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"One core and four drives": constructing and implementing the integrated model of "research, teaching, learning, and assessment" in regional physical education teaching research

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Abstract: With the continuous deepening of educational reform, improving teaching quality, promoting teachers' professional growth, and achieving the in-depth integration of teaching and assessment have become key tasks in the development of modern education. By constructing a systematic framework, strengthening integrated content, building characteristic culture, and emphasizing multi-dimensional evaluation, the quality of teaching research can be effectively improved, thus promoting the school's educational quality and teachers' professional development. Against this background, the integrated model of "research, teaching, learning, and assessment" with "one core and four drives" has emerged. This model aims to meet the demand for high-quality education in the new era. Taking regional-themed teaching research as the core ("one core"), it integrates the driving forces from four aspects: large-group teaching research by division, teaching studios, teaching and research groups, and individual self-improvement ("four drives") to break through the limitations of traditional teaching research activities and form a closed loop through the integrated model of "research, teaching, learning, and assessment". This model not only promotes the effective sharing of resources and complementary advantages, but also encourages the formation of a new ecosystem of collaborative linkage, making teaching research activities more efficient and targeted.

Key words: regional physical education teaching research; teaching quality; teachers' professional development; evaluation system

1 Problem statement

1.1 Research questions

1.1.1 Regret: the mismatch between teaching objectives and students' needs

Some physical education (PE) curriculum is overly traditional in content and fails to fully consider students' interests and individualized needs [1]. As a result, students' participation is low. This mismatch not only restricts students' enthusiasm and initiative in PE classes but also affects the overall effectiveness of PE teaching. Therefore, one of the urgent issues to be addressed in current PE teaching research is how to adjust the PE curriculum content to make it more in line with students' interests and needs.

1.1.2 Pity: teachers lack professional guidance

On one hand, due to the uneven distribution of teaching resources, physical education teachers in some schools have different understandings of educational concepts and teaching methods, making it difficult to improve their teaching levels [2]. On the other hand, after teachers participate in training or seminars, they lack follow-up guidance, so they are unable to apply what they have learned to actual teaching.

1.1.3 Sorrow: incomplete evaluation system for teaching research level

The feedback mechanism of our teaching evaluation is not sound. Teachers can't timely understand their deficiencies in teaching research, which affects subsequent teaching improvement. These deficiencies not only restrict the improvement of teaching research levels but also dampen teachers' enthusiasm and creativity. Therefore, another important issue that urgently needs to be resolved in the field of current PE teaching research is how to construct a scientific, fair, and effective evaluation system for teaching research levels to form a closed-loop of teaching research.

1.2 Research value

1.2.1 Demand-oriented, identifying problems to promote innovation

An in-depth research on the current situation of regional physical education teaching should be conducted. The school can widely collect opinions from front-line teachers, teaching and research group leaders, school administrators, and other parties to accurately determine the core topics of district-themed teaching and research, taking into account the requirements of the curriculum reform and the development needs of students. A detailed plan for themed teaching and research can be developed, clarifying teaching and research objectives, content, forms, time arrangements, etc., to ensure the orderly progress of themed teaching and research.

1.2.2 Practice-oriented, creating a model to enhance competencies

The physical education teaching resources within the region, including outstanding teachers, advanced teaching equipment, high-quality curriculum resources, etc., can be integrated to establish a resource-sharing platform, break down inter-school barriers and achieve the inter-communication and sharing of resources. At the same time, external expert resources, such as physical education experts from universities, key provincial and municipal physical education teachers can be actively introduced to provide professional guidance and support for district-themed teaching and research.

1.2.3 Taking teaching and research as a vehicle to improve the evaluation system

Schools can regularly organize a variety of teaching and research activities, such as theme seminars, teaching demonstration classes, special lectures, teaching design competitions, etc. During these activities, teachers can be encouraged to actively showcase their teaching achievements and experiences, carry out in-depth exchanges and discussions, thereby triggering intellectual collisions, and jointly exploring solutions to problems. At the same time, attention should be paid to the effectiveness of teaching and research activities to ensure that each activity can bring tangible gains and inspiration to teachers.

2 Core definitions

2.1 One core and four drives

The district-themed teaching research serves as the center and guide of the entire model. It focuses on key issues, cutting-edge topics, and common challenges in regional physical education teaching, providing direction and a focused theme for teaching research activities. Through the four driving forces of large-group teaching research by division, teaching studios, teaching and research groups, and self-development, the optimal allocation of teaching research resources within the region can be achieved. It pools the wisdom and strength of all parties, forms a combined force for concentrated research, promotes the renewal of physical education teaching concepts, innovation of methods, and improvement of

quality, thus driving the enhancement of the overall regional physical education teaching research level.

2.2 Integrated model of "research, teaching, learning, and assessment"

This refers to the close integration of teaching research, teaching practice, and teaching assessment, forming an integrated whole that promotes and improves each other. In this model, teaching research is the foundation. Through in-depth research on the theoretical and practical issues of physical education teaching, it provides scientific guidance for teaching practice. Teaching practice is the core, applying research results to actual teaching and exploring teaching methods suitable for students. Teaching assessment is the guarantee. Through scientific and reasonable evaluation, it reflects teaching effectiveness and provides a basis for the improvement of teaching research and teaching practice. The three are interdependent and mutually promoting, jointly driving the sustainable development and innovation of regional physical education teaching [3].

3 Research design

3.1 Research objectives

3.1.1 Based on the analysis of goal-development needs, teaching research content will be more precise

Through in-depth analysis of the existing problems in current physical education teaching and the development needs of teachers, this research will accurately position the teaching research content. It ensures that each teaching research activity can directly address the key issues in teaching practice and meet the needs of teachers' professional growth. The teaching research content will cover various aspects such as physical education teaching concepts, methods, skills, and evaluation systems, aiming to comprehensively improve teachers' professional qualities and teaching abilities.

3.1.2 Relying on the innovation of the teaching research model, collaborative governance will be more effective

By clarifying the responsibilities and tasks of teaching research organizations at all levels, strengthening the coordination and cooperation of teaching research activities among regions, a teaching research community with resource sharing and complementary advantages will be formed. At the same time, a scientific and reasonable teaching research evaluation mechanism will be established to regularly evaluate and provide feedback on the implementation effect of teaching research activities, so as to continuously optimize the teaching research model and improve the overall quality and level of regional physical education teaching.

3.1.3 Following the multi-dimensional teaching quality evaluation, the growth of teachers and students will be more proactive

Teaching activities will be comprehensively evaluated from multiple dimensions such as teaching preparation, teaching process, and teaching effectiveness. Through regular teaching quality monitoring and feedback, teachers can be helped to understand their own teaching situations in a timely manner, identify existing problems and deficiencies, and adjust teaching strategies and methods accordingly. Meanwhile, students will be encouraged to participate in teaching evaluation, respecting their individual differences and subjective feelings.

3.2 Research contents

3.2.1 One core • research positioning: creating the integrated model and framework of "research, teaching, learning, and assessment"

The first stage-introduction period: Implementing teaching research based on "teaching routines"

In this stage, we mainly take "teaching routines" as the foundation and starting point. Through in-depth research and discussion, we ensure that teaching research activities can be effectively implemented and carried out. We will focus on the basic norms and processes of teaching, ensuring that each teacher can master and apply these basic teaching principles and methods, thus providing students with a stable and orderly learning environment.

The second stage-standardization period: making breakthroughs in teaching research by taking "lesson presentation and observation" as the key

In this stage, we take "lesson presentation and observation" as the main means. Using this as a key, we are committed to achieving breakthroughs and innovations in teaching research activities. Through lesson presentation, teachers can deeply expound on their teaching designs and concepts. And lesson observation provides a platform for peers to learn from and communicate with each other. By observing and analyzing the teaching practices of others, teachers can learn from each other's strengths and make up for their weaknesses, thereby improving their teaching levels and professional qualities.

The third stage-maturity period: deepening teaching research with "classroom reconstruction" as the focus

In this stage, we mainly focus on the core concept of "classroom reconstruction". We are committed to innovating and optimizing teaching methods and classroom structures through in-depth teaching research activities. Through this process, we aim to create a more efficient, interactive, and productive teaching environment to meet the needs and challenges of modern education.

3.2.2 Four drives • co-creation: the path and practice of building the integrated model of "research, teaching, learning, and assessment"

3.2.2.1 Division-based large groups: promote regional research collaboration

Division-based large groups organize research activities within the district. Activities such as teaching seminars, observations, and experience exchanges are frequently carried out, strengthening teacher communication and promoting the dissemination of teaching experience. Its linkage mechanism encourages cross-district research, such as cross-district teaching demonstrations and seminars, breaking geographical limitations and promoting the balanced development of regional research, broadening teachers' horizons and realizing resource and advantage sharing and complementarity.

3.2.2.2 Studios: guide teacher's growth

Studios rely on projects and topics. Teachers comprehensively explore teaching design, implementation, and evaluation around them and form innovative achievements. "Inheritance" passes on culture and spirit, creating a unique atmosphere; "assistance" helps teachers overcome practical difficulties and improve their abilities through reflection and re-practice, enhancing communication and cooperation; "guidance" promotes the growth of trainees. Mentors customize plans and guide tasks in workshops and other activities, facilitating knowledge internalization, transfer, and application and supporting teachers' professional advancement.

3.3 Clarifying responsibilities, promoting communication, and facilitating evaluation: the collaborative operation of the integrated model of "research, teaching, learning, and assessment"

3.3.1 Establishing a collaborative mechanism with an emphasis on the orientation of teacher training capacity

A collaborative mechanism is established with an emphasis on the orientation of teacher training capacity, aiming to comprehensively improve the quality of education. Through cross-school cooperation and resource sharing, we can create a more open and efficient teacher training platform. Such a platform can not only provide teachers with diverse learning opportunities but also promote the innovation of teaching methods and educational concepts. Meanwhile, through regular teacher capacity assessment and feedback mechanisms, we can ensure that teachers' professional growth keeps pace with students' needs, thus achieving the long-term development of education.

3.3.2 Paying attention to information flow and establishing an incentive-based evaluation and feedback platform

We focus on the flow and dissemination of information and create an evaluation and feedback platform with incentives to promote the efficiency and practicality of information exchange. Through this platform, teachers can share their opinions and feedback in real-time and receive corresponding incentives, thereby increasing their participation and

activity levels.

4 Conclusion

In terms of solving practical teaching problems, this research aims at issues such as the disconnection between teaching objectives and students' needs, the lack of professional guidance for teachers, and the imperfection of the teaching research evaluation system. Through in-depth investigations, it accurately positions the core topics of teaching research, integrates diversified resources and introduces expert guidance, as well as conducts a variety of teaching research activities with a focus on practical effects, effectively responding to the demands of educational reform for improving teaching quality and promoting teachers' professional growth. The "one core" focuses on key issues to guide the direction of teaching research, and the "four drives" work together from the division-based large groups, studios, teaching and research groups, and teachers' own development. The division-based large groups promote communication, cooperation, and balanced development within the district; the studios inherit culture, support teachers, and drive growth; the teaching and research groups create a sharing atmosphere to promote teaching improvement; and teachers' active participation in activities can achieve professional improvement, jointly promoting the progress of physical education teaching concepts, methods, and quality. The integration of "teaching research, teaching practice, and teaching evaluation" ensures that teaching research guides practice, practice tests research results, and evaluation feedback promotes improvement. The multi-dimensional teaching quality assessment and the mechanism of joint participation of teachers and students have effectively enhanced the pertinence and effectiveness of teaching and strengthened the active development ability of teachers and students. This model has been proven by practice to have remarkable effects in optimizing the regional physical education teaching research ecology, improving teaching quality, and promoting teachers' professional development. It provides practical examples and theoretical support for similar regional physical education teaching research and is of great significance for promoting the continuous innovation and development of physical education.

Conflicts of interest

The author declares no conflicts of interest regarding the publication of this paper.

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