

Research on the "Skill Interoperability+Quality Mutual Recognition" Training Model for Sports Talents in Higher Vocational Colleges under the Background of the "Belt and Road Initiative"

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Abstract: This study uses methods such as the literature review to conduct an in-depth analysis of the practical problems encountered in the "skill interoperability and quality mutual recognition" training model for sports talents in higher vocational colleges within the Belt and Road Initiative framework, and to propose corresponding training models and promotion pathways. The main problems identified include: lack of systematic training objectives, insufficient emphasis on professional development, overly singular training approaches, and weak market awareness. The research constructs a composite training model for sports talents across four dimensions—goal positioning, content design, methodological implementation, and evaluation methods—and proposes the following promotion pathways. First, clarify training objectives and improve the quality of talent cultivation. Second, enrich training content and strengthen the practical abilities of talents. Third, optimize training methods and broaden channels for talent cultivation. Fourth, enhance the evaluation system and promote the orderly flow of talents. Through these measures, the study aims to provide theoretical support and practical guidance for cultivating sports talents in higher vocational colleges under the Belt and Road Initiative, with the goal of developing more high-quality sports talents who can meet the needs of the international market.

Key words: The Belt and Road Initiative; Higher vocational colleges; Sports talents; Skill interoperability; Quality mutual recognition

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Amid deeper regional integration and international cooperation, Chinese higher vocational colleges face new opportunities and challenges in cultivating sports talents. The regional sports industry's rapid expansion increases demand for composite professionals who merge sport-specific skills with business acumen and innovation. Current tensions include a scarcity of versatile talents and ineffective training models. Colleges should develop a robust composite-talent training framework, implement practical pathways, and align cultivation with market demand to enhance talent quality and support sustainable sports-industry growth.

1 Practical Problems in the "Skill Interoperability+Quality Mutual Recognition" Training of Sports Talents

1.1 Lack of Systematic Design in Training Objectives

Currently, most sports majors in Chinese higher-vocational colleges stay within physical education and lack a systematic framework anchored in "skill interoperability+quality mutual recognition," leading to broad, repetitive objectives. National standards are unclear, and college goals are often abstract with no explicit competencies for composite talents; for example, a Sports Operation and Management major may promise to cultivate "outstanding professionals" without specifying required tools or abilities. Objective duplication across institutions creates a homogeneous talent pool and misaligns with market demand. Moreover, curricula tend to favor competitive-sports tracks (athletes, coaches, referees)

while underemphasizing industry roles such as event operation, venue management, and sports communication, resulting in content and performance standards gaps. To address this, we should establish hierarchical, multi-directional training objectives centered on skill interoperability+quality mutual recognition, integrate industry-demand modules (operations, communications, venue management), reduce homogenization, and tighten alignment with industry needs. This requires unified standards, stronger school–enterprise collaboration, and curriculum-system reform to ensure coherence among objectives, courses, evaluation, and market requirements.

1.2 Weak Professional Construction

Professional construction—encompassing major setting, program implementation, faculty planning, and teaching reform—forms the foundation of talent quality. Under the “skill interoperability+quality mutual recognition” framework, its late start and short development have created a lag. Key problems include curriculum design that lacks professionalism, with courses still anchored in traditional physical education and emphasizing sport-specific skills while neglecting essential industry knowledge; few industry-oriented courses and no clearly industry-characterized curricula, hindering students’ competitiveness; and across colleges, industry knowledge is only superficially covered, with scarce specialized programs and a persistent emphasis on traditional sports disciplines over professional theory, practical training, and sector-focused public courses. There is an urgent need for a robust teaching staff: many PE instructors enter teaching soon after graduation and lack practical coaching experience, while retired athletes often lack theoretical grounding in sports industry management and marketing. Therefore, we must deepen the integration of sports-industry knowledge at the curriculum level, build professional curricula and practical training with industry features, and cultivate an industrialized, multidisciplinary teaching workforce. This requires advancing industry–education integration and school–enterprise collaboration to improve course delivery and talent quality, as supported by prior evidence.

1.3 Single Training Method

Training methods are the core means to achieve goals — delivery, guidance, and governance. Scientific, practice-oriented approaches raise talent quality and meet market demand for composite skills. Under skill interoperability+quality recognition, current training is narrow: lectures dominate, and facilities and safety constraints favor theory over industry-ready practice, reducing competitiveness. Learning is often passive, with few inquiry- or task-based approaches. Organizations run in silos with centralized control and limited market responsiveness, misaligning graduates with employer needs. To fix this, integrate teaching, guidance, and governance; adopt an industry – education model using project- and case-based pedagogy aligned with standards; foster school-enterprise governance and broader social participation; co-design tasks and assessments with stakeholders to strengthen cross-disciplinary, practical skills and industry alignment.

1.4 Weak Market Awareness

Talent cultivation in higher vocational colleges should be market-driven, guided by labor demand. Under “skill interoperability+quality mutual recognition,” weak market sensitivity hampers building a robust, multi-skilled pool. Key deficiencies include curricula and practices that ignore market needs, lag industry changes, and fail to update content. For example, sports-venue operations require practical skills that many courses omit, misaligning training with job needs. Talent output has long been treated as the end goal with limited market input into resources, reducing effectiveness and employment outcomes; provincial efforts are hampered by weak employment security and poor market absorption. Collaboration remains superficial—joint governance or internships with unilateral corporate inputs and narrow reach—yielding little ROI. To fix this, design curricula around real job capabilities, deepen school–enterprise collaboration and broaden social participation, and create a closed loop linking curriculum, training, and employment. This requires market-driven reform, robust industry–education governance, and ongoing social-sector engagement to translate labor-market signals into actionable educational strategies.

2 Construction of the "Skill Interoperability+Quality Mutual Recognition" Training Model for

Sports Talents

2.1 Objective Positioning: Composite Talents

Before designing the training model, define objectives clearly, as they determine feasibility. In the sports industry, composite talents—the all-rounders—drive high-quality development amid segmentation and cross-border integration. They fuse theory, practical operations, and cross-disciplinary problem-solving across sports-industry management and service operations. Cultivation should be industry-aware and aligned with labor-market trends, ensuring graduates can fill organizational and managerial roles, provide social services, and teach professional skills, thereby broadening employment prospects and supporting sustainable sector growth.

This requires multi-stakeholder participation: universities, enterprises, industry associations, and others collaborating to design targeted training plans, cohesive curricula, hands-on platforms, and evaluation frameworks. Through deep school–enterprise collaboration and joint development of industry resources, we should foster innovations in content, pedagogy, and assessment, integrating theory with practice to meet market needs.

2.2 Content Setting: An Interdisciplinary and Integrated Curriculum System

Before implementing the “skill interoperability+quality mutual recognition” model, align curriculum design with professional program construction. Many higher-vocational PE courses—track and field, ball games, fitness guidance—still emphasize theory or isolated practice, hindering composite talents who need theory plus cross-scenario application. Disciplinary barriers should be broken to integrate PE with management, marketing, physiology, social services, and related fields into a cohesive curriculum. As the sports industry segments, cross-border integration capabilities are increasingly demanded.

To meet market needs, curricula should ensure graduates master theory and technique while showing innovation and teamwork. Instructors must strengthen cross-disciplinary teaching and be able to evaluate sports processes, discuss progress, costs, and resource allocation within management contexts, so graduates can navigate complex organizations and multi-stakeholder environments. Propose a complementary curriculum: sports professional theory+practical+cross-disciplinary theory and practice. Integrate PE with management, marketing, social services, and related disciplines to strengthen organizational leadership, social services, and professional expertise, aligned with job requirements in a segmented, cross-border market. Achieving this requires competency mapping, industry-standard learning outcomes, and project- and case-based pedagogy to fuse theory and practice across disciplines.

2.3 Method Implementation: A Teaching Model Integrating Theory and Practice Effectively

Under the skill interoperability+quality mutual recognition model, instruction should align with professional programming to cultivate composite talents through an actionable, interdisciplinary curriculum that keeps pace with industry upgrades. A case in point is a sports vocational college collaborating with a local industry group to build an experiential training base where faculty teach theory and the enterprise provides venues and frontline mentors. Students study theory, manage venue operations, and participate in pre-event planning and on-site execution, developing management, technical, and service competencies. The approach is student-centered and flexible: teams organize campus events, offer community fitness guidance, and act as junior instructors, with training reinforced by provincial competitions and clubs to continually sharpen practical skills. The college also runs an interdisciplinary system—sports management+venue operation—sharing resources with other institutions to cultivate management- and service-oriented talents. Internships deepen school–enterprise cooperation through a dual-track model: college instruction plus enterprise placements in venue operation, events, and youth training; mentors provide ongoing guidance, inspections, maintenance, ticketing, and customer service. Students then submit an operation-improvement plan to ensure skill growth and immediate job readiness.

2.4 Evaluation Method: An Intelligent Public Service Platform for Talent Information

Under the skill interoperability+quality mutual recognition framework, the evaluation phase acts as the acceptance step, verifying that prior steps met objectives. Rather than building a new system, an intelligent governance approach uses a

public-service talent-information platform to sharpen assessment rigor and timeliness, expanding beyond student metrics to include diverse stakeholders across the sports-talent ecosystem. The platform serves as an integrated hub recording data along the value chain—from experts and event managers to market development staff, maintenance teams, promoters, instructors, and coaches—enabling enterprises and institutions to query talent profiles and obtain real-time job-demand and supply updates for agile industry alignment.

Evaluation blends automated data collection (practical training records, course scores, enterprise feedback) with human-in-the-loop assessments focused on professional competencies and job fit. This hybrid approach enhances rigor and efficiency, with governance provisions safeguarding privacy and data quality across departments. Data cover the full talent lifecycle—recruitment, placement, and post-employment development—to support sustainable information flow and informed curriculum refinement. Market signals guide training direction and practicum adjustments to stay responsive to shifts in demand.

Beyond internal assessment, the platform links enterprises, industry associations, colleges, and other stakeholders for supply-demand alignment and collaborative governance—transparent reviews of training directions, visible job demands, and standards updates. In the long run, it should evolve into a scalable, open, data-driven governance model that continuously improves training programs, strengthens school–enterprise collaboration, and supports evidence-based policy and practice in talent development.

3 Promotion Pathways of the “Skill Interoperability+Quality Mutual Recognition” Training Model for Sports Talents in Higher Vocational Colleges under the Belt and Road Initiative Context

3.1 Clarification of Training Objectives and Enhancement of Talent Quality

To implement this training model within the Belt and Road framework, the priority is to set clear objectives that fuse sport, education, industry, and cross-border services, cultivating talents for domestic and international markets. The pathway links theory with on-site practice and Belt and Road case studies to impart professional knowledge and international-cooperation insights. Three approaches: 1) define directions to develop practical talents for social needs and cross-border sports business—event planning, community fitness guidance, industry management, service logic, and international collaboration; 2) emphasize interdisciplinary integration bridging sports knowledge and cross-border acumen, pairing sports event operation with basic international trade, fitness guidance, and cross-cultural awareness, in co-design with colleges and enterprises; 3) strengthen practical linkages by deepening school–enterprise collaboration, establishing cross-border project bases, and delivering real projects to tightly couple theory and practice, boosting innovation and commercial insight. Innovative teaching models—small classes and tutor systems from academia and Belt and Road projects—should pair with formal collaboration mechanisms and periodic reviews, with co-designed courses and benchmarks aligned to international standards. Evaluation should cover knowledge integration, practical performance, cross-cultural communication, and readiness for international collaboration, ensuring graduates meet domestic and global employer needs and contribute to the global sports economy.

3.2 Enrich Training Content and Strengthen the Practical Abilities of Talents

Under the "skill interoperability+quality mutual recognition" framework, training content spans three domains: sports skills, industry management, and services. Given Belt and Road cross-border needs, we must cultivate talents for domestic and international markets, balancing professional competency with practical ability and demand-driven tailoring. Clear objectives define directions such as cross-border event execution and fitness guidance along the BRI routes, aligned with a coherent curriculum. For practical talents, emphasize hands-on operation with cross-border event simulations and multilingual demonstrations, plus social-sport guidance and sports-science foundations to form a tiered talent pool. For management-oriented talents, integrate sports and management curricula, covering international venue operation, cross-border cost control, and policy interpretation along the BRI routes, using regional case studies to foster cross-cultural coordination. For service-oriented talents, prioritise service and communication skills, with training in daily venue operation,

customer service, and cross-cultural preferences to ensure immediate employability. Interdisciplinary collaboration is essential: PE teachers with management, economics, and trade experts co-design curricula, while government bodies, universities, enterprises, and industry associations jointly establish cross-border training bases, standards, and certification. Align supply with industry demand through multi-party collaboration and iterative refinement, building a dynamic, internationally oriented sports-talent pipeline.

3.3 Optimize Training Methods and Expand Talent Cultivation Channels

Optimizing training methods and expanding cultivation channels respond to evolving Belt and Road sports-industry demands. With rapid growth in cross-border sports enterprises, we need flexible, integrated pathways that pool dispersed resources into modular curricula, cultivating talent for domestic and international markets by blending sports science, management, economics, and cross-cultural communication. Interdisciplinary integration is essential: physical education should incorporate economics, management, and international business, offering courses such as Sports+Economic Analysis, Cross-border Sports Project Management, and Multilingual Fitness Services; promote cross-college training and project-based learning to develop practical skills and cross-border etiquette; and align theory with practice for managing international event workflows, regulatory issues, and stakeholder expectations. Resource optimization requires harmonized venues and equipment, with cross-border assets and data repositories shared through regional alliances (e.g., Southeast Asian Sports Venue Alliance) to bring authentic scenarios into classrooms and enable planning, service-design, and operations simulations; a centralized platform should support scheduling, facilities management, and industry data exchange. A governance-driven school–enterprise collaboration mechanism—on-campus mentors, joint project bases, enterprise-based evaluation, and cross-border certification—creates a closed-loop ecosystem with clear KPIs and feedback to sustain curriculum relevance and meet global market needs.

3.4 Improve the Evaluation System and Promote the Orderly Flow of Talents

Optimizing the evaluation system within the "skill interoperability+quality mutual recognition" framework provides governance to raise talent quality and cross-border mobility. Its core is a closed loop of rating, placement, and assurance that links training, certification, and deployment. Although coaches and social-instructor certifications exist, unified standards for emerging roles—cross-border event operation, sports technology, and venue management—are missing, hindering composite-talent development. We should establish hierarchical standards: junior for basic tasks, intermediate for cross-border team collaboration, and senior for full-process coordination, and pursue mutual recognition between domestic certificates and Belt and Road partner standards to ease cross-border employment. A cloud-based platform should integrate higher-education data, enterprise demand, and industry gaps to form a full-chain monitoring system from training to placement; evaluation criteria and job needs should be publicly accessible, with post-employment performance tracked to refine curricula, turning the platform into a bridge between supply and demand and improving employment quality. To address under-placement, create a cross-border talent service portal offering social security, language training, subsidies, and related services. Government measures should include funding for cultivation, tax incentives, housing support, and incentives for professionals in cross-border investment, financing, and international events, plus mutual recognition along BR routes and exchanges such as training camps. Finally, foster government–university–industry collaboration to establish a closed-loop mechanism—cultivation, evaluation, employment, re-evaluation—with governance and periodic reviews to ensure rapid talent flow, local employment, and Belt and Road development.

4 Conclusion

BRI expansion offers unprecedented opportunities for China's sports industry, especially talent cultivation in higher vocational colleges. The "skill interoperability+quality mutual recognition" training model is pivotal for rapidly forming a high-quality talent pool and advancing industry development, supporting China's goal of becoming a leading sports nation and boosting international competitiveness. It provides new theoretical insights and practical directions, raises skill levels and international recognition, and strengthens Belt and Road exchanges. We should accelerate a talent system centered on higher vocational colleges, complemented by social cultivation and international cooperation, aligned with national

strategies like mass fitness and Healthy China, to accelerate toward global leadership. This diversified, internationally oriented approach promises deeper, broader achievements in China's sports sector.

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