



The Innovative Pathways and Practical Exploration of Higher Vocational Physical Education Curriculum Reform in Guizhou under the Context of Physical Education Integration

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Abstract. This study addresses the current state of physical education (PE) curricula in higher vocational colleges in Guizhou, combining the theory of physical education integration to propose reform strategies, including diversified curriculum design, innovative teaching models, enhanced school-enterprise cooperation, and the application of information-based teaching methods. Quantitative and qualitative evaluations reveal that these reforms significantly improve student participation, course satisfaction, and sports performance. However, challenges remain in resource scarcity and limited faculty expertise. To further promote curriculum reform, recommendations include enriching curriculum diversity, improving faculty training, expanding the use of information technologies, and deepening school-enterprise partnerships. This research provides both theoretical and practical support for the sustainable development of higher vocational PE curricula.

Keywords: Physical Education Integration, Curriculum Reform, School-Enterprise Cooperation, Information-Based Teaching

1 Introduction

Vocational education has become increasingly significant within China's education system, particularly in cultivating skilled and applied talents^[1]. Physical education (PE) integration, which combines sports education with cultural education, has been gradually promoted across various educational institutions in recent years^[2]. However, PE curricula in higher vocational colleges often suffer from a lack of diversity and outdated teaching methods^[3], hindering the development of students' overall competencies. As a key province in Southwest China, Guizhou faces specific challenges in advancing PE integration within its vocational education system^[4].

PE integration not only contributes to improving students' physical health but also enhances their motivation to learn and fosters teamwork^[5]. While the integration of PE and academic education has developed more maturely abroad, its application in Chinese higher vocational colleges remains at an exploratory stage^[6]. Current research

mainly focuses on regular universities, with relatively fewer studies on vocational colleges. Moreover, existing reform outcomes in vocational PE curricula are limited^[7]. Table 1 compares the application of PE integration across different regions, considering factors such as curriculum design, teaching methods, and faculty resources. Due to Guizhou's unique geographic and economic conditions, vocational colleges in the province face multiple obstacles in their PE curriculum reform, including insufficient faculty and limited course resources.

Table 1. Comparison of Physical Education Integration in Different Regions

Region	Course Design Characteristics	Teaching Methods	Faculty Strength	Student Participation (%)	Course Resource Support
Beijing	Diverse courses with school-enterprise cooperation	Interactive and practical teaching	High proportion of PE professionals	85.3	Rich, sufficient resources
Shanghai	Integration of sports and moral education	Case-based teaching, innovative	Comprehensive faculty training system	80.5	High-level sports facilities
Guizhou	Course content is relatively simple, lacking in practice	Traditional lectures	Insufficient faculty, more part-time teachers	60.2	Limited resources, insufficient support
Guangdong	Focus on combining technology and sports, emphasizing practical skills	Project-based teaching, team-focused	Many sports research experts	82.7	Strong technical support, advanced equipment
Shandong	Sports courses combined with local culture, with regional characteristics	Multimedia-assisted teaching	Well-established teacher training mechanisms	78.4	Moderate level of support

This study aims to investigate the current state of PE curricula in several higher vocational colleges in Guizhou. By integrating advanced theories and practices of PE integration, the research proposes innovative pathways for curriculum reform and uses empirical analysis to validate the effectiveness of these reforms.

2 Research Methodology

The technical route of this study involved multiple stages, including data collection, data processing, analysis, and result validation. In the data collection stage, detailed questionnaires and interview outlines were designed, and data preprocessing such as data cleaning and missing value completion was carried out. In the data processing stage, statistical analysis was conducted using SPSS, while qualitative data were categorized and coded using content analysis software. Finally, multiple regression analysis was employed to validate the hypotheses regarding PE integration reform, and case studies were used to explore the feasibility of the reforms.

To ensure the reliability and validity of the study, a pilot survey was conducted during the questionnaire design stage, and the Cronbach's Alpha coefficient (0.87) was used to verify the internal consistency of the questionnaire, indicating a high level of reliability. Additionally, experts in the field of physical education reviewed the ques-

tionnaires and interview outlines to ensure the validity of the content. Throughout the data analysis process, both quantitative and qualitative methods were employed, complementing and verifying each other to ensure the scientific rigor and accuracy of the research findings.

2.1 Research Design and Framework

Based on the theory of PE integration and the specific conditions of PE curricula in Guizhou's higher vocational colleges, a research framework was constructed. First, a thorough literature review was conducted to clarify the theoretical basis of PE integration and its application status. Key indicators were extracted, including curriculum design, teaching methods, student participation, and faculty strength. After analyzing existing research findings and practical conditions, research questions and hypotheses were established.

The framework is structured into three main components: data collection, data analysis, and case studies. Data were collected through surveys and interviews at multiple levels; the data were analyzed using both quantitative and qualitative methods to ensure comprehensive and scientifically sound results. Case studies were conducted to further validate the effectiveness of the PE integration reform pathways in selected vocational colleges in Guizhou.

2.2 Data Collection and Sample Selection

Data were collected through a combination of structured surveys and in-depth interviews. The survey was designed with a structured approach, covering key variables such as curriculum design, teaching methods, student participation, and faculty strength to ensure data completeness and representativeness. The sample included five higher vocational colleges in Guizhou, representing different academic backgrounds and school sizes, to reflect the overall situation of PE curricula in the region. A total of 500 questionnaires were distributed, with 458 valid responses, yielding a response rate of 91.6%. Respondents included students, PE teachers, and school administrators, ensuring a well-rounded representation of perspectives..

In addition, in-depth interviews were conducted with PE teachers and school administrators to gain further insights into the challenges and current status of PE integration. Interview data were analyzed using text analysis software, and core themes related to PE integration were extracted.

3 Analysis of the Current Situation of Physical Education (PE) Curriculum in Guizhou Vocational Colleges

3.1 Current Status of Physical Education Integration

The survey revealed that Guizhou's higher vocational colleges are still in the exploratory stage regarding the application of physical education integration. Although some

schools have introduced the concept of PE integration, systematic strategies for implementation have not yet been fully established. The integration of sports and cultural courses is low, and PE remains more of a supplementary activity rather than being organically combined with professional courses. As a result, students tend to undervalue PE. Figure 1 showed that only about 42.3% of students believed that PE played an important role in their vocational skill development, reflecting the limited penetration of PE integration.

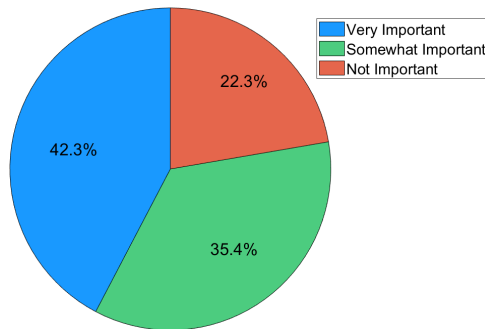


Fig. 1. Research Design

3.2 Current State of PE Curriculum Design

In terms of curriculum design, Guizhou's higher vocational colleges primarily focus on basic sports programs, with relatively limited diversity and innovation in course content. The current curriculum design does not sufficiently meet the diverse needs of students, especially regarding the integration of vocational skills. Survey data indicate that more than 80% of schools still concentrate their PE curriculum on traditional sports such as basketball, soccer, and track and field, with few innovative or vocationally oriented courses. Figure 2 illustrates the performance of Guizhou's vocational PE curriculum across multiple dimensions, including course diversity, student satisfaction, and teaching innovation, all of which are below the national average.

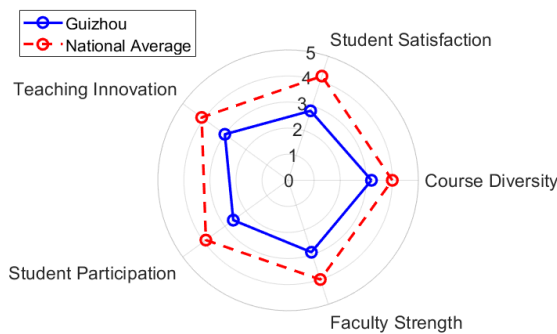


Fig. 2. Performance of Guizhou Higher Vocational PE Courses

3.3 Teaching Modes and Methods

The teaching methods used in Guizhou vocational colleges are still predominantly traditional, with a reliance on lecture-based teaching and insufficient practical and interactive elements. This lack of interactive teaching has limited student engagement and enthusiasm. Survey data show that only 35.7% of students expressed satisfaction with the current teaching methods, indicating a preference for more interactive and practice-oriented courses.

Although some schools have begun to introduce information technology into their teaching, such as hybrid online and offline models, the lack of adequate technological infrastructure and teacher training has hampered the effectiveness of these efforts. Only 22.5% of the schools surveyed reported using information technology tools in teaching, and the results were underwhelming, with complaints about the lack of diversity and innovation in the content of these digital courses.

4 Innovative Pathways for the Reform of Physical Education Curriculum in Guizhou Vocational Colleges

The diversification of curriculum design and innovation in teaching models are essential to the reform of PE curricula[8]. Guizhou vocational colleges should focus on integrating PE with vocational skills, developing courses that meet the demands of students' career growth. For example, traditional sports programs could be combined with practical vocational skills through courses such as "Fitness and Health Management" and "Team Cooperation and Leadership." This would enhance the relevance and attractiveness of PE. The curriculum should expand beyond traditional sports to broader fields such as outdoor training, fitness management, and sports rehabilitation, offering a wider variety of choices to meet the diverse interests and career needs of students.

School-enterprise cooperation is a crucial pathway for PE curriculum reform in vocational colleges^[9]. Guizhou vocational institutions can establish partnerships with enterprises in the sports industry to create a "school-enterprise joint training" model. Through the construction of sports training bases, students can participate in practical sports management and operations during off-campus internships, applying theoretical knowledge to real-world contexts. For example, schools could collaborate with local sports venues or fitness centers, establishing internships for roles such as "sports management" or "fitness coach," where students gain practical experience through direct involvement in enterprise operations.

With the rapid development of information technology, PE curriculum reform should actively embrace information-based teaching methods to break through the traditional constraints of time and space^[10]. Guizhou vocational colleges can adopt a blended teaching model that seamlessly integrates online and offline teaching. Through an online PE teaching platform, students could learn theoretical foundations and technical skills through videos before class and use the platform for review and self-assessment after class. Additionally, schools can develop specialized sports

management software to help teachers manage courses, evaluate students, and analyze data more efficiently.

Teachers are the core force driving PE curriculum reform, and the development of faculty is crucial to the successful implementation of reforms. Guizhou vocational colleges should employ multiple approaches to enhance teachers' professional expertise and teaching abilities. Firstly, schools should provide ongoing professional development for PE teachers, regularly conducting specialized training on PE integration to help them stay informed about the latest teaching methods and industry developments. Additionally, schools should encourage teachers to participate in national and international exchanges in sports education, broadening their academic perspectives and fostering teaching innovation

5 Reform Outcomes and Evaluation

5.1 Quantitative Evaluation of Reform Outcomes

The quantitative evaluation primarily compared pre- and post-reform data to assess the effectiveness of the PE curriculum reform. Key evaluation indicators included student participation, course satisfaction, and sports performance. Table 2 presents the statistical results of the changes in student sports performance and participation before and after the reform.

Table 2. Comparison of Student Performance and Participation Before and After the Reform

Indicator	Before Reform (Average)	After Reform (Average)	Change (%)
Student Participation Rate (%)	58.7	72.4	23.4
Average Sports Performance (Score)	72.3	78.6	8.7
Student Course Satisfaction (out of 5)	3.1	4	29
Course Completion Rate (%)	65.2	81.3	24.7
Practical Session Involvement (%)	48.5	66.7	37.5

As shown in Table 2, student participation significantly increased after the reform. Before the reform, the proportion of students regularly participating in PE courses was 58.7%. After the reform, this figure rose to 72.4%, reflecting the positive impact of improved course content and teaching methods on student participation. Additionally, the revised curriculum design and teaching methods significantly enhanced student satisfaction. The average overall course satisfaction score increased from 3.1 (out of 5) before the reform to 4.0 after the reform, with the most notable improvements seen in course diversity and practicality.

5.2 Qualitative Evaluation of Reform Outcomes

In addition to the quantitative analysis, the study conducted in-depth interviews and classroom observations to qualitatively evaluate the reform outcomes. Feedback from both teachers and students provided deeper insights into the effects of the reform.

Interviews with several teachers involved in the reform revealed that innovations in teaching methods, particularly the introduction of interactive teaching, significantly increased classroom engagement and student participation. Teachers generally agreed that project-based and cooperative learning approaches effectively promoted students' teamwork skills and encouraged greater classroom involvement. Additionally, the use of information-based teaching tools significantly improved teaching efficiency, particularly in demonstrating key movements and managing course content. Teachers also reported a reduction in their workload due to these tools, and they found teaching outcomes to be more direct and tangible.

5.3 Feedback and Adjustments During the Reform

Despite the significant success of the reform, several issues emerged during its implementation. First, while student participation and satisfaction improved, some courses still faced challenges due to inadequate teaching resources, particularly in remote vocational colleges, where a shortage of sports equipment and facilities limited the comprehensive development of the courses. Second, although information-based teaching methods achieved positive outcomes, some students reported difficulties due to outdated technological equipment. In remote areas, limitations in internet infrastructure also hindered the widespread use of these tools.

6 Conclusion and Recommendations

This study analyzed the current state of physical education (PE) curriculum reform in Guizhou's vocational colleges and proposed reform pathways including curriculum design innovation, improvements in teaching models, deeper school-enterprise cooperation, and the application of information technology tools. The findings indicate significant improvements in student participation, course satisfaction, and sports performance post-reform. However, challenges remain, particularly in terms of insufficient faculty resources and limited investment in educational infrastructure.

To further enhance the effectiveness of the reform, the following recommendations are proposed: (1) Strengthen the integration of PE with vocational skills to make the curriculum more relevant to students' career development. (2) Focus on improving teachers' ability to use information-based teaching tools, equipping them with the necessary skills to adopt innovative methods in the classroom. (3) Increase opportunities for practical learning by fostering stronger collaborations with industry partners, providing students with more hands-on experience. (4) Ensure better access to digital tools and resources, especially in remote areas, to support the broader implementation of information-based teaching.

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