

Innovative teaching methods and practice in physical education curriculum in primary and secondary schools

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Abstract: This paper aims to explore innovative teaching methods and practices in elementary and middle school physical education courses. Firstly, the paper introduces the problems existing in traditional physical education teaching, including low student interest and monotonous teaching content. Then, through a literature review, the current research status of innovative physical education teaching both domestically and internationally is analyzed. Building upon this foundation, the paper proposes innovative teaching methods such as gamified teaching and project-based learning, providing detailed explanations with practical examples. Finally, through survey research and practical summaries, the effectiveness of these innovative teaching methods is evaluated, and suggestions for further improvement are put forward.

1. Introduction

Elementary and middle school physical education courses have always been an indispensable part of students' learning processes. However, traditional teaching methods in physical education have certain shortcomings. Students exhibit low interest in physical education courses, and the teaching content is often monotonous, making it challenging to ignite students' enthusiasm for learning. Therefore, addressing how to enhance the attractiveness and effectiveness of elementary and middle school physical education courses through innovative teaching methods has become an urgent issue.

2. Problems in Traditional Physical Education Teaching

2.1. Low Student Interest

The lack of student interest is a significant issue in traditional physical education teaching. Physical education courses should be a vital means of inspiring students' vitality and enthusiasm, but in traditional modes, students often exhibit relatively low interest in physical education classes.

Firstly, the content of physical education courses is too fixed, mainly focusing on traditional sports such as soccer, basketball, and athletics. This makes it challenging for students to experience novel and diverse activities over extended periods of learning, leading to a gradual decline in interest. The lack of varied teaching content fails to meet the increasingly diverse interests of students, turning physical education classes into routine and uninspiring tasks.

Secondly, the singularity of teaching methods is also a reason for low student interest. Traditional physical education teaching often emphasizes prescribed training and skill development, lacking fun and engagement. Learning in a monotonous mode is unlikely to stimulate students' interest in physical education, making it a segment they are reluctant to participate in.

Moreover, the societal changes bringing about diverse cultures and interests have made students' expectations for physical education more varied and personalized. Traditional physical education teaching has failed to adapt to this change, unable to meet students' diversified interests, resulting in a loss of interest in physical education courses.

Therefore, the issue of low student interest becomes more prominent in traditional physical education teaching, necessitating a thorough reflection and reform of physical education courses to better meet students' interest needs.

2.2. Monotonous Teaching Content

The singularity of teaching content is a significant problem in traditional physical education teaching. In classrooms, the commonly seen sports projects are mainly limited to traditional categories such as soccer, basketball, and athletics, lacking sufficient diversity and creativity. This makes it difficult for students to experience a rich variety of activities in physical education classes, limiting their understanding and interest in different sports. This singularity leads to a lack of variation in teaching content, making it challenging for students to encounter novel and interesting activities during extended learning periods. The repetitive appearance of traditional sports projects makes the curriculum seem dull and lacking stimulation.

Simultaneously, for those students who cannot find interest in traditional projects, the monotony of teaching content makes them feel uninterested and lacking a sense of participation. Furthermore, the singularity of teaching content also affects students' comprehensive understanding of the field of physical education. Many non-traditional sports projects, such as winter sports and extreme sports, are often overlooked in traditional physical education teaching. This narrow definition limits students' perception of the diversity and breadth of physical education.

Therefore, the monotonous teaching content is a severe problem in traditional physical education teaching. It not only makes physical education courses monotonous but also restricts students' development space in the field of physical education. To enhance the attractiveness and effectiveness of physical education courses, it is necessary to deeply contemplate and reform the teaching content.[1]

3. Current Status of Research on Innovative Physical Education Teaching

3.1. Domestic Research on Innovative Physical Education Teaching

In China, research on innovative physical education teaching is continuously advancing, actively exploring new methods to enhance teaching effectiveness. On one hand, researchers, acknowledging the issues in traditional physical education teaching, have been reforming through the adoption of various teaching models and methods. Gamified teaching is gradually gaining prominence in China, considered an effective means of engaging student interest. By designing course content in the form of entertaining games, it can enhance students' learning enthusiasm, encouraging them to actively participate in physical education classes. Simultaneously, project-based learning has been widely experimented within domestic physical education teaching. Researchers design challenging projects that allow students to acquire knowledge through practical sports activities, enhancing their comprehensive abilities. This teaching method emphasizes practicality, enabling students to gain a deeper understanding of sports theory and apply it to practical operations, contributing to the

development of students' hands-on skills and innovative thinking. Research on innovative physical education teaching in China also emphasizes the application of technological means. New technologies such as Virtual Reality (VR) and Augmented Reality (AR) are gradually gaining attention in physical education teaching. Through these technological means, students can experience various sports activities in a virtual environment, enhancing the interest and realism of learning, providing new possibilities for physical education teaching. In summary, research on innovative physical education teaching in China is actively expanding teaching paradigms, aiming to make physical education teaching more attractive and effective by introducing gamification, project-based learning, and advanced technologies.[2]

3.2. Foreign Research on Innovative Physical Education Teaching

The rich experience in foreign innovative physical education teaching provides valuable insights for China. Gamified teaching holds a significant position in foreign physical education, integrating physical education courses into interesting game scenarios. Students not only exercise their bodies but also cultivate teamwork and communication skills through participation in competitions. This teaching method not only stimulates students' interest in learning but also increases their involvement in sports activities. In foreign practices, gamified teaching is widely recognized as an effective means to actively engage students in physical education learning. On the other hand, project-based learning has also achieved significant success in foreign countries. By designing specific projects, students find it easier to combine theoretical knowledge with practical applications, enhancing their in-depth understanding of the subject. This practical teaching method is widely applied to students of all ages abroad, providing them with a more inspiring and enjoyable learning experience. Through participation in projects, students not only improve their theoretical knowledge but also develop practical skills, and the emphasized teamwork also helps improve social skills.

Additionally, foreign investment in sports education technology is also significant. The introduction of high-tech means such as virtual reality and motion sensors makes physical education teaching more vivid and interesting. This not only improves teaching effectiveness but also stimulates students' strong interest in sports technology, cultivating a group of students with innovative awareness. By applying these high-tech means, foreign physical education teaching achieves an organic integration of theory and practice, providing students with a more comprehensive and in-depth learning experience. [3-4]

In summary, foreign innovative physical education teaching emphasizes the combination of theory and practice, making physical education teaching more lively and flexible through the introduction of gamification, project-based learning, and high-tech means. These experiences provide valuable references for domestic physical education teaching, prompting us to pay more attention to student participation, teamwork, and technological integration in practice, to enhance the quality and attractiveness of physical education teaching.[5]

4. Innovative Teaching Methods: Proposal and Explanation

4.1. Gamified Teaching

4.1.1. Concept of Gamified Teaching and Its Application in Physical Education

Gamified teaching is an educational strategy that integrates game elements into the teaching process, providing an innovative approach to enhance student learning motivation and engagement in physical education. The core idea of this method is to create an engaging and competitive learning environment, inspiring students' interest in sports activities to better achieve educational goals.

Introducing game elements into physical education, such as establishing game rules and reward-penalty mechanisms, can encourage students to actively participate. This enthusiasm stems from students' love for the nature of games, making them more willing to invest in physical education classes. Through clever gamification design, physical education courses can be constructed as a series of challenging and enjoyable activities, allowing students to experience the joy of learning through participation.

The application of gamified teaching aims to spark students' interest in learning. By introducing game elements, physical education courses become more attractive, and students can maintain focus more easily because they experience pleasure and a sense of achievement in the activities. This not only helps increase students' engagement in physical education courses but also fosters a profound understanding of sports knowledge.[6]

Furthermore, gamified teaching in physical education can cultivate students' teamwork and communication skills. Through the setting of game rules, students need to closely collaborate within a team, devise strategies, and coordinate actions. This team-oriented nature encourages students to develop collaboration skills and enhances their communication abilities, laying the groundwork for future social environments.

In summary, the application of gamified teaching injects new vitality and interest into physical education. By creating a learning environment that is challenging and enjoyable, gamified teaching stimulates students' learning interest, increases their engagement, and fosters teamwork and communication skills, making physical education courses more attractive and effective.

4.1.2. Implementation Steps of Gamified Teaching

The implementation steps of gamified teaching are crucial to ensure smooth progress and achieve the expected teaching outcomes. Firstly, clearly defining teaching goals and student needs is a key step. Teachers need a clear understanding of the teaching objectives they want to achieve and consider students' interests and characteristics to ensure close alignment between gamification design and educational purposes.

Secondly, designing game rules and activities is the core aspect of gamified teaching. The design of rules should emphasize challenge and fairness, ensuring that each student can find room for self-expression in the game. The transparency and simplicity of the rules are also considerations to ensure that students can quickly understand and participate in the game. Activity design should fully consider the practical needs of physical education teaching, making them both entertaining and educational.

During the implementation process, teachers need to flexibly apply teaching methods and adjust game rules promptly to meet students' learning needs. By observing students' participation, feedback, and interaction, teachers can collect valuable information, providing a basis for subsequent teaching adjustments. A timely feedback mechanism helps maintain the freshness and effectiveness of teaching activities and increases students' enthusiasm for gamified teaching.

Finally, by evaluating students' performance and participation, teachers can comprehensively understand the effectiveness of gamified teaching. This evaluation process not only helps summarize teaching experiences but also provides valuable references for adjusting and optimizing gamification designs. Through this coherent set of steps, gamified teaching methods can better fulfill their educational functions, increasing students' interest and participation in physical education courses.

4.2. Project-Based Learning

4.2.1. Significance of Project-Based Learning in Physical Education

Project-based learning holds significant meaning in physical education, allowing students to gain

a deeper understanding of sports theory and apply knowledge to practical activities through participation in real projects. Through projects, students not only exercise their bodies but also cultivate teamwork, leadership skills, and innovative thinking. Moreover, project-based learning can stimulate students' creative thinking, fostering independent thinking and problemsolving skills during the process of solving real-world problems. Project-based learning also contributes to the comprehensive development of students, enhancing their in-depth understanding of the sports discipline. Through this practical learning method, students can better master sports skills and develop hands-on abilities. Most importantly, project-based learning plays a positive role in cultivating students' teamwork and leadership skills. By collaborating to complete tasks within a project, students deepen their understanding of teamwork, while also developing organizational and managerial abilities. Therefore, as a teaching method that emphasizes practicality and the cultivation of comprehensive abilities, project-based learning injects new vitality into physical education, providing beneficial support for students' comprehensive development.

4.2.2. Design and Implementation of Project-Based Learning

The design and implementation of project-based learning play a crucial role in physical education, and its effectiveness depends not only on the design of project themes and tasks but also on aspects such as student-led learning, cooperative learning, and teacher guidance and feedback.

Firstly, in the design phase, teachers need to carefully determine project themes and goals, ensuring that the project is both challenging and closely related to the field of sports. Well-designed tasks can combine theoretical knowledge with practice, allowing students to apply what they have learned in the project. Clear project goals help guide students in their learning direction, enabling them to achieve the expected learning outcomes more effectively in practice.

During the implementation process, students are encouraged to engage in self-directed and cooperative learning, completing project tasks through group collaboration. This autonomous learning mode stimulates students' independent thinking and problem-solving abilities. Through group collaboration, students develop teamwork and communication skills, enhancing their understanding and coordination abilities. This helps establish a positive learning atmosphere and increases student engagement in the project.

Teachers play the role of facilitators during project implementation, guiding students on problem-solving methods and skills, and providing timely feedback. This facilitator role not only guides students in subject knowledge but also plays a critical role in personalized development and team motivation. Timely feedback helps students continuously adjust and improve during the project, ensuring the effectiveness and depth of learning.

Through project-based learning, students not only gain a better understanding of sports knowledge but also develop practical skills. Additionally, project-based learning enhances students' collaboration and communication abilities within a team, better preparing them for future social environments. This teaching method endows physical education courses with more challenges and practicality, helping students develop more comprehensively. In conclusion, the design and implementation of project-based learning are of great significance in physical education, providing students with a more in-depth and practical learning experience.

5. Implementation and Evaluation of Innovative Teaching Methods

5.1. Introduction of Practical Cases

In the practical implementation of innovative teaching methods in primary and secondary schools, we have chosen gamified teaching and project-based learning to facilitate the comprehensive

development of students in physical education. In gamified teaching, we introduced engaging sports games such as maze soccer and expansive training. These games, with cleverly designed rules, ignited students' interest in applying sports knowledge in competitive scenarios. Through competition, students not only exercised their bodies but also enhanced their awareness and engagement in physical education.

Simultaneously, through organizing project-based learning, students participated in the design and implementation of sports activities. For example, students independently planned and organized an intra-school sports event. Such projects allowed students to gain richer knowledge and skills in actual sports, fostering teamwork and leadership. They were not just participants in the projects but also planners and executors, cultivating their abilities for self-directed learning and problem-solving.

The design of these practical cases aims to break the monotony of traditional teaching. By introducing game elements and real projects, students learn in a more interesting and engaging environment. Through games, we sparked students' interest in learning, and through project-based learning, we developed students' practical skills and teamwork spirit. These practical cases provide valuable experience for the innovation of physical education teaching in primary and secondary schools, enabling students to develop more comprehensively and actively in the field of sports.

5.2. Evaluation of Teaching Effectiveness

5.2.1. Increased Student Interest in Learning

The implementation of practical cases showed an inspiring response from students to gamified teaching methods. Engaging in entertaining sports games, students demonstrated high levels of involvement, active interaction, and collaboration. This significantly increased students' interest in learning physical education, providing them with a sense of enjoyment in their studies. Importantly, in gamified teaching, students exhibited stronger self-directed learning and exploratory spirit, deepening their memory and understanding of sports knowledge. This indicates the significant effectiveness of gamified teaching methods in enhancing students' interest in learning, infusing more vitality and attractiveness into physical education courses.

5.2.2. Enhanced Students' Comprehensive Abilities

In project-based learning, students, through designing and organizing sports projects, not only improved their athletic skills but also developed leadership and teamwork abilities. Observations revealed that students paid more attention to team cohesion and collaboration. Through communication and cooperative division of tasks, they successfully completed intra-school sports event projects. This not only enhanced their comprehensive abilities in sports but also developed practical skills.

Moreover, students gradually cultivated problemsolving skills during the project, actively thinking and adopting innovative approaches to face practical challenges. This training not only deepened their understanding of sports knowledge but also improved their adaptability in various situations. Project-based learning has achieved significant results in promoting the enhancement of students' comprehensive abilities, enabling them to better adapt to future academic and life challenges.

Through the evaluation of teaching effectiveness, we found that innovative teaching methods have achieved significant results in increasing students' interest in learning and enhancing their comprehensive abilities. Students became more proactive and engaged in practical sports and projects, improving their awareness of physical education and nurturing more well-rounded qualities. This provides strong support for further promoting and refining innovative teaching methods.

6. Conclusion

Through the exploration and practical implementation of innovative teaching methods in primary and secondary school physical education courses, this paper summarizes the positive effects of gamified teaching and project-based learning in increasing students' interest in learning and enhancing their comprehensive abilities. However, attention should be paid to some issues encountered in the practical process, and suggestions for further improvement are proposed to better promote the development of primary and secondary school physical education courses. This study has theoretical and practical significance in advancing the innovation of physical education teaching and improving students' learning experiences.

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