



Research on the Diagnosis of Issues and Optimization Pathways in College Track and Field Training from the Perspective of the Sports Power Strategy

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Abstract. In the development of China's sports industry, "building a powerful sports nation" has always been a strategic requirement guiding the overall development of the industry. Based on the current situation, China has continued to strengthen the construction of its sports industry, with track and field being one of its focuses. As one of the key factors influencing China's strategic goal of becoming a powerful sports nation, track and field is mainly reflected in two aspects: college sports and competitive sports. The development of track and field should focus on young people, with colleges and universities serving as the frontline, continuously deepening the training and development of track and field, and continuously producing outstanding track and field athletes. In this context, this study takes several colleges and universities in Nanchang, Jiangxi, that offer public track and field teaching as examples, conducts in-depth research on track and field training issues, and proposes constructive theoretical elaborations on cause analysis and optimization approaches. This serves as a reference for college track and field training and contributes to the implementation of the strategic goal of building a powerful sports nation.

Keywords: powerful sports nation; college track and field training; track and field sports

1 Introduction

With the development of China's sports industry, the strategy of becoming a leading sporting nation has increasingly garnered attention from related industries. From the current progress of sports construction, China's sports industry has made significant strides after years of accumulation. Following the 2008 Beijing Olympic Games, China put forward the strategic goal of "building a leading sporting nation" and, based on sports education, established the development concept of "a strong nation depends on a strong sports industry, and the rise of national fortune leads to the prosperity of sports," formulating various development strategies for the sports industry. As a major event in the Olympics, athletics encompasses 48 sub-events, making it one of the sports with the most subdivisions. Athletics not only demonstrates China's compre-

hensive sports strength but is also a key area where China needs to focus on nurturing sports talents. From the perspective of building a leading sporting nation, this paper analyzes the current development status of college track and field sports in China, aiming to explore optimized development paths for college track and field training.

2 Discrimination of the Essence of Optimized Development in College Track and Field Training

2.1 The Construction of a Powerful Sports Nation and the Optimization of College Track and Field Training are the Unity of Purpose and Regularity

The construction of a powerful sports nation serves as the core guidance for the high-quality development of college track and field sports in China and is also the inevitable path for China to achieve modernization in sports. The key to the high-quality development of college track and field sports lies in the effective conversion of the training system into promotional effectiveness. Therefore, the rational design of track and field training programs is crucial for achieving high-quality development in college track and field sports. Promoting the optimization of college track and field training serves as a "bridge" for implementing the strategy of building a powerful sports nation. Thus, constructing an optimized approach for college track and field training in the new era can be regarded as both a practical action for cultivating track and field talents and a necessary path for building a powerful sports nation, embodying a shared purpose. Meanwhile, continuously promoting the optimized design of college track and field training methods not only helps enhance the effectiveness of cultivating track and field talents in colleges but also intuitively reflects the basic posture of colleges evolving towards becoming a powerful sports nation, aligning with the fundamental laws governing the development of college physical education [1]. Therefore, the optimized construction of college track and field training from the perspective of building a powerful sports nation represents the organic unity of purpose and regularity.

2.2 The Construction of a Powerful Sports Nation and the Optimization of College Track and Field Training are the Unity of Scientific Nature and Revolutionary Nature

The proposal of the strategy to build a powerful sports nation not only demonstrates the importance the Party and the state attach to the development of the sports industry but also guides the development logic of college track and field education. At this stage, China's sports industry is undergoing a period of transformation. Track and field, as a major event in competitive sports, requires colleges to achieve a unified connection between scientific training and innovative development. With a forward-looking perspective and mindset, colleges should explore the pain points and obstacles hindering the development of college track and field training and seek innovations and breakthroughs in track and field training forms with clearer optimiza-

tion ideas. This breakthrough requires not only innovations in training forms and hardware technologies but also systematic changes in the structure and processes of college track and field teaching [2]. Therefore, the construction of a powerful sports nation and the optimization of college track and field training represent the unity of scientific nature and revolutionary nature.

3 Diagnosis of College Track and Field Training Issues

3.1 Survey on Basic Information of Athletes

The research is based on three universities in Nanchang, Jiangxi, that offer track and field teaching courses. A total of 150 sports major students were selected for the survey. To facilitate the research and analysis, the study conducted a field survey among the students. The basic survey information is shown in Table 1. Among the surveyed student samples, all indicated that they had participated in track and field teaching courses, and teachers had normally conducted track and field teaching activities.

Table 1. Collected Questionnaire Data Statistics

	Number of ques- tionnaires distrib- uted	Number of ques- tionnaires recov- ered	Recovery rate	Effective recov- ery rate
Teachers	15	15	100%	100%
Students	150	142	94.67%	94.67%

3.2 Survey on Athletes' Training Frequency and Coaching Staff

The amount of time and frequency of track and field training among students are closely related to their training performance. According to the survey, students spend an average of over 10 hours per week on cumulative track and field training, with an average training frequency exceeding five times per week. This amount of training time and frequency has a positive effect on improving students' track and field performance. Additionally, field research on college track and field coaches reveals that all coaches possess C-level or higher coaching qualifications, have experience leading training teams, and can provide training guidance to students based on advanced sports concepts.

Scientific teaching methods and training techniques in track and field training play a crucial role in improving students' performance. Qualified coaches can develop professional track and field training plans and tasks using their expertise in track and field training, thereby more effectively enhancing students' physical fitness and track and field performance.

3.3 Survey on Athletes' Logistics Support

In terms of sports medical support, the three surveyed universities have established medical clinics within the campus and are equipped with multiple doctors and medical staff who possess medical practicing qualifications. These medical staff can effectively support medical supervision and safeguards during sports training, enabling timely responses to potential sudden injuries and emergency medical tasks during athletes' track and field training.

Ensuring a comprehensive sports medical supervision system can guarantee students' training safety during track and field training and assist track and field coaches in formulating scientific training plans and competition advice. However, the survey found that the three universities do not conduct long-term, continuous observations and tests on students' psychological states and training-related medical conditions, thus unable to obtain information on students' physical and psychological changes during track and field training.

3.4 Survey on Hardware Facilities in Colleges and Universities

Creating favorable training conditions is a fundamental requirement for ensuring the effectiveness of students' track and field training, including but not limited to facilities and equipment. By conducting a questionnaire survey among track and field coaches at the three universities, we obtained an understanding of the track and field training facilities at these universities, as shown in Table 2.

Table 2. Summary of Investigation on Track and Field Training Infrastructure in 3 Universities

Training conditions	Satisfaction	Basical satisfaction	Lack	Severely lack
Training ground	6	9	0	0
Training equipment	3	6	6	0

Based on the survey data, all the coaches from the three universities surveyed believe that their respective track and field training venues can meet the daily training needs of students. However, regarding training equipment, six coaches expressed concerns about a lack of track and field training equipment. For students' track and field training, issues related to training venues and equipment facilities can both affect their training experience and effectiveness. Therefore, universities should increase investments in infrastructure based on the actual demands of track and field training, optimize the guarantee level of track and field training equipment within the campus, and ensure that venues and equipment meet national track and field training standards, thereby enhancing students' track and field training experience.

4 Analysis of Factors Influencing the Training of High-Level Track and Field Athletes

4.1 Personal Factors in Students' Track and Field Training

Students' physical fitness and training level directly affect the level and performance of track and field training. Improving track and field performance is inherently challenging ^[3]. Taking the samples from three universities as examples, students' track and field performance is tested annually, but few students show significant improvements. Effective training plans and good physical fitness are the foundations for achieving good track and field performance benefits. During the survey visits, it was found that in 2023, the pass rate of track and field project assessments for the surveyed students from the three universities was only 30%. Considering the overall assessment of students' physical fitness, physical condition, and track and field project performance, only 15% reached excellence. This shows that students' personal factors are one of the main factors affecting the effectiveness of track and field training and are also the key issues in improving the track and field performance of the surveyed university students ^[4]. If personal physical fitness and physical training are not emphasized, even with well-established track and field training systems, it will be difficult to make significant breakthroughs in athletic performance.

4.2 Factors Related to Coach's Level

High-level track and field coaches play an important role in improving the track and field performance of university students. Experienced coaches are better able to design reasonable training plans, tasks, and competitions based on students' actual physical fitness. The track and field coaches at the three sampled universities all have rich teaching experience, which is greatly helpful in improving students' track and field training levels and performance ^[5]. In university track and field training, the coach's level is one of the factors influencing students' track and field strength. Although the track and field coaches at the three surveyed universities have obtained track and field teaching qualifications, they lack experience in leading competitions. Moreover, the daily teaching tasks arranged by the universities also include the planning and implementation of track and field sports projects, making the already limited number of coaches even more stretched. This has a certain impact on the implementation of students' track and field training ^[6]. Among the three universities, only one university has coaches with experience in leading competitions. In addition, there are few opportunities for daily study and teaching training, which is not conducive to the optimal design of university track and field training tasks.

4.3 Investment and Support Factors from Universities

The limited funding for university track and field training activities is also a core factor affecting track and field training. The three surveyed universities are provincial universities with limited subsidies for specialized track and field training funds. As a

result, funds for daily training, equipment updates, venue construction, etc., are mostly borne by the universities themselves [7]. With the increase in student enrollment, the number of students participating in track and field training has also increased proportionally. However, the growth rate and proportion of university track and field training funds are far lower than the number of enrolled students, leading to restrictions on the daily hardware updates and activity development of the three universities. In addition, with the increasing requirements of sports power for university track and field training and the diversified demands of teachers and students for sports training, the subsequent demand for investment in venues, equipment, testing, and facilities will continue to expand. However, funding constraints have always hindered the implementation of such work.

4.4 Comprehensive Management and Evaluation Factors

Generally, the design of university track and field training plans should take into account students' academics. However, in practical work, the management of students' academics is relatively one-sided, with more emphasis on daily track and field training and competitions while neglecting students' cultural curriculum education. At the same time, there are also omissions in ideological education and life management during track and field training. To improve students' track and field training performance and level, it is necessary to not only design reasonable training sessions but also balance students' cultural cultivation and ideological and political literacy. This will improve the traditional track and field training assessment system to promptly correct training issues. The current track and field training assessment management of the surveyed universities still has room for improvement and needs to further address related issues and leverage the benefits of evaluation to aid training.

5 Optimization Approaches for Track and Field Training in Colleges and Universities

5.1 Innovating Educational Content to Cultivate Professional Athletes

Track and field training in colleges and universities should further expand and optimize training content, creating reasonable training activities tailored to students' individual professional abilities, thereby enhancing their strength in track and field events. This process should shift traditional training concepts, balancing physical conditioning with the entertaining and enjoyable aspects of track and field training, enriching training programs, and cultivating students' interest in participating in track and field training. For instance, beyond regular physical conditioning, introduce visually appealing track and field events such as obstacle courses and recreational walking. Additionally, organize students to engage in entertaining track and field activities, creating track and field games centered around the distinctive characteristics of various track and field events to stimulate students' enthusiasm for autonomous training, fos-

tering a lifelong sports mindset, and thereby strengthening personal physical fitness and track and field athletic ability.

For teachers, they should acknowledge the value of students' participation in track and field sports. While ensuring entertainment, add specialized training. For non-sports majors, in addition to designing entertaining training activities, professional track and field training should also be enhanced. Since some students lack a foundation in track and field sports, they face greater training difficulties, longer adaptation periods, and increased energy and physical expenditure. Without reasonable training design, it is challenging for students to improve their track and field levels. Against the strategic background and educational requirements of building a sports power, the promotion of competitive spirit should be highlighted in track and field training. Therefore, track and field training design should not only include systematic training programs but also reasonable competitive confrontation projects and differentiated grouping training plans tailored to students' physical fitness and ability levels. For schools, they should organize large-scale track and field meetings annually and regularly conduct physical fitness training assessments for students, collecting track and field training data to continuously improve track and field training in colleges and universities, stimulating students' team spirit, sense of honor, and competitive spirit.

5.2 Strengthening Venue Construction and Improving Teacher Resources

With the surge in college enrollments, higher requirements have been placed on college track and field venues, training plans, and coaching staff development. On the one hand, it is necessary to deepen the construction of sports venues, and on the other hand, it is essential to continuously improve training equipment and facility guarantees to ensure that sports training and activity design can meet students' demands. According to the requirements of the "Guiding Outline for the Sports Curriculum System in Ordinary Colleges and Universities Nationwide," colleges and universities should continuously deepen the construction and improvement of training venues to ensure they meet students' training demands. Especially against the backdrop of a continuous increase in student numbers, it is crucial to further improve infrastructure construction and enrich training equipment. Focus on outdoor venues, adding auxiliary runways and starting devices to the existing runways. To address the impact of weather factors on track and field training, it is also necessary to improve indoor training venue construction, promptly replace indoor venue facilities, and repair outdated training equipment.

Regarding coaching staff development, it is necessary to further improve coaching ability training activities, introduce professional track and field coaches with team-leading experience, and build a coaching team with excellent quality, high energy, and sufficient ability. Additionally, apart from improving the coaching staff training mechanism, it is also necessary to strengthen the ideological and moral construction of coaches, deepening their understanding of the relationship between college track and field sports and building a sports power. Coaches should set personal examples of "lifelong sports and moral education" to guide students in conducting track and field training. College track and field coaches should not only guide stu-

dents in solidifying theoretical knowledge and project skills but also pay attention to the development of students' physical and mental states, helping students establish a lifelong sports concept and form a conscious awareness and habit of engaging in track and field training. Invite provincial, municipal, and even national outstanding track and field athletes to the school for guidance and exchange activities, gain insights into the training philosophies and experiences of frontline track and field athletes, and improve the track and field training level of the school's coaches.

5.3 Establishing a Diversified Evaluation System

During track and field training in colleges and universities, attention should be paid to the construction of the training system to ensure the completeness and effectiveness of track and field training, optimizing training outcomes and quality. The core of track and field training is physical conditioning, a concept widely accepted in most colleges and universities. Therefore, it is necessary to continuously deepen the construction and improvement of the track and field training system. To achieve this, foreign advanced training mechanisms can be drawn upon, and tailored physical conditioning plans adapted to students' physical conditions should be developed in combination with the actual situation, fully showcasing students' potential in track and field events and motivating their enthusiasm and passion for participation in training. In addition, teachers should design a special evaluation system for students' track and field events, targetedly improving system design. Furthermore, teachers should create a comprehensive teaching evaluation system, developing differentiated training content based on students' differentiated data and clarifying the physical conditioning system based on students' assessment results. During coaching evaluations, assessments should not be concentrated solely at the end of the semester but should establish a stepped evaluation mechanism for students' phased training tasks throughout the process. This should focus not only on students' physical development but also on the effectiveness of cultivating their ideology, morality, and sports literacy. In this way, teachers can more accurately grasp students' phased performance in different track and field events, understand their track and field athletic levels, lay the foundation for targeted design of subsequent project training, and improve students' physical fitness.

Additionally, enhance the flexibility of track and field training evaluations. During the design of track and field event evaluations in colleges and universities, traditional evaluation thinking should be changed from a single evaluation of event results to a diversified evaluation design encompassing students' results, participation, and literacy, maximizing the proportion of process evaluation in the overall evaluation. This allows all students participating in track and field training to understand their event weaknesses and experience the charm of gradual progress through continuous evaluation. Coaches should focus on guiding students to build self-confidence through praise and encouragement, enabling students to gain motivation to continuously participate in track and field events from fair evaluations.

In summary, due to significant differences in students' track and field abilities and physical fitness, the approach to track and field assessments cannot be a one-time exam. Instead, the focus should be on phased evaluations, using students' physical

fitness development as a differentiated criterion for evaluation and assessment. This can reduce the pressure on students with weaker physical fitness to participate in track and field events and eliminate their resistance and reluctance to engage in track and field events.

6 Conclusion

As an essential sport for China to achieve its strategic goal of becoming a leading sports nation, track and field should occupy a central position in the construction of physical education mechanisms in colleges and universities. The standard of track and field training in colleges and universities is crucial to the effective improvement of students' physical and sports literacy. In the face of current teaching difficulties in track and field sports, it is necessary to design training tasks reasonably based on track and field training and students' differentiated participation. Especially against the backdrop of China's continuous efforts to promote the strategy of becoming a leading sports nation and the reform of quality education, it is even more important to focus on students' demands for participation in track and field events, update training concepts, enhance cognitive awareness of sports participation, and serve the improvement of students' track and field training performance in colleges and universities. Based on the existing track and field training mechanism, we should optimize training content, training methods, and evaluation systems. By optimizing the atmosphere of track and field sports in colleges and universities, reforming the track and field training environment and system, we can create an optimized path for college track and field training that meets the requirements of the strategy for becoming a leading sports nation, making track and field courses a favorite among students.

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