching process, insufficient attention is paid to students' individual differences and sports risks, and student profile analysis is inadequate. There are significant differences in sports foundation, physical fitness levels, and specialized experience among students in higher vocational PE colleges. Some students already have chronic sports injuries before enrollment, yet a uniform training intensity and content standard are generally used in teaching, with no stratified or classified risk prevention and control guidelines ^[6].

The course teaching only emphasizes post-injury management methods, lacking the integration of pre-injury risk identification and safety awareness cultivation. Students do not pay enough attention to preventive measures such as sports load monitoring, warm-up activity design, and fatigue recovery. Behavioral habits for safety protection have not yet been formed, posing hidden injury risks in their own training and making it difficult for them to proactively avoid risks for their service targets in future job positions.

3.4. Lack of process supervision in the evaluation mechanism

Course evaluation is mostly based on summative assessment, generally in the form of theoretical written exams plus skill tests, with final examination scores accounting for over 70% of the total grade, and a low proportion of process evaluation. This evaluation method cannot comprehensively reflect the students'

learning process and ability development, nor can it timely discover and improve problems existing in teaching.

The evaluation subject is singular, dominated by teacher assessments, with low participation in student self-assessment and peer assessment. The evaluation dimensions focus on knowledge, memory, and basic skills, with insufficient assessment of comprehensive abilities such as risk judgment, scenario adaptability, and occupational literacy. It cannot comprehensively measure students' job competence, nor can it provide effective supervision and guidance for students' learning processes^[7].

4. Optimization paths for teaching the sports injury prevention course in physical education at higher vocational colleges

4.1. Relying on sport-specific characteristics to reconstruct a hierarchical course content system

Based on job requirements and guided by three levels—basic, specialized, and applied—a new course content system is reconstructed to make the course content more targeted and adaptable. The basic level mainly covers general core knowledge such as basic theories of sports injuries, common injury types, and fundamental first-aid techniques, laying a solid theoretical foundation for all students. The specialized level sets up modular specialized content based on different professional directions, such as ball sports injury prevention, track and field injury prevention, and fitness training injury prevention and control, to meet students' diverse specialized learning needs. The applied level connects with grassroots sports service positions, adding vocationally oriented modules such as youth sports training safety, community fitness guidance risk prevention and control, and basics of sports rehabilitation, to enhance students' job adaptability. Meanwhile, a flexible content system of “compulsory + elective” is established. The basic modules are compulsory for all, while the specialized and applied modules offer different elective directions, allowing students to choose freely according to their own majors and career plans to meet personalized learning needs. In terms of content updating, typical cases of grassroots sports services and new industry standards are promptly incorporated to ensure the timeliness and practicality of the course content^[8].

4.2. Based on practical operation orientation to innovate the theory-practice integrated teaching model

A four-in-one theory-practice integrated teaching model of “concise theoretical explanation, skill practice, scenario simulation, and job shadowing” is created, integrating practical training into the entire teaching process and increasing the proportion of practical teaching to over 50%. Theoretical teaching adopts a problem-oriented plus case-analysis approach, using real injury cases as the carrier for explaining core knowledge points, prompting students to actively think about the causes of injuries and the logic of prevention and control. Skill practice adopts a step-by-step training method; after the teacher demonstrates, students practice repeatedly in groups, and the teacher circulates to guide and correct errors, ensuring that every student masters standardized operational techniques.

Scenario simulation teaching is strengthened by setting up various scenarios such as sudden injuries on the sports field, emergency responses in fitness venues, and youth sports protection. Students are divided into groups to play various roles and complete the entire process of risk assessment, injury diagnosis, and emergency response, thereby improving their on-the-spot adaptability. Relying on online teaching platforms,

a virtual simulation training module is built, and digital resources such as case databases and operation videos are enriched to support students' independent after-class practice. In collaboration with off-campus fitness venues and community sports centers, practical teaching bases are co-constructed, and student job shadowing activities are regularly organized to strengthen learned skills in real-world environments ^[9].

4.3. Focusing on risk prevention and control to strengthen the cultivation of sports safety literacy

The cultivation of safety literacy is integrated into the entire process of course teaching, connecting knowledge imparting, ability cultivation, and awareness formation. Before class, students' sports health records are established to fully grasp students' athletic foundations, past injury histories, and physical fitness conditions. Based on this, hierarchical teaching plans are formulated, and personalized training and protection advice is given to students with chronic injuries, reducing sports risks during the learning process at the source.

During teaching, the penetration of risk prevention awareness is strengthened. While explaining injury handling methods, more emphasis is placed on preventive content such as the design of warm-ups, control of sports loads, methods of fatigue recovery, and inspection of venues and equipment, enabling students to establish a safety protection awareness focused on prevention. At the same time, safety norms and professional ethics are integrated into daily teaching to cultivate students' rigorous and responsible professional attitudes, so that they will proactively identify risks and implement protective measures in their future sports service work, ensuring the sports safety of service recipients.

4.4. Improving process supervision to construct a diversified and comprehensive evaluation mechanism

A diversified evaluation system of "process evaluation plus summative evaluation" is created to comprehensively assess students' knowledge, abilities, and literacy. Process evaluation accounts for 50% of the total grade, encompassing classroom performance, practical exercises, case analysis assignments, and scenario simulation performance, using daily records to provide timely feedback on students' learning status and guiding them to attach importance to the learning process. Summative evaluation retains the theoretical written exam and skill assessment, and adds comprehensive case analysis questions to test students' comprehensive application ability of knowledge.

Evaluation subjects are enriched, and a diversified evaluation model of "teacher evaluation + student self-evaluation + group peer evaluation" is established. A peer evaluation mechanism is introduced into the practical assessment segment, prompting students to deepen their understanding of technical standards during the process of mutual evaluation. In the job shadowing segment, evaluations by off-campus instructors are added to enhance the vocational nature of the evaluation. A whole-process, multi-dimensional evaluation can make careful consideration of students' learning effects, effectively supervise the teaching process, and promote the continuous improvement of teaching quality ^[10].

5. Practical effectiveness of teaching the sports injury prevention course in physical education at higher vocational colleges

To test the actual effectiveness of the previously proposed optimization paths, this paper selected two parallel

classes of the 2023 cohort majoring in Physical Education at a higher vocational college as the research subjects. The experimental class, with 32 students, adopted the optimized teaching plan, while the control class, with 30 students, adopted the traditional teaching model. The teaching cycle was one semester (36 credit hours). After the course concluded, students' knowledge and abilities were assessed using unified standards, and a course satisfaction survey was conducted (**Table 1**).

Table 1. Comparison of students' sports injury prevention ability assessment results before and after teaching intervention (scores, Mean $\pm$ SD)

Group	Time	Theoretical knowledge score	Practical skill score	Risk identification ability score
Experimental class	Pre-intervention	62.3 $\pm$ 5.7	58.6 $\pm$ 6.2	55.1 $\pm$ 7.3
Experimental class	Post-intervention	85.7 $\pm$ 4.2	88.2 $\pm$ 3.9	83.5 $\pm$ 5.1
Control class	Pre-intervention	61.8 $\pm$ 6.1	59.2 $\pm$ 5.8	54.7 $\pm$ 6.9
Control class	Post-intervention	73.5 $\pm$ 5.3	71.4 $\pm$ 6.0	67.2 $\pm$ 5.8

As shown in **Table 1**, before the intervention, there was no significant difference in the various assessment scores between the two classes, indicating consistent baseline levels and comparability between the groups; after the intervention, the experimental class scored significantly higher than the control class in theoretical knowledge, practical skills, and risk identification ability, indicating that the optimized teaching model has a more pronounced effect on improving students' comprehensive abilities, particularly with greater improvements in practical skills and risk identification ability, proving the positive role of the integration of theory and practice and the cultivation of safety literacy.

According to the course satisfaction survey results, students' satisfaction with all four aspects—course content design, teaching mode format, ability enhancement effect, and assessment and evaluation methods—was >90%, with an average satisfaction rate of 90.6%, indicating that students relatively agree with the optimized teaching plan, which can better achieve students' learning purposes.

In terms of overall practical effectiveness, the optimized course teaching has improved in three aspects: first, students' awareness of sports safety has significantly increased, with a notably higher proportion of students actively doing warm-ups and taking protective measures in subsequent specialized training classes, and a reduced incidence of training injuries; second, students' comprehensive professional abilities have been strengthened, as demonstrated by their ability to independently complete basic sports protection guidance and emergency handling during subsequent observation activities, earning unanimous praise from off-campus instructors; third, the vocational orientation of course teaching has become more pronounced, laying a solid safety capability foundation for students' subsequent job internships and employment.

6. Conclusion

The sports injury prevention course is an indispensable and important component of the talent cultivation system for physical education majors in higher vocational colleges, and the quality of teaching directly affects students' professional abilities and career development. In response to current problems in course teaching such as insufficient systemic adaptability, weak practicality, inadequate risk cultivation, and imperfect evaluation, reconstructing a tiered course system oriented by vocational needs, innovating the

theory-practice integrated teaching model based on competence, strengthening literacy cultivation with safety at the core, and perfecting the diversified evaluation mechanism oriented by process can effectively improve course teaching quality and enhance students' sports injury prevention and control abilities and professional literacy. In the future, we must continue to promote the integration of industry and education, constantly introduce frontline industry case studies and standards, enrich digital teaching resources, deeply align course teaching with job requirements, and cultivate more high-quality technical and skilled sports talents with strong professional abilities and high safety awareness for the grassroots sports service sector.

Disclosure statement

The author declares no conflict of interest.

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