

Research on the Core Competency Cultivation Strategies for Underachieving Groups in Middle School Physical Education under the New Curriculum Standards

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Abstract: *Focusing on the cultivation of core competencies of disadvantaged groups in middle school physical education under the background of the new curriculum standards, this paper discusses the definition and characteristics of disadvantaged groups in physical education through methods such as literature review, questionnaire survey, and case analysis. It analyzes the current situation and issues in cultivating their core competencies, specifically including weak foundation and limited participation in motor skills, insufficient awareness and poor habits in health behaviors, and lack of confidence and weak willpower in sports ethics. Based on the three dimensions of core physical education competencies, targeted cultivation strategies are proposed: strengthening the foundation and expanding participation in motor skills, enhancing awareness and improving habits in health behaviors, and rebuilding confidence and honing willpower in sports ethics. The aim is to improve the motor skills, health behaviors, and sports ethics of disadvantaged groups in physical education, promoting their overall development.*

Keywords: New Curriculum Standards, Disadvantaged Groups in Physical Education, Core Competencies, Core Physical Education Competencies.

1. Introduction

The “Compulsory Education Physical Education and Health Curriculum Standards (2022 Edition)” clearly proposes curriculum goals oriented towards “core competencies,” including content in three areas: motor skills, health behaviors, and sports ethics. This goal marks a shift in physical education teaching in primary and secondary schools in China from the traditional focus on teaching students sports skills to promoting the holistic development of all students and comprehensive education. In the process of comprehensive education, physical education should emphasize the holistic development of all students, including the cultivation of disadvantaged groups in physical education. The “Healthy China 2030” Plan Outline emphasizes increasing the intensity of school health education, focusing on primary and secondary schools, and establishing a mechanism to promote school health education. The “Opinions on Deepening the Integration of Sports and Education to Promote the Healthy Development of Adolescents” also proposes establishing a health-first educational philosophy, aiming at all students to achieve educational equity, emphasizing the promotion of students’ physical and mental health.

Regarding disadvantaged groups in middle school physical education, Part Four of the “Opinions on Comprehensively Strengthening and Improving School Physical Education Work in the New Era” mentions: “Improving student physical health records, objectively recording students’ daily participation in physical activities and physical health monitoring results.” This explicitly requires attention to the importance of students’ physical health, focusing particularly on students with weaker constitutions to help them gradually improve their physical health status. The new curriculum standards propose “teaching according to students’ aptitude”

and “paying attention to individual differences,” especially requiring the protection of educational rights for disadvantaged groups.

2. Research Background on Cultivating Core Competencies of Disadvantaged Groups in Middle School Physical Education under the New Curriculum Standards

2.1 Realistic Background

The middle school stage is a critical period for the rapid physical and mental development of students, and physical education classes play an irreplaceable role in promoting students’ physical and mental health. The physically disadvantaged groups present various problems during exercise participation due to multiple factors such as physical function, basic motor skills, or psychological reasons. For example, some students with congenital diseases cannot handle the intensity of regular PE classes; some students resist participating in PE exercises due to inferiority complex caused by personal factors, leading to low engagement in PE classes. These situations not only affect their healthy growth but also may impact the overall physical exercise situation of the class [1].

On the other hand, the current physical education teaching model in primary and secondary schools has limitations. Some schools adopt a “one-size-fits-all” teaching goal and evaluation method, ignoring individual differences among students, which makes it difficult for physically disadvantaged groups to adapt to uniform teaching objectives. Physical education teachers also struggle to pay attention to each student’s exercise situation in class, making it easier to overlook the needs of physically disadvantaged groups.

2.2 Research Gaps

Although attention to physically disadvantaged groups in physical education is gradually increasing, there are still research gaps in studying the cultivation of core competencies of physically disadvantaged groups in middle schools under the new curriculum standards. In terms of research subjects, existing studies mostly focus on “explicit disadvantaged groups,” while paying insufficient attention to “implicit disadvantaged groups” in ordinary middle schools formed due to poor physical fitness, obesity, weaker motor skills, psychological barriers, etc. There lacks clear definition and classification criteria for this group, and there is insufficient attention and emphasis on this type of physically disadvantaged group [2]. In terms of research content, there is a tendency towards single-dimensional focus; most existing studies emphasize more on cultivating core competencies of ordinary middle school students and measures like physical fitness enhancement and psychological interventions targeted at physically disadvantaged groups, lacking systematic research from the integrated perspective of the “trinity” core competencies of the new curriculum standards.

3. Concept Definition

3.1 Disadvantaged Groups

Vulnerable groups refer to those who are in a disadvantageous position in economic and social production activities, face difficulties in aspects such as quality of life, rights protection, and resource acquisition, and struggle to gain fair development opportunities. Scholars from various fields have different definitions of vulnerable groups; Luo Qun believes that vulnerable groups refer to a collective term for people who, within a certain period or under equal conditions, lose or weaken their opportunity to obtain corresponding rights or abilities, or lack the capacity to respond to specific social relationships [3]. The definitions of vulnerable groups by scholars and in different fields vary, and the scope of vulnerable groups dynamically changes with societal shifts, but all definitions involve the social issues faced by this group and aspects of rights protection.

3.2 Physically Vulnerable Groups in Sports

Physically vulnerable groups in sports refer to individuals who, due to various internal or external constraints, are at a disadvantage in acquiring sports resources, developing athletic abilities, and ensuring sports rights. Liu Cheng and Li Xiuhua categorized physically vulnerable groups among college students into three types, including those with diseases or disabilities unsuitable for intense physical activity, patients with chronic illnesses (such as heart disease, asthma, etc.), and students with poor physical fitness (such as obesity, being underweight, or having low athletic ability) [4]. Huang Shimao defined physically vulnerable groups in universities as those with physical disabilities or special diseases who cannot participate in regular physical exercise and assessments, as well as those who strongly reject physical education psychologically [5]. According to the test results of the “National Student Physical Fitness and Health Standards,” although the pass rate for middle school students’ physical fitness has been increasing annually, problems such as obesity,

myopia, and insufficient endurance remain widespread, and some students are classified as “physically vulnerable groups” due to physical fitness issues.

4. Classification Scope of Physically Vulnerable Groups in Middle School Sports

4.1 Physiologically Vulnerable Groups

Physiologically vulnerable groups mainly manifest as students who perform below average in physical exercise due to physiological reasons, including students with weaker constitutions, those with chronic diseases or congenital disabilities, and those temporarily injured. Students with weaker constitutions specifically show a BMI index that is either too high or too low, with significantly lower indicators of muscle strength, flexibility, and endurance compared to peers; for instance, obese students with a BMI index greater than or equal to 28 take on average 2-3 minutes longer than ordinary students in a 1000-meter run test. Students with chronic diseases or congenital disabilities may suffer from chronic conditions such as asthma or heart disease, or have congenital defects like limb disabilities or hearing impairments. Meanwhile, students with temporary injuries are unable to participate normally in routine physical activities due to sports injuries or sudden illness.

4.2 Psychologically Vulnerable Groups

A portion of psychologically vulnerable groups includes students who develop a resistance to exercise due to inferiority complexes, such as middle school students who feel inferior because of being overweight or having poor athletic ability, which prevents them from actively participating in exercises. This psychological burden severely affects their initiative to engage in physical activity. The psychologically vulnerable group also encompasses students with sports anxiety, who experience fear, tension, or resistance towards physical education activities, often manifesting as avoidance of PE classes or fitness tests. They exhibit anxious behaviors like accelerated heart rate and insomnia before physical exams, preventing them from normally undertaking sports activities [6].

4.3 Socially Vulnerable Groups

Socially vulnerable groups often manifest as students whose participation in sports is weakened due to family circumstances. Students from economically disadvantaged families cannot engage in regular physical activities due to financial constraints. For example, some students in rural areas cannot participate in running events during PE classes because they cannot afford sports shoes, and some left-behind children lack stable support for physical education due to their parents working away from home. The number of left-behind children in China exceeds 6 million, with a sports participation rate 30% lower than that of non-left-behind children. Due to the lack of parental support and supervision, left-behind children have lower engagement in physical activities.

4.4 Contextually Vulnerable Groups

This group of students, who are disadvantaged in sports, mostly dedicate the majority of their time to academic studies due to heavy academic workloads, leaving little time for participation in physical activities. This results in a decline in physical fitness and overall health. For instance, some middle school students preparing for high school entrance exams face immense academic pressure and hardly engage in physical exercise, thus becoming part of this disadvantaged group. Students who have transferred schools also form a subset of this group; due to an adaptation period after transferring, their athletic abilities may temporarily lag behind, making it difficult to integrate into the new school's sports activities. Additionally, differences in the previous school's physical education curriculum might hinder their adjustment to the new school's sports teaching methods.

5. Analysis of the Current Situation of Physically Disadvantaged Middle School Students Under the New Curriculum Standards

The author designed a questionnaire covering multiple dimensions such as interest in exercise, attitudes towards exercise, physical condition, actual needs in physical education classes, and factors influencing exercise. The questionnaire was distributed to students at Baoji Gaoxin No. 2 Middle School, with a total of 200 valid responses collected, including 60 from students identified as physically disadvantaged.

5.1 Basic Situation Analysis of Physically Disadvantaged Students

According to the basic information survey, among the physically disadvantaged group, there are 27 males, accounting for 45%, and 33 females, accounting for 55%. It is evident that the proportion of female students in this group is higher than that of males. Among them, 5 students (8.3%) have a BMI index below 18.5, 41 students (68.3%) have a normal BMI index, and 14 students (23.3%) have a BMI index above 18.5. Additionally, 3 students (5%) suffer from specific diseases. It can be seen that within the physically disadvantaged group, there exists a segment of students who cannot participate in regular physical exercise due to body type or health conditions.

Table 1: Basic Information Survey of Students (n=60)

Survey Item	Category	Frequency	Percentage
Gender	Male	27	45%
	Female	33	55%
Body Mass Index (BMI)	BMI<18.5	5	8.3%
	18.5≤BMI<24	41	68.3%
	BMI Greater Than 18.5	14	23.3%
Disease Status	Have special diseases that prevent normal	3	5%
	Normal Exercise		
	No Special Disease	57	95%

5.2 Analysis of Physical Exercise Conditions of Students in Sports Disadvantaged Groups

From the survey on students' physical exercise conditions, it can be seen that among the surveyed sports disadvantaged groups, there are 28 students who do not like physical education (PE) class, accounting for 46.7% of the total.

Among them, 7 students (11.6%) are not interested due to boring PE class content; 4 students (6.7%) are not interested because of the high difficulty of PE teaching; 15 students (25%) are afraid of attending PE class due to poor health; 12 students (20%) are not interested due to insufficient venues and equipment; 3 students (5%) are not interested because they feel PE class wastes study time; 19 students (31.7%) dislike PE class due to too much and too difficult exam content; 11 students (18.3%) dislike PE class because they are unwilling to interact with classmates during class; and 2 students (3%) dislike PE class due to low teacher competence. These data indicate that the sports disadvantaged groups show a lack of interest in sports activities for various reasons, including subjective and objective factors, requiring PE teachers to provide targeted education for these groups.

Table 2: Student Exercise Conditions (n=60)

Survey Item	Category	Frequency	Percentage
Whether they like physical education class	Like	32	53.3%
	Dislike	28	46.7%
Reasons for not liking physical education class	The content of physical education class is boring	7	11.6%
	The textbook is too difficult	4	6.7%
	Poor health and fear of physical education class	15	25%
	Insufficient venue and equipment	12	20%
	Physical education class wastes study time	3	5%
	Too much and too difficult exam content	19	31.7%
	Unwilling to interact with classmates during physical education class	5	8.3%

The questionnaire reveals factors affecting physical exercise among the sports-disadvantaged groups. Among them, 10 students (16.7%) have no interest in sports; 21 students (35%) lack proficiency in any sports events; 13 students (21.7%) lack awareness of physical exercise; 35 students (58.3%) are restricted by their physical conditions; 7 students (11.7%) lack sports confidence; 9 students (15%) do not have exercise companions; 10 students (16.7%) lack scientific guidance on physical exercise; 4 students (6.7%) are afraid of getting injured; 18 students (30%) believe there is a lack of suitable venues and facilities; 12 students (20%) consider heavy academic workload leaves no time for exercise. The survey results show that the sports-disadvantaged groups experience various physiological and psychological conditions in sports activities, influenced by multiple factors such as interest, frequency, venue, organizational form, and motivation.

Table 3: Analysis of Students' Exercise Conditions (n=60)

Survey Item	Category	Frequency	Percentage
Factors Affecting Students' Physical Exercise	Lack of Interest in Sports	10	16.7%
	Lack of Sports Expertise	21	35%
	Lack of Awareness for Physical Exercise	13	21.7%
	Limitations Due to Physical Condition	35	58.3%
	Lack of Sports Confidence	7	11.7%
	No Exercise Partner	9	15%
	Lack of Scientific Guidance for Physical Exercise	10	16.7%
	Fear of Getting Injured	4	6.7%
	Lack of Suitable Facilities	18	30%
	Heavy Study Load, No Time for Exercise	12	20%

6. Disadvantages in the Development of Core Competencies of Middle School Physical Education Disadvantaged Groups under the New Curriculum Standards

6.1 Disadvantages in Motor Skill Development: The Dual Dilemma of Weak Foundations and Limited Participation

In terms of motor skills, the main difference between the PE disadvantaged group and regular students lies in their weak foundational motor skills. This group shows significant gaps compared to regular students in basic motor skills such as running, jumping, and throwing, and even after instruction, they still fail to master some fundamental motor skills [7]. For instance, in common middle- and long-distance running, the PE disadvantaged group often struggles to allocate their stamina properly and cannot complete tasks within the required time; in basketball, their ball control while dribbling is poor, frequently resulting in dribbling too high, too slow, or losing control of the ball. When passing, inaccurate strength and direction lead to failed passes to teammates, non-standard shooting postures, and incorrect power usage, resulting in low shooting accuracy.

The PE disadvantaged group also faces limitations when participating in higher-intensity sports. Middle school PE disadvantaged groups often find it difficult to complete endurance events like middle- and long-distance running; during strength-based exercises such as sit-ups, their weak core strength results in fewer completed repetitions, failing to meet the passing standard; in shot put, incorrect power usage causes throwing errors and short distances, making it hard to meet requirements. These situations represent disadvantages in motor skill development for middle school PE disadvantaged groups, which, due to weak foundations and participation restrictions, make it challenging for them to fully realize their potential in physical activities, further impacting their motor skill development.

6.2 Disadvantages in Healthy Behavior Development: Lack of Awareness and Poor Habits in Health Blind Spots

In terms of healthy behaviors, middle school PE disadvantaged groups mostly exhibit insufficient health awareness. Their limited understanding of healthy eating and scientific exercise makes it difficult for them to form a healthy lifestyle. Some physically weaker students who are prone to illness do not realize that consistent physical exercise can improve their physical fitness and reduce the likelihood of getting sick, nor do they understand the significance of physical activity for personal future development and overall quality enhancement, leading to low motivation for participating in exercise.

Healthy behaviors also include maintaining regular exercise habits, and developing such habits requires long-term commitment. However, due to limited physical abilities or psychological barriers, students in the sports-disadvantaged group often struggle to adhere to a consistent exercise routine and may even avoid physical education classes due to exercise-related anxiety. Some students, when creating exercise plans, fail to integrate physical activity into their

daily lives, making it difficult to establish a stable and long-term healthy behavior pattern. Additionally, certain students have poor lifestyle habits, such as staying up late to play games, which negatively impacts both their health and the effectiveness of physical exercise, thus failing to meet the requirements for the core competency of healthy behaviors outlined in the new curriculum standards.

6.3 Disadvantages in the Development of Sports Morality: Multi-layered Crises of Low Self-confidence and Weak Willpower

The sports-disadvantaged group in middle schools also faces disadvantages in the development of sports morality, a core competency required by the new curriculum standards. Regarding low self-confidence, these students are prone to feelings of inferiority, fearing poor performance and thus avoiding participation in sports activities. They perceive a significant gap between their own abilities and those of their peers, believing that participation will not yield good results. When receiving feedback from teachers, they tend to overly focus on criticism due to their lack of confidence, struggling to derive satisfaction from positive evaluations [8]. For instance, when teachers point out issues like improper techniques, students excessively blame themselves for lacking ability rather than viewing it as an opportunity for improvement. Similarly, even when praised or encouraged, the sports-disadvantaged group still doubts their competence, finding it hard to boost their confidence through positive reinforcement.

The sports-disadvantaged group shows little interest in sports competitions, making it difficult for them to experience the joys of fair competition and teamwork. They are also reluctant to engage in matches and exercises. The prolonged absence of successful sports experiences leads to a lack of perseverance when facing challenges. Consequently, this results in deficiencies in sports morality aspects like collaboration skills and persistence. Many in the sports-disadvantaged group express sentiments like “I don’t like sports competitions” or “I want to give up when encountering difficulties.” They lack intrinsic self-motivation mechanisms during sports activities, and the absence of positive reinforcement makes them even less willing to participate actively, forming a vicious cycle that further diminishes their sports morality as required by core competencies.

7. Strategies for Cultivating Core Competencies in Middle School Students Within the Sports-Disadvantaged Group Under the New Curriculum Standards

7.1 Strategies for Enhancing Sports Ability: A Dual-track Approach of Strengthening Foundations and Expanding Participation

In view of the disadvantage in motor ability for the group of students with weak physical education in middle schools, we must first solidify their basic motor skills. The key to achieving this lies in the teaching and training strategies that physical education teachers employ in the classroom. Teachers can adopt a layered teaching approach, dividing

students into different groups. Students who are physically weaker and have poor basic motor skills can be placed in a foundational group, where they are taught the most basic movements. Students with better foundations and moderate ability to absorb knowledge can be placed in an intermediate group, while those with athletic talents can be placed in an advanced group. Teachers then provide different training regimens for each group to achieve the goal of layered teaching, helping students in the weaker group strengthen their basic skills, master motor skills within their capabilities, gradually improve their physical fitness, and lay a solid foundation for future development.

To expand participation, opportunities for students in the weaker physical education group should be broadened. Schools can organize diverse sports activities to involve them. In addition to traditional physical education courses, activities that are fun and less demanding on physical fitness, such as fancy rope skipping or soft power ball, can be introduced. These activities can stimulate interest among students in the weaker group, allowing them to discover their own strengths and enjoyment in various sports [9]. Through these activities, not only can the negative mindset towards exercise be changed, sparking their interest in sports, but their physical fitness can also be improved to varying degrees, fulfilling the purpose of exercise and strengthening their physique.

7.2 Health Behavior Shaping Strategies: Enhancing Awareness and Improving Habits by Addressing Blind Spots

Teachers must help students in the weaker physical education group establish an awareness of healthy behaviors and educate them on proper nutrition and scientific exercise. There is a higher prevalence of obese students among the weaker group in middle schools. For these students, schools can incorporate specialized health education courses into the physical education curriculum, teaching them how to maintain a nutritious diet. For students who are psychologically sensitive, schools can offer sports psychology courses, actively intervene, and conduct precise health education to ensure students systematically learn about health and develop an awareness of cultivating healthy behaviors.

In the process of improving the habits of this group of students, they can be helped to develop personal health plans, including weekly exercise schedules, diet plans, and routines. The exercise schedule should combine the students' actual athletic abilities and interests, setting reasonable exercise types, intensity, and duration. The diet plan should emphasize balanced nutrition, providing specific dietary recommendations based on the students' physical condition and growth needs. The routine should ensure students get adequate sleep and cultivate a good biological clock. Through such health plans, the lifestyle and exercise habits of the physically disadvantaged group can be effectively improved, helping them shape healthy behaviors and achieve both physical and mental health.

7.3 Physical Education Moral Cultivation Strategy: Multi-layered Efforts to Rebuild Confidence and Temper Willpower

In the process of rebuilding confidence among physically disadvantaged middle school students, a role empowerment strategy can be implemented. In team sports activities, roles and tasks should be reasonably assigned based on the actual situation of these students, allowing each student to play to their strengths and contribute to the team, creating more opportunities for success and enabling them to experience the joy of success. When teachers evaluate physically disadvantaged students, they should not only praise or criticize but also provide specific reasons. Evaluation language should be concrete and sincere, allowing students to understand whether their behavior is right or wrong from the teacher's words. During the process of rebuilding confidence, teachers should be adept at using praise and encouragement. For example, when a student who was originally afraid of demonstrating athletic skills in front of others bravely completes an entire athletic movement, the teacher can offer positive encouragement to the student. Through this method, the student's confidence can be gradually strengthened.

In the process of developing other sports ethics, it is important to pay attention to the willpower training of this group. Team sports can be used to cultivate students' willpower qualities. In team sports, assign key roles to students who are disadvantaged in sports, encourage their active participation, and let them experience the spirit of mutual cooperation, mutual support, not giving up or abandoning each other among students in team sports. This allows them to learn how to strive for victory through active coordination and tenacious efforts. Through this method of teamwork, students learn to rely on the strength of the team when facing difficulties, while also cultivating their indomitable willpower [10]. Teachers can set challenging endurance and perseverance training programs. Given that middle school students in the sports-disadvantaged group have weaker physical conditions, the intensity of the challenge tasks can be progressively increased. For example, in the first stage, complete an 800-meter walk-run combination; in the second stage, attempt to continuously run 800 meters; and in the third stage, challenge a 1000-meter run and increase speed. During the training process, teachers must constantly monitor the physical and psychological states of students in the disadvantaged group, provide timely encouragement and support, help them overcome difficulties, and persist in completing the training tasks. This ensures comprehensive and meticulous education in sports ethics, helping them shape good sports ethics.

8. Conclusion

Under the requirements of the new curriculum standards, the cultivation of core competencies in middle school students who are disadvantaged in sports has become a key link in achieving the goal of holistic education. This study analyzes the disadvantageous performance of middle school students who are disadvantaged in sports across three dimensions: motor skills, health behaviors, and sports ethics. It proposes a trinity of cultivation strategies: "Strengthening Foundations and Expanding Participation," "Enhancing Awareness and Improving Habits," and "Rebuilding Confidence and Tempering Willpower" to address the practical difficulties in their core competency development. The cultivation of core competencies in middle school students who are

disadvantaged in sports is a long-term and complex process, not something that can be achieved overnight. We need to continuously focus on individual student differences and constantly adjust and optimize cultivation strategies to meet the dynamic developmental needs of students, helping every student achieve holistic development in physical education and truly implement the educational concepts advocated by the new curriculum standards, making physical education a strong support for promoting the physical and mental health development of middle school students who are disadvantaged in sports. Overall, only by leading with the concepts of the new curriculum standards and centering on student development can we break the developmental shackles of the sports-disadvantaged group and truly realize the educational vision where “every student can enjoy fun, enhance physical fitness, develop a well-rounded personality, and temper willpower in sports.”

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