

## Defects and Countermeasures of Physical Education Instructional Methods in Universities under the Background of New Forms

Tianli Xu

Teaching and Research Department of Physical Education, Liaoning Vocational University of Technology,  
Jinzhou, 121000, China

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**Abstract:** The purpose of this article is to deeply discuss the present situation and defects of university PE instructional methods under the background of new forms, and put forward corresponding improvement countermeasures and implementation strategies. This article systematically combs the main problems existing in the current university PE instructional methods. In view of these problems, this article puts forward innovative improvement countermeasures. These include establishing a student-centered instructional concept, exploring diversified instructional methods, integrating big data and artificial intelligence technology, designing interactive and interesting instructional activities, and building a comprehensive and diversified assessment system. Implementing these improvement measures can enhance students' interest and participation in learning, promote teachers' teaching innovation and improve the quality of PE teaching. Furthermore, this article also puts forward some implementation strategies and safeguard measures, such as teacher training and ability improvement, instructional Resources construction and sharing, policy support and incentive mechanism, cooperation and exchange mechanism, and implementation effect assessment and feedback, so as to ensure the effective implementation and continuous promotion of reform measures. In order to provide a useful reference for the continuous reform and development of PE.

### 1. Introduction

In today's ever-changing era, PE is facing unprecedented social, economic and technological changes, which profoundly affect the concept, mode and method of PE [1]. The changes of society, economy and science and technology put forward new requirements for PE [2]. With the improvement of people's life and health awareness, PE not only teaches skills, but also pays more attention to physical improvement, spiritual cultivation and habit cultivation [3]. Economic development and the rise of sports industry highlight the economic value of PE, and universities need to integrate the concept of market economy to enhance students' competitiveness [4]. Scientific and technological changes have brought rich resources and cutting-edge technologies, such as VR and AI, to improve the teaching effect, but they also require teachers to constantly learn new technologies and explore ways to integrate with PE [5].

Scholars have conducted extensive and in-depth discussions on university PE instructional methods and achieved a series of fruitful results [6]. These studies cover the theoretical basis, instructional mode, instructional methods and teaching assessment of PE, which provides strong support for the reform and development of PE [7]. However, while affirming the achievements, we should also clearly see the gaps and deficiencies in the research [8]. For example, there is still a lack of systematic and in-depth research on the specific application effect assessment of emerging technologies in PE teaching, the correlation between PE teaching and students' mental health, and the exploration of cross-cultural PE instructional mode. These research gaps not only restrict the further development of university PE, but also point out the direction for our future research.

## **2. The present situation and defects of PE instructional methods in universities under the background of new forms**

Under the wave of the new era, PE is facing a series of profound changes, the first of which is the change of PE instructional concept [9]. Traditional PE emphasizes skill imparting and physical training, ignoring the cultivation of sportsmanship, teamwork and lifelong sports consciousness, which is inconsistent with the needs of modern PE and becomes an obstacle to teaching progress. In the past, the instructional method was single, lacking in innovation and pertinence, and it was difficult to stimulate students' personality and potential, which led to boring PE teaching. The lack of technology integration is also a challenge. Due to the limitation of funds, equipment or technology, some universities fail to make full use of new technologies to optimize teaching, which affects instructional modernization and student experience. In addition, students' low participation and interest stems from monotonous teaching content, unattractive methods and dull atmosphere. How to stimulate students' interest and improve their participation has become a difficult problem. However, the current sports assessment system is traditional and limited, focusing on test scores, ignoring all-round performances such as sportsmanship and teamwork, which dampens students' enthusiasm and creativity and hinders all-round development.

Based on the above, university PE needs to re-examine and update the core concepts, explore diversified and personalized instructional methods, strengthen technical integration, and enhance teaching interest and participation. Furthermore, universities need to build a scientific, comprehensive and diversified assessment system to fully reflect students' PE learning achievements and promote their all-round development.

## **3. Countermeasures for improving PE instructional methods in universities**

### **3.1. Innovative instructional concepts**

Facing the present situation and challenges of PE, we must actively seek improvement countermeasures to meet the educational needs of the new era. The first task is to innovate the instructional concept and establish a new PE instructional concept with students as the center and focusing on ability training. This means that PE teaching is no longer just the teaching of skills and physical exercise, but also to pay attention to students' individual differences, stimulate their potential, and cultivate their innovative thinking and problem-solving ability. Under the guidance of this concept, PE teaching should pay more attention to students' all-round development, and integrate sports spirit, teamwork and healthy lifestyle into teaching, so that students can achieve all-round physical and mental improvement through physical activities.

### **3.2. Exploration of diversified instructional methods**

In order to achieve this teaching goal, we need to explore diversified instructional methods. New instructional modes such as blended learning, flip classroom and project-based learning provide new ideas for PE teaching. Blended learning: Combining the advantages of online and offline teaching, students can learn in more flexible time and space. Flip the classroom: through self-study before class and discussion in class, the interaction and efficiency of the classroom are improved. Project-based learning: encourage students to conduct in-depth research and practice around specific topics or tasks, and cultivate their teamwork and problem-solving skills. The application of the above instructional modes in PE teaching can not only enrich instructional methods, but also stimulate students' interest in learning and improve their learning effect.

The integration of technology is another important way to improve the quality of PE teaching. The rapid development of cutting-edge technologies such as big data and artificial intelligence provides unprecedented opportunities for PE teaching. By collecting and analyzing students' learning data, we can understand their learning situation and needs more accurately, so as to optimize the teaching content and methods. The application of artificial intelligence technology, such as intelligent coaching system and sports performance analysis software, can provide students with personalized training plans and feedback to help them better improve their sports skills. This

can improve the scientificity and pertinence of PE teaching and provide more powerful support for students' all-round development.

In order to enhance students' participation and interest, we need to design interactive and interesting instructional activities, as shown in Table 1:

Table 1 Interactive and Fun Sports Teaching Activities Design Table

Activity Name	Activity Description	Interactivity Embodiment	Fun Enhancement Methods
Team Relay Race	Students are divided into groups to participate in relay races, with each member needing to complete a specific task before passing it on to the next	Collaboration among teams, enhancing interaction among students	Setting up fun obstacles, such as "sack races", "three-legged races", etc.
Sports Knowledge Quiz	Answering sports-related questions through buzzer competitions or group contests	Competition and cooperation among students, increasing classroom activity	Using multimedia to display interesting sports videos or images as question backgrounds
Virtual Reality Sports Experience	Utilizing VR technology to simulate sports game scenarios, such as soccer, basketball, etc.	Students immerse themselves in virtual environments, experiencing real game interactions	Providing multiple scenario options to increase novelty and exploration desire
Personalized Training Challenges	Designing personalized training plans based on students' physical abilities and interests, and challenging them	Students challenge themselves, with encouragement and feedback from teachers and classmates	Setting up small goals and rewards, such as earning points or prizes after completing specific actions
Sports Role-Playing	Students play the roles of different sports stars or characters, performing imitations or competitions	Role-playing increases interactivity and immersion	Combining popular music and dance elements to make the activity more lively and interesting
Team Strategy Games	Examples include "Sports Version of Werewolf", "Sports Strategy Board Games", etc.	Requires teamwork and strategic planning, enhancing team collaboration skills	The game design is creative, incorporating sports elements to enrich the content

Finally, we should establish a diversified and procedural assessment mechanism. It not only pays attention to students' physical level and skill mastery, but also evaluates their development in sports spirit, teamwork ability and innovation ability. In this way, we can more accurately understand students' learning situation and development needs, and provide them with more targeted guidance and help.

#### 4. Implementation strategy and safeguard measures

In order to ensure the effective improvement and continuous innovation of PE instructional methods in universities, a series of practical implementation strategies and safeguard measures must be formulated. The first link lies in teacher training and ability improvement. As the core strength of PE teaching, it is very important for PE teachers to update their instructional methods and improve their professional quality. Therefore, we need to organize regular teacher training activities and invite experts and scholars in the field of PE to give lectures to help teachers deeply understand the new instructional concepts and methods. In the construction and sharing of instructional Resources, we should make full use of the resources inside and outside the school to build a rich and diverse PE instructional Resource pool. By building an online platform, we can realize the convenient access and sharing of resources and promote the communication and cooperation between teachers.

Policy support and incentive mechanism are important guarantees for the reform of PE instructional methods in universities. The management of universities should fully realize the important role of PE in cultivating students' all-round development, formulate relevant policy documents, and clarify the goal and path of reform. In terms of financial support, special funds should be set up for the implementation of PE reform projects and the training and development of teachers; Furthermore, establish a scientific incentive mechanism to stimulate their enthusiasm and creativity. Cooperation and exchange mechanism is an important way to broaden our horizons and make common progress. We should actively advocate the exchange and cooperation of PE teaching between schools, and promote the sharing of experience and complementary advantages among different universities by organizing teaching seminars, demonstration classes and joint research projects. Furthermore, universities should encourage teachers to participate in international sports teaching exchange activities, understand the international cutting-edge instructional concepts and methods, and enhance their international vision and cross-cultural communication ability.

Finally, the implementation effect assessment and feedback are the key links to ensure the effectiveness of the reform. Universities should design a scientific assessment system and establish a feedback mechanism. As shown in Table 2.

Table 2 Assessment and Feedback Mechanism for University PE Reform

Assessment Content	Assessment Method	Feedback Collection Method	Feedback Application and Improvement Measures
Student Participation and Interest	Classroom Observation, Questionnaire Survey, Student Interviews	Online Questionnaire, Group Discussion, Individual Interviews	Adjust activities based on feedback, increase fun and interactive elements
Teaching Effectiveness and Quality	Skill Tests, Physical Fitness Tests, Knowledge Assessments	Standardized Tests, Work Showcases, Teacher Assessments	Analyze score data, optimize instructional methods, and improve teaching effectiveness
Teacher Professionalism and Innovation Ability	Teacher Training Records, Teaching Observations, Innovation Project Applications	Teacher Self-assessments, Peer Assessments, Student Feedback	Strengthen teacher training, encourage innovative practices, and enhance teaching levels
Technology Integration and Application Effectiveness	Frequency of Technology Use, Student Satisfaction, Teaching Effectiveness Improvement	Technology Usage Records, Student Questionnaires, Teaching Effectiveness Comparisons	Evaluate the effectiveness of technology integration, update teaching equipment, and enhance technology application abilities
Sports Spirit and Team Collaboration Ability	Team Activity Performance, Student Peer Assessments, Teacher Observations	Team Activity Summaries, Student Reflections, Teacher Comments	Strengthen sports spirit education, organize more team collaboration activities

This assessment and feedback mechanism can not only ensure the effective implementation of reform measures, but also provide valuable experience and reference for future teaching reform.

## 5. Conclusions

Through systematic analysis and discussion, this study reveals the main defects of university PE instructional methods at present, and puts forward a series of improvement countermeasures. There is an obvious mismatch between the traditional instructional concept and the needs of modern PE, such as single instructional method, lack of innovation, insufficient technical integration, outstanding problems of students' participation and interest stimulation, and the assessment system is too traditional and limited. In order to solve these problems, this study puts forward a new instructional concept of taking students as the center and focusing on ability training, and explores

diversified instructional methods such as mixed learning, flip classroom and project-based learning. Furthermore, this article emphasizes the integrated application of big data, artificial intelligence and other technologies in teaching, designs interactive and interesting instructional activities to enhance students' participation, and constructs a comprehensive and diversified assessment system to promote students' all-round development.

The contribution of this study lies in that it not only reveals the problems existing in university PE instructional methods, but more importantly, it provides a set of practical improvement schemes, which provides strong theoretical support and practical guidance for PE practice. By implementing these countermeasures, it is expected to stimulate teachers' teaching innovation vitality, enhance students' learning interest and participation, and then promote the comprehensive reform and promotion of PE.

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