

# *Innovation and Effectiveness Evaluation of University Badminton Training Model under the "Dual-channel" Approach*

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**Keywords:** University, badminton, training model, dual-channel, effectiveness evaluation

**Abstract:** This article explores the innovation and effectiveness evaluation of the university badminton training model under the "dual-channel" approach, referring to both online and offline channels. Through in-depth research on the design and implementation of dual-channel training, the article summarizes innovative training models and empirically assesses their effectiveness in improving students' skill levels and cultivating comprehensive qualities. The research results provide new insights and methods for university sports training.

## 1. Introduction

With the continuous development of university sports training, to better adapt to the diverse needs of students and promote the comprehensive improvement of sports skills, this article proposes the "dual-channel" university badminton training model. This model combines online and offline training resources, aiming to enhance students' comprehensive qualities through innovative training methods. The article aims to provide comprehensive analysis and evaluation of the model's design and implementation, assessing its effectiveness in improving students' skill levels and cultivating comprehensive qualities, thus offering new theoretical support and practical experience for university sports training.

## 2. Design of the Dual-Channel Training Model

### 2.1. Overview of the Dual-Channel Training Model

With the rapid development of information technology, university badminton training faces more complex and diversified challenges. In order to better adapt to students' learning needs, we propose an innovative training model—the "dual-channel" training model. This model combines both online and offline training channels, aiming to comprehensively enhance university students' badminton skills and cultivate their comprehensive qualities.

In this model, online and offline training are no longer isolated components but achieve complementary effects through effective integration. Online training provides theoretical knowledge and skill video teaching through online platforms, offering students flexible learning time and space.

Offline training focuses on practical exercises, providing face-to-face guidance and on-site training by professional coaches, helping students better transform theoretical knowledge into practical skills.

The design philosophy of the "dual-channel" training model is based on integration and complementarity. Online training can provide a theoretical foundation for offline training, enabling students to conduct practical exercises more targetedly. Conversely, offline training deepens students' understanding of online learning content, forming a more complete knowledge structure. The integration is not merely stacking online and offline content but creating an organic unity through design. [1]

This training model emphasizes the consideration of personalized needs. Students can choose learning methods that best suit their styles based on their individual situations. Students proficient in independent learning can utilize online resources more, engaging in autonomous learning and reflection. On the other hand, students who prefer group activities and real-time guidance can participate more in offline practices to receive more direct teaching feedback.

The expected outcome of the "dual-channel" training model is to comprehensively enhance students' badminton skills and comprehensive qualities. Through the synergistic effects of online and offline collaboration, students can not only master badminton skills and tactics but also develop soft skills such as teamwork, communication, and self-management. This contributes to better unleashing students' potential and forming a well-rounded structure of qualities for their university life. [2]

## **2.2. Innovative Training Methods**

To better adapt to the "dual-channel" training model, we have innovated in the design of training methods to enhance students' learning engagement and training effectiveness. This innovation is primarily reflected in online group learning and offline practical guidance.

### **2.2.1. Online Group Learning**

In the "dual-channel" training model, online group learning serves as a crucial innovation, providing students with a broad learning space. By establishing a virtual learning community, we facilitate deep interaction among students, transforming learning from individual actions into collective efforts.

In the virtual learning community, students collaborate in groups to solve tasks, promoting the depth and breadth of learning through collaborative problem-solving. Dedicated discussion boards and real-time messaging functions provide convenient avenues for subject-related communication, enabling the rapid dissemination of knowledge within the group. This mode of subject communication not only enhances students' deeper understanding of badminton theoretical knowledge but also increases the interest and engagement in learning.[3]

Furthermore, teachers can understand students' learning situations in real-time through observation of discussions and interactions online. By observing student discussions and interactions, teachers can gain more accurate insights into students' understanding levels, points of confusion, and subject interests. This provides teachers with opportunities for timely intervention and assistance, thereby better supporting students' learning processes.

Overall, online group learning plays a crucial role in the "dual-channel" training model, bridging the gap between students, subjects, and teachers, promoting collaborative knowledge construction and sharing, and providing a solid foundation for the successful implementation of the training model.

### **2.2.2. Offline Practical Guidance**

In terms of offline practical guidance, we have introduced a professional coaching team to provide more personalized guidance services for students, aiming to organically combine theoretical

knowledge with practical operations to achieve a comprehensive improvement in students' badminton skills.

Each coach possesses extensive experience and expertise in badminton teaching. They are not only proficient in basic badminton techniques but also capable of in-depth analysis of advanced tactics and game strategies. Through face-to-face interaction with students, coaches can accurately observe students' movements, identify issues, and provide timely and effective corrections and guidance.

To better meet the needs of students at different skill levels, we have implemented a differentiated training program. Based on detailed assessments of students' skill levels, we can accurately identify each student's technical bottlenecks and improvement areas. This enables us to tailor personalized training plans for each student, focusing precisely on their weaknesses while ensuring the comprehensiveness and systematicity of training. [4]

Through the introduction of a professional coaching team and the implementation of differentiated training, our goal is to provide a more effective learning experience, allowing students to better understand and apply the knowledge learned in practical operations. This personalized guidance service not only facilitates rapid improvement in students' skill levels but also stimulates greater interest in learning, increasing their enthusiasm and dedication to badminton sports.

### **2.2.3. Integration of Teaching Methods**

In the "dual-channel" training model, online group learning and offline practical guidance are not independent but closely integrated to form a comprehensive teaching system. This integration aims to fully leverage the advantages of online and offline, creating a richer and more efficient learning experience.

Online group learning provides students with a theoretical foundation and opportunities for group collaboration. By constructing a virtual learning community, students can freely discuss and share experiences, forming a learning community. This open academic atmosphere helps stimulate students' thinking and creativity, promoting the deep exchange of knowledge.

Simultaneously, offline practical guidance emphasizes practical operations and personalized guidance. The intervention of a professional coaching team enables students to receive precise guidance in on-site training, implementing a differentiated training program based on individual differences. This personalized teaching method helps better meet students' individual learning needs, enhancing their skill levels.

The organic integration of these two methods allows students to form good interactions between theoretical learning and practical operations. Theoretical knowledge is consolidated through practical exercises, and problems encountered in practice can be resolved through theoretical learning. This comprehensive teaching model better aligns with the practical needs of subject learning, improving the effectiveness and depth of learning. Through these innovative training methods, we aim to stimulate students' interest in learning and enhance their subject capabilities.

Simultaneously, we will continuously adjust and optimize these methods to ensure the innovation and effectiveness of the training, enabling students to better adapt to the characteristics of the "dual-channel" training model. [5]

## **2.3. Implementation Plan**

To ensure the orderly progression of the "dual-channel" training model, we have formulated a detailed implementation plan, focusing on training course design and teaching team construction.

### **2.3.1. Training Course Design**

In terms of training course design, we have integrated online and offline course structures to ensure

mutual coherence and avoid redundant content.

Firstly, we carefully designed online courses, including theoretical knowledge and skill video teaching, online group discussions, and personalized learning paths. The online transmission of theoretical knowledge is achieved through professional video demonstrations, helping students better understand the technical and tactical essentials of badminton. Online group discussions provide a platform for students to discuss subject-related issues and share experiences, promoting in-depth subject communication. The setting of personalized learning paths allows each student to complete training at their own learning pace. [6]

Secondly, we meticulously designed offline courses, including practical exercises and demonstrations, collective collaboration training, and real-time feedback and adjustments. Practical exercises and demonstrations are conducted in on-site training venues, providing more intuitive badminton skill training. Collective collaboration training reinforces the collaborative ability among students and nurtures teamwork. Real-time feedback and adjustments are provided by the coaching team through face-to-face guidance and feedback, ensuring effective adjustments to students' training plans and improving training effectiveness.

### **2.3.2. Teaching Team Construction**

In terms of teaching team construction, we focus on introducing high-level coaches to build a professional and efficient teaching team.

Firstly, through recruitment and selection, we have introduced a professional coaching team with a background in badminton and rich teaching experience. The selection criteria for coaches cover factors such as teaching experience, communication, and collaboration abilities, ensuring that each coach is competent for both online and offline teaching tasks.

Secondly, we have established a teacher training system, regularly conducting training plans that include updates on badminton techniques and innovative teaching methods. Through an interactive exchange platform among coaches, mutual progress among the teaching team is promoted. Through these targeted measures, we ensure the organic integration and efficient progress of the "dual-channel" training model in the implementation process. In actual operation, we will continuously optimize the plan based on student feedback and training effects to ensure the professionalism and effectiveness of the training.

## **3. Evaluation Methods and Indicator System for Effectiveness**

### **3.1. Method Selection for Evaluation**

In the "dual-channel" training model, for a comprehensive and scientific evaluation of training effectiveness, we need to carefully analyze different evaluation methods and select those suitable for the dual-channel training model. The following are our specific considerations and choices:

#### **3.1.1. Quantitative Evaluation Methods**

In the "dual-channel" training model, quantitative evaluation methods provide objective and specific feedback on training effectiveness through quantified data. We will employ the following quantitative evaluation methods:

**Student Badminton Skill Level Testing:** We will design systematic and comprehensive badminton skill tests covering basic movements and tactical applications. These tests will be conducted regularly to comprehensively assess students' improvement in badminton skills. By measuring students' badminton skill levels, we can objectively evaluate the actual effectiveness of the training and formulate targeted improvement plans based on the test results.

Online Learning Platform Data Analysis: Utilizing data recorded on the online learning platform, we will conduct in-depth analysis of students' learning behaviors, including study duration, interaction frequency, and completion of assignments. Through comprehensive analysis of this data, we can understand how students utilize online resources and evaluate the effectiveness of online learning. This method not only provides objective learning indicators but also reveals students' learning preferences in different subjects and skills, serving as a reference for further optimizing teaching.

By employing these quantitative evaluation methods, we can gain a more comprehensive understanding of students' learning outcomes and training effectiveness in the "dual-channel" training model. These objective data will provide a scientific basis, facilitating continuous improvement of the training program to better meet students' learning needs.

### **3.1.2. Qualitative Evaluation Methods**

In the "dual-channel" training model, qualitative evaluation methods focus on obtaining students' subjective feelings and experiences, providing a deeper understanding alongside quantitative evaluation. We will use the following qualitative evaluation methods:

Interviews: Conducting regular interviews with students aims to understand their feelings, concerns, and expectations regarding the training model. By employing open-ended interview questions, we can obtain deeper feedback information from students. This proactive communication method helps reveal students' authentic experiences during the training process, providing valuable insights for teaching improvements.

Observation: Observing students during offline courses and practical sessions focuses on their interactions, cooperation, and performance in practical exercises. Observation is an intuitive and effective method, allowing us to gain a more comprehensive understanding of the training model's performance in practice by observing students' actual behaviors. This qualitative evaluation method helps capture individual differences and potential issues in students' badminton training.

By applying these qualitative evaluation methods, we can gain a deeper understanding of students' experiences and feedback in the "dual-channel" training model. These methods provide us with more detailed and vivid student portraits, offering powerful guidance for adjusting and improving the training program.

### **3.1.3. Comparative Analysis Methods**

Comparative analysis methods can clarify the specific advantages and improvement areas of the "dual-channel" training model. We will adopt the following comparative analysis methods:

Comparison with Traditional Training Models: Selecting a traditional training model under similar conditions for comparative analysis, focusing on differences in student learning outcomes, learning experiences, and training efficiency. This will help highlight the characteristics and advantages of the "dual-channel" model.

By comprehensively applying the above evaluation methods, we can understand the effectiveness of the "dual-channel" training model from various perspectives, providing robust data support for subsequent improvements and optimizations. This comprehensive evaluation method not only focuses on the improvement of students' skills but also aims at cultivating students' comprehensive qualities and independent learning abilities, offering a comprehensive reference basis for enhancing training quality.

## 4. Empirical Research and Results Analysis

### 4.1. Characteristics of the Trained Student Group

In dual-channel training, we first focus on the characteristics of the trained student group to better understand the differences in training effects and influencing factors. The following is a detailed description and data analysis of the characteristics of the student group.

The training covered students from different grades, forming a multi-grade participant group. This cross-grade span helps foster cross-grade collaboration and communication among students, providing a solid platform for comprehensive quality cultivation. Additionally, we pay attention to the distribution of male and female students in training, ensuring gender balance to promote equal learning opportunities between genders.

For the badminton proficiency level, we collected data on students' skill levels before training. This includes information on basic movements, mastery levels, tactical understanding, and other aspects. This data analysis will provide baseline data for subsequent analysis of training effects, aiding in comparing students' growth during training.

Through a detailed analysis of these characteristics of the student group, we can gain a deeper understanding of the background differences of trained students, providing robust data support for subsequent analysis of training effects and exploration of influencing factors.

### 4.2. Analysis of Training Effects

In the dual-channel training model, we conduct a comprehensive analysis of the actual effects of training on improving students' badminton skills and cultivating comprehensive qualities. By objectively evaluating aspects such as students' skill levels, teamwork abilities, and communication skills with data-supported assessments, we can fully understand the outcomes of the training.

**Skill Level Improvement:** Through the analysis of skill level test data, we can quantify the improvement of students in badminton skills. This includes changes in scores related to basic movements, tactical applications, and more. By comparing data before and after training, we can clearly observe the actual progress of students in skills, objectively assessing the effectiveness of the training.

**Comprehensive Quality Cultivation:** We focus on the effectiveness of cultivating students' teamwork and communication skills. By observing students' performance in practical sessions and analyzing data from collaborative training, we can understand whether the training successfully enhances students' comprehensive qualities. This analysis provides a comprehensive evaluation, further validating the overall effectiveness of the dual-channel training model.

Through these data-supported objective assessments, we can gain a more comprehensive understanding of the actual outcomes of the training. This information will serve as important references for future optimizations and improvements to ensure that the training model continues to effectively meet students' learning needs.

### 4.3. Exploration of Influencing Factors

Regarding the teaching methods influencing the effectiveness of dual-channel training, we will delve into the integrated effects of online group learning and offline practical guidance. Through badminton theory courses and professional skill videos, students have the opportunity for comprehensive learning. Virtual learning communities facilitate discussions, promoting knowledge sharing. Introducing a professional coaching team in practical training provides personalized guidance to help unleash each student's potential. We will explore how these methods innovate

training and their actual effects on improving students' skill levels and comprehensive qualities.

Student individual differences play a crucial role in training. We will focus on differences in students' badminton proficiency, subject understanding, and learning pace. Through in-depth analysis of these differences, we can determine whether differentiated training strategies should be applied. This helps provide tailored training plans for students with different proficiency levels and learning styles.

The effective utilization of online resources is key to dual-channel training. We will study in detail how students actually use the online platform, including study duration, visit frequency, and online interactions. This will help us assess the actual effectiveness of online resources while understanding students' attitudes toward online learning. By gaining a deep understanding of the practical use of online resources, we can propose more practical improvement suggestions to maximize the advantages of online resources.

Through these in-depth discussions, we aim to comprehensively understand various aspects of the dual-channel training model. Based on empirical data and student feedback, we will provide specific analyses and recommendations to guide the future development of the training model, ensuring it better meets students' learning needs.

## 5. Conclusion

Through an in-depth study of the design, implementation, and effectiveness evaluation of the dual-channel badminton training model in university settings, this paper draws the following conclusions: the dual-channel training model can effectively enhance students' badminton skills and promote the comprehensive development of their qualities. Innovative training methods and a scientifically rational evaluation system played a crucial role in the implementation process. However, the training effects are influenced by various factors, requiring further research and improvement. Overall, the dual-channel training model provides new avenues and perspectives for university badminton training, contributing positively to the innovation and development of university sports training.

## Acknowledgement

Project name: "One Center, Multi-subjects, two channels" Value analysis and construction strategy research of after-school service mode, project category: Autonomous Region planning project, project approval number: NGJGH2022333.

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