International Educational Research; Vol. 8, No. 2; 2025
ISSN 2576-3059 E-ISSN 2576-3067
https://doi.org/10.30560/ier.v8n2p159

Innovation and Practice Exploration of Middle School Physical Education Teaching Methods from the Perspective of Core Literacy

Xue Gao[1]

[1] Hunan Agricultural University, China

Correspondence: Xue Gao, Hunan Agricultural University, Changsha 410128, Hunan, China. E-mail: 2565326136@qq.com

Received: April 12, 2025; Accepted: April 25, 2025; Published: April 26, 2025

Abstract

Under the educational reform background of "cultivating students' core literacy", physical education teaching in middle schools is transforming from the imparting of single skills to "all-round development". Based on the three core competencies of motor ability, healthy behavior and social adaptation proposed in the "Compulsory Education Physical Education and Health Curriculum Standards (2022 Edition)", this article analyzes the limitations of traditional teaching methods in the cultivation of competencies, and systematically constructs innovative strategies such as the integration of "learning, practice, competition and application", contextualized task-driven and differentiated competency development. Explore the paradigm shift of physical education from "knowledge-based" to "competency-based" through the reform of teaching methods. The research suggests that teaching innovation oriented towards core literacy should focus on problem-solving in real situations, strengthen students' active participation in transfer and application, and provide practical paths for cultivating new era individuals with lifelong motor skills and sound personalities.

Keywords: Core Literacy Middle school physical education Teaching methods Integration of learning, practice and competition Situational teaching

1. Introduction

With the coordinated advancement of the "Healthy China 2030" plan and the "Double Reduction" policy, the educational function of physical education has been endowed with new connotations of The Times. The "Compulsory Education Physical Education and Health Curriculum Standards (2022 Edition)" clearly defines for the first time the core literacy of physical education and health as "the correct values, essential qualities and key abilities that students gradually form through physical education learning", covering three dimensions: motor ability, healthy behavior and social adaptation [1]. This definition marks a paradigm shift in physical education teaching from "physical training" to "quality cultivation" [2][3]. However, at present, the "three major and three minor" phenomenon still prevails in middle school physical education teaching: emphasizing technical imitation over strategic application, emphasizing classroom teaching over life transfer, and emphasizing individual skills over teamwork. This makes it difficult for students to apply the knowledge they have learned to solve problems in real situations, let alone develop lifelong beneficial sports abilities and social adaptability. Against this backdrop, exploring innovative paths of teaching methods that align with the cultivation of core competencies has become the key to solving the problem of the disconnection between "cultivating physical fitness" and "nurturing people" in physical education. The perspective of core literacy provides a brand-new coordinate for the reform of physical education teaching: it requires teaching methods to shift from "fragmented skill imparting" to "holistic literacy cultivation". By creating real situations, designing challenging tasks, and promoting in-depth participation, it enables students to develop comprehensive abilities in the process of solving complex problems. This research aims to construct a teaching method system that conforms to the cultivation of core literacy, provide operational and innovative paths for front-line teachers, and promote the upgrading of physical education classrooms from "physical training grounds" to "literacy development centers".

2. The logic of Innovation in Physical Education Teaching Methods Oriented Towards Core Competencies

2.1 The Three-Dimensional Connotation and Teaching Orientation of Core Literacy

The three dimensions of core literacy in physical education and health are both relatively independent and interrelated, jointly constituting the ability system for students' all-round development: Motor ability: It not only refers to the standardization of individual technical movements, but also emphasizes the ability to reasonably select

and apply techniques and formulate tactical strategies in complex situations (such as adjusting the offensive route according to the defensive formation in a basketball game); Health behaviors: covering self-health management abilities such as independently formulating exercise plans, managing exercise loads, and dealing with sports injuries, as well as the transfer ability to transform what is learned in class into daily exercise habits; Social adaptation: It is manifested as taking on role responsibilities, coordinating interpersonal relationships, abiding by rules and ethics in team sports, and cultivating the ability to withstand setbacks and the spirit of cooperation through the experience of winning and losing [2].

2.2 Limitations of Traditional Teaching Methods in Cultivating Students' Qualities

2.2.1 The Imparting of Technology is Fragmented, while the Integration of Capabilities is Neglected

Traditional teaching often breaks down motor techniques into isolated actions (such as dividing basketball dribbling into in-place dribbling, dribbling while moving, and dribbling with changing direction). Students master the forms of actions through mechanical repetition but lack strategic thinking on "when to apply and how to combine" in actual combat [4]. For instance, students can skillfully complete three-step layups, but they frequently make mistakes in the game due to their inability to judge the timing of defense.

2.2.2 The Classroom Setting is Closed and Lacks Connections with Daily Life

The cultivation of healthy behaviors mostly remains at the "teacher requirements - student execution" model in the classroom (such as "completing 800-meter runs three times a week"), while neglecting to guide students to design personalized plans based on their own needs (such as formulating phased training plans for preparing for the physical education high school entrance examination) [5]. The cultivation of social adaptation is limited to simple group exercises, and students find it difficult to learn communication and compromise in real conflicts (such as disputes over refereeing decisions in competitions).

2.2.3 The Absence of Students as the Main Body Hinders the Development of Their Qualities

Under the "explanation - demonstration - practice" model led by teachers, students passively accept technical specifications and lack opportunities for independent exploration, reflection and improvement. For instance, in hurdle teaching, the teacher directly informs students that "the legs need to be pushed straight when getting up and jumping", without allowing students to discover the relationship between "the Angle of pushing off the ground and the speed of crossing the hurdle" through repeated trial and error, resulting in students losing the ability to deeply understand and innovatively apply it.

2.3 Principles for Designing Teaching Methods Oriented Towards Core Competencies

The design of core competency-oriented teaching methods follows three major principles: The first is the situational principle, which emphasizes embedding technical learning into real sports scenarios. For instance, it transforms long-distance running into "campus orienteering", enabling students to understand the value of techniques while solving practical problems such as "how to plan routes" and "how to allocate physical strength", thus achieving a shift from mechanical practice to scenario-based application. Secondly, there is the constructive principle. Through the cognitive cycle of "problem-driven - practical exploration - reflection and induction", it guides students to independently summarize the motion laws such as "the relationship between the height of the hitting point and the speed of the ball" in multiple serve attempts, promoting them to shift from passively accepting knowledge to actively constructing motion cognition. The last aspect is the social principle. By designing challenging tasks such as "Team Tactical Creation" and "Casualty Rescue Simulation" that require collaboration, students can experience responsibility division, rule compliance, and communication and collaboration through interaction, achieving a transformation from individual skills training to the cultivation of social adaptability. The three, with "scene application - cognitive construction - social interaction" as the logical chain, jointly form the methodological basis for cultivating core literacy.

3. The Practical Path of Teaching Method Innovation from the Perspective of Core Literacy

3.1 Integration of Learning, Practice, Competition and Application: Develop Comprehensive Abilities Through a Complete Sports Experience

"Learning, practicing, competing and applying" is the core model for cultivating core literacy. Through the organic connection of the four links, it achieves the advancement from technical mastery to literacy formation [4].

3.1.1 Problem-Oriented "learning" : Understanding the Essence of Technology Through Exploration

Abandoning the one-way transmission of "teacher demonstration - student imitation", the "cognitive conflict method" is adopted to activate in-depth thinking: In the volleyball passing teaching, the teacher first shows two sets of comparison videos: one set is a standard passing but the landing point is out of control, and the other set

has slightly non-standard movements but accurately passes the ball to the target area. Guide students to discuss "Why technical specifications may not be effective", and then explore "the key factors for controlling the direction of the ball pass" (such as the Angle of the arm plane and the timing of body movement). Teachers only provide "scaffolding" when students' thinking is stuck (such as marking the target area with a marker bucket or using elastic bands to assist in feeling the direction of force exerted by the arm), rather than directly giving answers.

3.1.2 Strategy-Oriented "Practice": Develop Decision-Making Ability in Tasks

Design progressive practice tasks, from consolidating a single technique to applying it in complex situations: Basic task (technical level): Placing the ball in place at a fixed throwing position, with a focus on solving the coordination problems of "insertion, clamping, and lifting" movements; Advanced task (Strategy Level): Work in pairs. One person randomly throws the ball (in the forward, backward, left, and right directions), while the other person moves to pad the ball and loudly shouts decisions such as "Adjust stride length" and "Turn Angle". Comprehensive Task (Practical Level): 4v4 small-court competition, stipulating that each team must pass the ball at least five times before attacking, forcing students to apply the tactical thinking of "passing the ball to organize an attack" under defensive pressure.

3.1.3 True-Oriented "competition": Strengthening the Integration of Qualities Through Confrontation

Transform the classroom into a "micro-arena" and amplify the cultivation points of qualities through rule design: In basketball teaching, organize an "injury situation challenge" : Randomly designate a player from a certain team as "injured" (unable to dribble but only able to pass), and require the team to re-formulate tactics under personnel constraints (such as increasing off-ball movement and strengthening outside shooting). Students develop "tactical adjustment ability" and "teamwork awareness" in dealing with unexpected situations. After the competition, a "tactical Review Meeting" was added. Students used mind maps to sort out the "successful strategies" and "reasons for mistakes", elevating their physical experience to cognitive construction.

3.1.4 Life-Oriented "use": Forming Healthy Behaviors During Migration

Assign after-school tasks closely related to daily life to promote the extension of literacy beyond the school: After swimming teaching, require students to record short videos of the "Family Drowning Prevention Guide", including contents such as "First Aid steps in swimming pools" and "Risk Identification in Wild Waters", and explain them at family gatherings. After team project learning, organize a "Community Parent-Child Fun Sports Meeting", allowing students to serve as referees, coaches or event planners, and transform the communication skills and sense of responsibility cultivated in the classroom into social service capabilities.

3.2 Contextualized Task-Driven: Cultivating High-Level Competencies in Problem-Solving

By creating teaching situations that are "close to life, contain conflicts and require collaboration", students are guided to comprehensively apply knowledge and skills to solve real problems. Specifically, it includes three types of situation designs:

3.2.1 Technical Application Context: From "Action Executor" to "Strategy Decision-Maker"

In hurdle teaching, traditional methods focus on action details such as "kicking off the ground with the legs when lifting the hurdle" and "folding with the swinging legs". Students often neglect the overall rhythm due to excessive attention to techniques. Innovative methods create a "hurdle challenge under different Weather conditions" scenario: Use fans to simulate headwind (increase resistance), lay anti-slip MATS on the track (change friction), and require students to independently adjust the starting point and cadage of the hurdle according to the "wind speed level" and "ground conditions", and explain "why it is necessary to start the hurdle earlier when it is headwind". In the process of dealing with variables, students naturally understand that "the application of technology needs to be combined with environmental factors", and develop the "problem-solving" and "adaptability" abilities in motor skills.

3.2.2 Health Management Context: From "Passive Recipient" to "Autonomous Planner"

In the teaching of the physical fitness module, change the mode of "teachers make plans - students mechanically execute", and adopt the project-based learning of "My Health Engineer" : Students take "designing a fitness plan for their family members" as the task and need to consider personalized factors such as "the father's sedentary occupation", "the sister's physical education needs for the high school entrance examination", and "the grandfather's old joint injury", and complete the "Family Exercise Prescription" (including warm-up activities, main training content, relaxation methods, and dietary suggestions). Each group presented their plans through role-playing (" doctor ", "coach", "nutritionist"), and the teachers evaluated them from the dimensions of "scientificity",

"feasibility", and "humanistic care", cultivating the abilities of "need analysis" and "responsibility assumption" in healthy behaviors.

3.2.3 Social Adaptation Situation: From "Individual Competitor" to "Team Symbiotic"

In football teaching, in response to the problems of "star players fighting alone and low participation of weak students", a "role binding collaboration match" is designed: Students are divided into four roles: "Offensive core", "defensive sharpshooter", "organizing midfielder" and "Substitute player". It is stipulated that the "offensive core" must receive at least three passes from the "organizing midfielder" before shooting, and when the "defensive Sharpshooter" is out of position, the "substitute player" needs to immediately cover for defense. The determination of victory or defeat is not only based on the number of goals scored, but also includes "role execution", "the number of times the weak side provides support", and "dispute resolution methods", which forces students to understand that "team victory depends on the coordination of each role", and strengthens the abilities of "role recognition" and "inclusive collaboration" in social adaptation.

3.3 Differentiated Literacy Development: Achieving All-Round Growth Through Individual Adaptation

In view of the significant differences among students in terms of their sports foundation, interests and specialties, and development needs, a three-dimensional strategy of "goal stratification anchoring the quality gradient - task self-selection activating the subject's initiative - multi-evaluation tracking the growth trajectory" is adopted to ensure that students with different traits can all achieve advanced development in physical education learning.

3.3.1 Stratified Goals are Adapted to Meet the Needs of Students at Different Levels for the Advancement of Their Qualities

Take basketball teaching as an example. Based on the students' ability baseline and the law of quality development, the core quality goals are vertically divided into a three-level progressive system: The basic goals focus on the introduction of skills and the formation of habits, such as completing chest passes and three-step layups in non-confrontation scenarios, recording practice improvement points, and actively listening to teammates' suggestions; Advanced goals: Strengthen practical application and self-management, such as using the "dribbling, breakthrough and passing" tactic in 3v3 confrontations, independently formulating weekly training plans, and coordinating defensive positions. High-level goals cultivate strategic thinking and sense of responsibility, such as serving as the team leader to design targeted tactics, customizing physical fitness replenishment plans for teammates, and organizing post-game reviews and improvements. This stratified design enables "weak students to gain, average students to improve, and top students to face challenges", avoiding the imbalance in development caused by a one-size-fits-all approach.

3.3.2 The Autonomous Choice Mechanism Activates Diverse Interests and Potential Advantages

Provide a "task menu" with different focuses on various qualities, allowing students to independently choose their development paths based on their interests: Technical research students can participate in the "100-meter Start Technology Optimization Workshop" to improve their reaction time through video analysis. Self-planning students can complete the "30-day Endurance Running Monitoring Report", record the correlation between heart rate and pace, and extract physical fitness strategies. Interpersonal interactive students can organize "class relay races" and be responsible for the entire process of work such as group arrangement and rule explanation. This "on-demand selection" breaks the traditional unified training model, allowing students' successful experiences in their advantageous fields to be transferred to other quality dimensions, achieving "different people achieving different developments in sports".

3.3.3 A Diversified Evaluation System Comprehensively Records the Growth Trajectory of Core Competencies

Establish a "Core Literacy Growth File", and replace single skill scoring with multi-dimensional evidence chains: Include "practical decision-making analysis" (such as tactical basis for double-teaming and time-scoring) and "technical innovation plans" for motor skills. Keep "Personalized exercise plans" and "psychological adjustment logs" for healthy behaviors; Social adaptation collects "team collaboration records" and "cases of responsibility and commitment" (such as statements of reasons for referees' decisions). This evaluation method captures students' ability performance in real situations. It not only focuses on the mastery of technology but also attaches great importance to deep qualities such as "why the technology was chosen" and "how to cooperate with the team", providing dynamic feedback for personalized cultivation and enabling each student's progress to be seen, recorded and empowered.

4. The Practical Challenges and Breakthrough Strategies for the Implementation of Core Competency-Oriented Teaching Methods

4.1 Main Challenges

4.1.1 The Lag in the Transformation of Teachers' Qualities

Some teachers have a tendency of "three major and three minor" : emphasizing technical demonstration over problem guidance, personal performance over teamwork, and classroom order over innovative attempts. For example, in contextualized teaching, teachers may intervene in students' discussions in advance for fear of losing control, depriving them of the opportunity for independent exploration.

4.1.2 The Constraints of Teaching Resource Conditions

Venue and equipment: The class size in urban schools is too large (with more than 50 students per class), making it difficult to organize group practical activities. The lack of professional equipment in rural schools (such as replacing volleyball with solid balls) limits the creation of complex situations.

Interdisciplinary integration: The cultivation of healthy behaviors requires the support of knowledge in exercise physiology and psychology, but the collaborative mechanism between physical education teachers and teachers of other subjects is not yet mature.

4.1.3 The Exam-Oriented Inertia of the Evaluation System

The physical education in the high school entrance examination still mainly relies on quantitative indicators such as "the number of rope jumps" and "the time spent on long-distance running". Schools and teachers are concerned that "innovative teaching may affect the examination results", which makes it difficult to continuously promote the competency-oriented approach.

4.2 Breakthrough Strategy

4.2.1 The "Three-Dimensional" Enhancement Plan for Teachers' Professional Competence

In response to the new requirements for teachers' abilities in core competency-oriented teaching, a three-dimensional improvement system of "theoretical cognition - design practice - reflection and improvement" is constructed: Through the special training on "Core Literacy and Teaching Transformation", and taking the comparative evaluation of "Traditional Classroom vs. Literacy Classroom" as the carrier, it helps teachers break through the "technology-oriented" thinking and establish a deep understanding that "technology serves as the carrier for cultivating literacy". Develop the "Core Competency-Oriented Teaching Design Template", clarify the quality cultivation points of each link such as "communication ability corresponding to group tactical discussion", and support the "Problem Chain Design Tool" and "situational task case library" to lower the threshold of innovation; Organize the "Microteaching Research on Competency-oriented Teaching", focusing on practical issues such as "embedding strategy questions in technical teaching" and "post-competition reflection guidance skills", and through repeated refinement, form transferable teaching strategies to promote teachers' transformation from "skill transmitters" to "quality cultivators".

4.2.2 "Creative" Integration and Utilization Strategies for Teaching Resources

Adhering to the concept of "low cost and high quality", we solve the problem of resource constraints through multi-dimensional innovation: In terms of venue utilization, the basketball court is divided into multiple 2v2 small courts to carry out practical games simultaneously, and the open Spaces around the playground are utilized to create life-like obstacle running scenarios such as "fire escape routes", maximizing the release of venue functions. In terms of equipment usage, abandon the reliance on professional devices. Instead, use simple materials such as sign buckets, hula hoops, and old banners to create teaching scenarios like "Team collaboration crossing Lines" and "tactical area signs", focusing on the value of tasks in cultivating core competencies rather than the professionalism of the equipment. In terms of disciplinary integration, we have jointly built an interdisciplinary course on "Energy Consumption and Nutritional Supplementation during Exercise" with biology teachers, and developed a workshop on "Coping with Competition Anxiety" in collaboration with psychology teachers. We have established a multi-disciplinary collaborative community for cultivating qualities to maximize resource benefits.

4.2.3 The "Dual-Track Parallel" Reform Path of the Evaluation System

Establish a two-way driving mechanism of "process-oriented evaluation emphasizing performance and result-oriented evaluation emphasizing ability" : The process evaluation adopts the "Classroom Literacy Performance scoring System". Through the "Core Literacy Classroom Observation Scale", qualitative scores are assigned from dimensions such as "quality of strategy proposal", "peer support behavior", and "depth of self-reflection". A

"Literacy Development Feedback Sheet" is generated every week to present students' progress trajectories in different dimensions in a visual way. Result-oriented evaluation builds a "quality enhancement evaluation system", adding sections such as "Analysis of Practical Competition videos" (accounting for 30%) and "Defense of Personal exercise plans" (accounting for 20%) in mid-term and final assessments. It weakens the quantitative scoring of single skills and strengthens the assessment weight of "the ability to apply knowledge to solve practical problems". By transforming the evaluation-oriented approach to guide teaching back to the essence of cultivating core literacy, a virtuous cycle of "promoting teaching and learning through evaluation" can be formed.

5. Conclusion

The innovation of middle school physical education teaching methods from the perspective of core literacy is essentially a physical education response to the educational proposition of "what kind of people to cultivate and how to cultivate them". This study deconstructs the three-dimensional literacy connotations of motor ability, healthy behavior, and social adaptation, and constructs a transformation path from "fragmented technical imparting" to "holistic literacy cultivation" - the integration of "learning, practicing, competition, and application" breaks the separation between technology and practical combat, allowing students to develop decision-making and transfer abilities in a complete sports experience. Contextualized task-driven approaches break through the closed nature of the classroom, making technical learning a carrier for problem-solving and social collaboration. The differentiated development strategy focuses on individual differences, enabling every student to find a growth fulcrum in physical education learning.

The research also reveals that the implementation of quality cultivation requires breaking through practical bottlenecks such as the lagging quality of teachers, resource constraints, and evaluation inertia. Through the improvement of teachers' three-dimensional abilities of "theory - design - practice", the creative integration of teaching resources, and the dual-line evaluation reform of "process + result", an implementation system of "concept - strategy - guarantee" has been initially constructed. In the future, physical education needs to further deepen the integration of digital technology, enhance the collaboration among families, schools and communities, and improve the ecosystem for cultivating qualities in real-life scenarios. Only by continuously promoting teaching innovation with core literacy as the anchor point can physical education classes truly become fertile ground for nurturing healthy bodies, sound personalities and lifelong athletic abilities, laying a solid foundation for cultivating new era individuals with good qualities and a sense of responsibility.

References

[1] Ministry of Education. (2022). Compulsory education physical education and health curriculum standards (2022 edition). Beijing: People's Education Press.

[2] Liu, J. (2017). Core literacy of physical education and its formation path. *Curriculum, Textbooks and Teaching Methods, 37*(7), 64–68.

[3] Mao, Z., & Liu, X. (2017). On the core literacy of physical education discipline. *Journal of Beijing Sport University, 40*(11), 1–4.

[4] Wang, J., & Chen, L. (2020). Construction of an integrated teaching model of "learning, practicing and competing" in primary and secondary school physical education from the perspective of core literacy. *Chinese Journal of Education,* (5), 90–94.

[5] Wu, J., & Li, H. (2019). Teaching reform of physical education and health curriculum based on core literacy. *Chinese School Physical Education,* (1), 18–21.

Copyrights