

Sports curriculum in applied undergrad: Volleyball example

Xu Jiaqi^{1, a, *}, Lin Yongqing^{1, b},

¹Ningbo Sports School, No.225, Wax Flower Road, High-Tech Zone, Ningbo, 315100, China
a.xujiaqi_20_1108@163.com, b.yongqing_0204@gmail.com

***Corresponding Author**

Abstract: In applied undergraduate education, the reform of sports courses should be in line with the school's educational philosophy and positioning, and be consistent with the school's training program. In the construction of sports courses, it is necessary to meet the needs of students' lifelong development as well as the needs of cultivating students' professional physical fitness and professional ethics. At the same time, the construction of the sports curriculum system must respect the subject nature and comprehensiveness of knowledge of sports courses, and pay attention to the synergy with the students' majors. Adjustments should be made in curriculum content, teaching methods, and course evaluation to play the role and status of sports courses in the training of applied talents.

Keywords: Applied undergraduate education, Sports courses, Construction, Volleyball curriculum system

1. Introduction

With the development of applied undergraduate education, sports courses, as an important component, urgently need to construct a curriculum system that is adapted to it. This paper takes volleyball courses as an example to deeply explore the construction of the sports curriculum system in applied undergraduate education. It first elaborates on the principles that should be followed in the construction of the sports curriculum system, including emphasizing the subject nature of sports courses, the comprehensiveness of imparting sports knowledge, skills, and techniques, as well as the synergy between sports courses and students' majors. Then, taking volleyball courses as a specific case, it elaborates in detail from aspects such as the target audience, the goal system, the content system, teaching methods and organizational forms, and the evaluation of sports course performance. By combining practical and theoretical courses, employing dynamic tiered teaching and a variety of teaching methods, and using a combination of formative and summative evaluation methods, it aims to better serve the training of applied talents with sports courses, and to promote the development of students' lifelong sports awareness and professional quality.

2. Principles of sports curriculum construction

2.1. Emphasizing the subject nature of sports courses

In the construction of the sports curriculum system, emphasizing the teaching of sports subject knowledge is the unchanging essence of sports courses. Only by internalizing sports subject knowledge into students' developmental capabilities can the educational value of sports courses for individuals be achieved. Sports courses should pay attention to students' interests, but not based on their sensuous interests. Instead, they should be based on the healthy development of students' objective needs. The value of the developed sports curriculum content resources should be judged by whether they meet students' objective needs and can promote their healthy development. The characteristics and technical specifications of sports projects should not be reduced because of students' interests, nor should the professionalism of sports be weakened, and the personality and quality of sports courses should not be lost.

2.2. Emphasizing comprehensive sports knowledge and skills

It is necessary to focus on the comprehensive development of sports theory and practice, changing the previous one-sided emphasis on sports practice courses and the bias towards the teaching of sports techniques. The content and class hours of sports theory courses should be appropriately increased. This is because rich sports humanities knowledge can play an important guiding role in people's behavioral attitudes, spiritual qualities, and values. Scientific sports exercise methods and sports health care knowledge, compared with learning a sports technique or skill, have a guiding significance for people's lifelong sports behavior and can have a more profound impact.

2.3. Emphasizing synergy with majors

The construction of the sports curriculum system should be closely integrated with the majors students are studying and the careers they will pursue in the future. Specialized and targeted sports exercise knowledge and methods should be taught to create conditions for cultivating students' professional physical fitness, to enable them to play a greater role in their future work, to prevent occupational diseases, and to lay a solid foundation for the appreciation of health capital. For example, for students majoring in management and other fields that emphasize teamwork in their future careers, collective sports such as volleyball and basketball should be the main focus. For students majoring in secretarial studies, body-shaping courses such as aerobics and yoga should be the primary offerings. For computer science students, flexible and varied small ball sports should be the main focus. For students majoring in primary education, sports games and outdoor expansion courses should be the main offerings. Of course, different majors and career characteristics also have different requirements for the psychological qualities and professional qualities of learners and practitioners. Sports courses should use games and targeted exercises to develop students' individual psychological qualities and professional qualities.

3. Example: Volleyball course in applied undergraduate sports curriculum

3.1. Target audience

The fitness value of volleyball is mainly reflected in its ability to improve the function of the human central nervous system and internal organs, as well as to enhance physical qualities such as strength, speed, agility, and endurance. It also helps to develop psychological qualities like self-confidence, composure, and perseverance. However, the biggest difference between volleyball and other sports is that it is a net-separated team sport that relies on collective cooperation to win. Individual strengths are often displayed with the active cooperation of teammates. Therefore, while emphasizing individual ability, volleyball particularly focuses on communication, cooperation, and team spirit among players. Given these characteristics of volleyball, it is suitable for majors such as marketing, business management, and automotive engineering.

3.2. Goal System of the volleyball course

Based on the professional characteristics of students, the positioning and talent training specifications of applied undergraduate education, the "Guidelines for Teaching in Sports Courses in Ordinary Higher Education Institutions," and the "Basic Standards for Sports Work in Higher Education Institutions" issued by the Ministry of Education in 2014, the goal system for the volleyball course is shown in Figure 1.

3.3. Content system of the volleyball course

In applied undergraduate education, the teaching duration of sports courses is generally two academic years, or four semesters. When formulating the content system for the volleyball course, it is necessary to closely integrate the content with the students' majors and the characteristics of their future careers. The actual and general needs for physical exercise in students' current and future study, work, and life should be considered, and the course content should be reasonably allocated with emphasis on certain aspects. For example, in the first semester of the first year, due to the intense study before the college entrance examination and a long summer vacation, students need a period to adapt to the sports teaching process. Therefore, in this semester, the number of theory class hours should be appropriately increased. The content

of theory classes should include teaching scientific methods of physical exercise, prevention and treatment of common sports injuries, simple exercise prescriptions, and interpretation of the "National Student Physical Fitness and Health Standards." In practical classes, the focus should be on physical fitness recovery exercises, general physical quality exercises, and special physical quality exercises required for volleyball, in preparation for students' physical fitness tests and subsequent specialized volleyball teaching. Since sports teaching in applied undergraduate institutions emphasizes practicality and focuses more on vocational physical fitness training compared to research-oriented institutions, the construction of sports courses should target the cultivation of students' professional qualities and psychological qualities according to their majors and careers. Therefore, sports games can be appropriately included in the teaching content. The specific arrangement of course content is shown in Table 1.

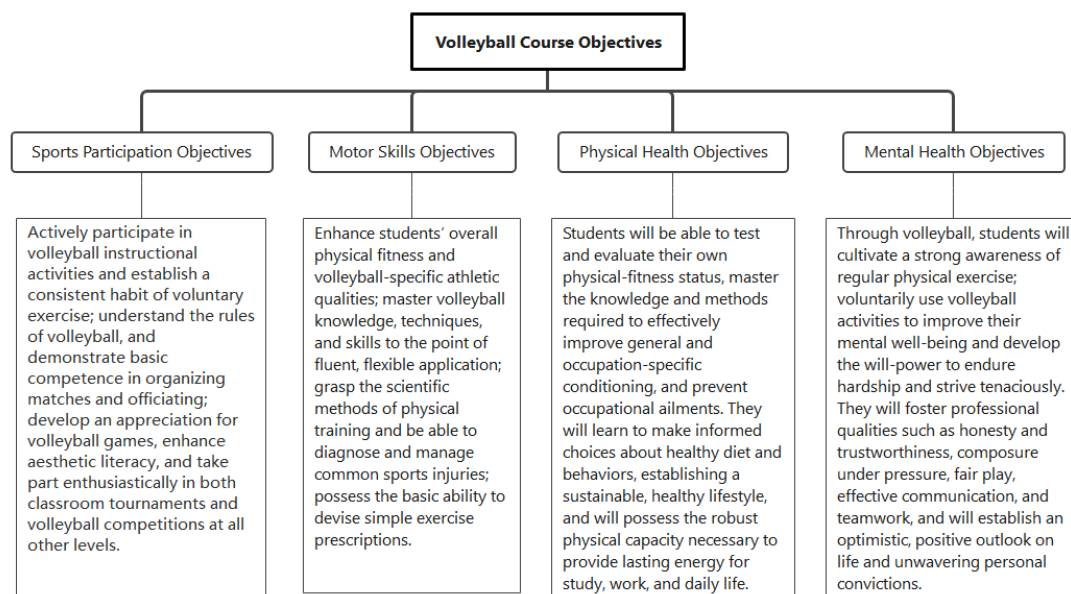


Figure 1: Structure of Volleyball Course Goal System

3.4. Teaching methods and organizational forms

3.4.1. Teaching methods

Teaching methods in physical education include both the teaching approaches used by instructors and the learning methods adopted by students. In each teaching unit, the methods applied are often a combination tailored to the content and objectives, as the saying goes, "There are methods in teaching, but no fixed methods." In volleyball elective courses, various teaching methods can be employed, such as programmed instruction, mastery learning, comprehension teaching, discovery learning, guided learning, problem-based learning, case-based learning, game-based learning, competition-based learning, situational learning, and group learning. [1-3]

It is worth noting that the use of modern teaching tools has made physical education teaching methods more diverse and effective. These tools have also changed the traditional face-to-face teaching model between teachers and students. By leveraging the characteristics of online courses and multimedia teaching, such as intuitiveness, simulation, vividness, and realism, the unique changes in sports techniques can be vividly presented. This not only makes teaching more vivid and intuitive but also facilitates students' self-learning after class, thereby enhancing the effectiveness of physical education teaching.

3.4.2. Organizational forms

Dynamic tiered teaching is currently considered the most modern educational trend, integrating cognitive, affective, and physical development into a three-dimensional structure. It best reflects the teaching principle of differentiated instruction and teaching according to students' aptitude. This method involves grouping students homogeneously based on their physical fitness, skills, individual capacity for

learning, and interests or preferences. Teaching objectives, tasks, content, practice frequency, and requirements are then set according to each group's level.

However, in practice, due to limitations in class size, availability of sports facilities, and the varying levels of students' physical abilities, it is challenging to fully implement dynamic tiered teaching in current physical education. It can only be partially applied to certain teaching content, such as using graded grouping for practice in games or teaching competitions. The most effective homogeneous grouping, which yields the best interactive results, can only be implemented at the level of the same class or gender, rather than based on the same level of sports proficiency or shared interests.

Therefore, in most physical education teaching processes, it is only practical to conduct random or heterogeneous group practice under the guidance of teachers, with students as the main body. Based on the content and objectives of the volleyball elective course, the main organizational forms include individual guidance, whole-class teaching, group practice, and integration of in-class and out-of-class activities, as shown in Table 2.

Table 1: Content of Volleyball Course Instruction

Semester	Practical Course Content	Theoretical Course Content	Physical Fitness
1	Running exercises (sprint, medium and long-distance running); Jumping exercises (standing long jump, multi-level frog jump practice, "depth jump" practice, single and double leg jumps, etc.); Agility and flexibility exercises (variable speed and direction movement, games, various stretching exercises); Strength exercises (throwing solid balls, support on single and double bars, hanging and stretching, abdominal and back muscle exercises on mats, etc.); Various footwork exercises in volleyball (stride, side step, slide step, and crossover step, etc.).	Scientific methods of physical exercise; Prevention and treatment of common sports injuries; Simple exercise prescriptions; Interpretation of the National Student Physical Fitness and Health Standards.	General athletic qualities (strength, speed, endurance, agility, flexibility)80%; Specialized athletic qualities (speed strength, strength endurance, agility, etc.)20%.
2	Ready stance; Hand shape for ball padding and self-padding, mutual padding; Front underhand serve, side underhand serve, front overhand serve; Hand shape for passing and self-passing, mutual passing; Introduction to side padding, one-handed padding, back padding, and blocking; Specialized games.	Overview of the Development of Volleyball; Characteristics and Value of Volleyball; Introduction to Exercises for Developing Professional Quality and Physical Fitness.	60%of the exercises are arranged for general athletic qualities according to the physical fitness test content; 20%for specialized athletic qualities; 20%for vocational physical fitness training.
3	Three-person combination practice (one serve, one receive, one pass); Spiking practice at positions 2 and 4; Single and double blocking; Introduction to front set and adjustment set; Four-person combination practice (one serve, one receive, one pass, one spike).	Basic knowledge of volleyball competition rules and refereeing.	40%of the exercises are arranged for general athletic qualities according to the physical fitness test content; 30%for specialized athletic qualities;30%for vocational physical fitness training.

4	"Middle One-Two" and "Side One-Two" offensive tactics, "Insert" attack tactics; "Center Follow-Up" and "Side Follow-Up" defensive tactics; Teaching matches.	Appreciation of volleyball matches; Prevention of occupational diseases.	40%of the exercises are allocated for general physical fitness based on the physical fitness test content; 30%for specific sports qualities; 30%for vocational physical training.
---	--	---	---

3.5. Evaluation of sports course performance

Due to the unique functions of sports courses, n applied undergraduate education, ports courses are more capable of fostering students' individual psychological qualities, professional ethics, and vocational physical fitness, demonstrating advantages that other disciplines cannot replace. Therefore, the evaluation of sports courses should change the previous summative evaluation method that mainly focuses on technical assessment and is more suitably combined with formative and summative evaluation methods. Especially in cultivating students' individual psychological qualities and professional ethics, it is more important to examine the extent to which the mental health goals set by the course have been achieved. The achievement of this goal is mainly implemented through formative evaluation, which is reflected in the evaluation of students' learning attitudes. This includes class performance, attendance, and selective tracking tests of certain physical qualities, with evaluations based on whether students have made progress. Summative evaluation is mainly used for the final theoretical examination, physical fitness, and specialized technical and skill tests at the end of the term. The content of the theoretical examination mainly involves basic knowledge of scientific exercise, sports health care, sports humanities, rules and refereeing of sports events, etc. The practical course examination includes physical fitness tests, selection of one or two specialized sports techniques, and skill assessments. Finally, students' sports course performance is calculated and corresponding credits are given according to the weight of the assessment indicators and the evaluation criteria.

Table 2: Teaching Organization Forms of Volleyball Course

Classification of Sports Teaching Organization Forms	Nature of Content	Teaching Process
Individual Instruction	Individual practice of sports skills, techniques, and physical fitness items	Interaction between teacher and student, but no interaction among students
Whole-Class Teaching	Warm-up activities, theoretical teaching, transmission of sports techniques	Interaction between teacher and student, no obvious interaction among students
Group Teaching with In-Class and Out-of-Class Integration	Temporary grouping (games, physical fitness exercises)	Obvious interaction among students
	Fixed grouping (pairs, trios, teaching matches)	Obvious interaction among students
	Conditional grouping (based on gender, interest, or performance in games and matches)	Close interaction among students
	Extracurricular tutoring, training, various levels of volleyball competitions, and organizing the viewing of influential materials, etc.	Interaction between teachers and students, and obvious interaction among students

3.5.1. Evaluation of sports theoretical knowledge

The evaluation of basic sports theoretical knowledge and volleyball theoretical knowledge can take the form of oral exams, computer-based tests, knowledge contests, short papers, etc., with the assessment results being converted into scores for students' theoretical knowledge.

3.5.2. Evaluation of learning attitude

The evaluation of students' learning attitude is conducted by combining self-assessment by students and assessment by teachers, with self-assessment accounting for 30%and teacher assessment accounting for 70%.It should be noted that although modern teaching evaluation advocates peer assessment among

students, in the applied undergraduate education system, the sports course classes are not independent administrative classes. The students in a teaching class may come from similar majors within the same college or different classes of the same major, and may also involve different professional internship groups. This objectively affects the degree of understanding and familiarity among students, making the feasibility of implementing peer assessment quite low. Therefore, this part is omitted in the evaluation system of this study. The indicators and standards for student self-assessment and teacher assessment are as follows: attendance 20%; active participation and engagement in volleyball activities 20%; emphasis on thinking and diligent practice 20%; acceptance of guidance and completion of teaching tasks 20%; active interaction and close cooperation with classmates 20%.

3.5.3. Evaluation of physical fitness and volleyball techniques and skills

In order to allow more time for imparting sports knowledge, techniques, and skills to students, and to simplify the examination process and reduce the workload of teachers, students' physical fitness tests can be combined with the implementation of the "National Student Physical Fitness and Health Standards" during the semester. The scores for physical fitness tests can be converted based on the physical fitness scores in the standards. In the evaluation of volleyball techniques, during the 2nd and 3rd semesters, two volleyball techniques can be selected for assessment each semester. Since the content of specialized volleyball skills learned by students in the 1st semester is limited, the proportion of scores for theoretical and physical fitness exams can be increased, with only one volleyball movement combination selected for examination. In the 3rd semester, the rules of volleyball competitions and refereeing methods are the foundation for students to apply comprehensive skills and to participate in and appreciate volleyball matches, so a separate theoretical exam should be conducted. In the 4th semester, the performance in volleyball teaching and matches, as well as the ability to execute refereeing, can be used to replace the specialized volleyball skills exam.

3.5.4. Evaluation of extracurricular sports activities

Extracurricular sports activities are an extension and supplement to sports classes. According to surveys conducted in some applied undergraduate institutions, the evaluation of extracurricular sports activities mainly includes activities of various sports clubs, morning exercises, various sports competitions, sports team training, and various sports cultural festivals. Responsible teachers will keep attendance and statistics of students' participation, and finally, the results will be included in the sports grades according to the prescribed proportions.

3.5.5. Evaluation of teachers

The evaluation of teachers is mainly carried out by combining peer evaluation and student evaluation. Based on interviews with relevant personnel, starting from the teaching evaluation standards for physical education teachers and the constituent elements and requirements of the volleyball teaching process, the results are organized as shown in Table 3.

Table 3: Evaluation Form for Physical Education Teachers

Primary Indicator	Secondary Indicators	Score
Teaching Plan 10%	Clear tasks, well-defined steps, and prominent key points and difficulties	
	Rigorous lesson plan preparation, reasonable and clear teaching design, reflecting the requirements of teaching objectives	
	Rich, novel, and creative teaching content	
Teaching Methods 20%	Diverse teaching methods	
	Focus on Inspire and guide to stimulate students' thinking, Reasonable use of teaching skills	
Teaching Organization 20%	Rigorous organization, smooth transition between content sections	
	Effective overall control, knowing when to guide and when to allow independence	
Teaching	Adequate preparation before class	

Process 20%	Clear leading role of the teacher, prominent Subject role of students	
	Concise explanation, correct demonstration, prominent key points and difficulties	
	Effective in motivating students, good interaction between teachers and students	

In the evaluation of teachers, especially peer evaluation, various forms such as open classes, teaching competitions, and in-class observations can be used. In the evaluation of teaching effectiveness, schools with the necessary facilities can use electronic devices to track students' heart rate, blood pressure, lactic acid levels, and other metrics to obtain more scientific quantitative indicators as the basis for evaluation.

4. Conclusion

In applied undergraduate education, the construction of the sports curriculum system is guided by the concept of applied talent cultivation and is set around the training objectives. Integrating the construction of the sports curriculum system closely with students' majors and their future careers is a trend in the reform and development of sports courses in applied undergraduate education. It is also a concrete manifestation of enabling students to apply what they have learned and to benefit from their studies. However, no curriculum system is a one-time solution, and its effects are not immediate. The construction of the sports curriculum system is a dynamic process. Only through continuous exploration in practice, and ongoing testing, summarizing, adjusting, and improving, can the value of sports courses be reflected in students' existence, life, and well-being. Only in this way can lifelong sports truly be implemented.

5. References

- [1] Tian Jing, Zheng Yile. Research on the Development of Sports Curriculum Content Resources from the Perspective of Value Judgment[J]. Journal of Guangzhou University of Sport, 2008, 28(3): 107-110.
- [2] Chen Shaoqing, Yang Guoqing. Construction and Application of the “3+1” Classification System of Sports Teaching Methods[J]. Journal of Shenyang University of Physical Education, 2011, 30(1):76-78.
- [3] Feng Xiaoli. Classification of Sports Teaching Methods[J]. Sports Science, 2004, 24(1):53-55.
- [4] Peng Xiaowei, Yang Guoqing. On the Establishment of the “Three-Tier, Three-Standard” Classification System of Sports Teaching Methods[J]. Journal of Sports Science, 2010, 17(5):56-59.