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Promoting Adolescent Physical Health from the Perspective of Embodied Cognition

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Abstract

With the combined implementation of multiple policies, including Healthy China 2030, the integration of sports and education, and the "double reduction" policy, adolescent physical health has received growing attention and has become an essential concern in improving people's well-being and cultivating talent. However, despite the successive introduction of relevant policies, their practical effects have remained limited. One reason is that previous approaches have largely focused on external interventions and quantification-based assessments, with little in-depth reflection at the level of theoretical paradigms. This article argues that the deeper source of this predicament lies in the tendency toward disembodiment under the dominance of mind-body dualism. The body has long been treated as an object to be measured, trained, and disciplined, while its subjectivity and vivid lived experience have been consistently overlooked. To address this issue, the article draws on embodied cognition theory to examine its philosophical foundations, core propositions, and implications for physical education. It then uses this framework to assess disembodiment in current practices for promoting adolescents' physical health across three dimensions: values, assessment methods, and teaching forms. On this basis, it proposes a three-pronged approach to transformation: shifting from the "object body" to "subjective body cognition"; moving beyond reliance on biomedical indicators alone to focus on holistic life experience; and shifting from the attenuation of external discipline to the cultivation of intrinsic exercise motivation. In addition, the study develops three embodied pathways for practice: restructuring physical education teaching objectives, reforming classroom teaching methods, and optimizing instructional movement contexts. The study ultimately argues that the key to promoting adolescents' physical health lies not in intensifying external interventions, but in enabling them to gradually develop the physical literacy needed to sustain exercise over the long term through active, enjoyable, and immersive physical activity, thereby achieving genuine improvements in physical health.

Keywords

Embodied Cognition; Adolescents; Physical Health; Mind-body Monism; Physical Literacy.

1. Introduction

Adolescent physical health has long been a central issue in Chinese school physical education. Since the first national student physical health survey was conducted in 1985, China has organized a nationwide survey of student physical fitness and health every five years. Over more than three decades, the physical health of Chinese adolescents has fluctuated between "decline, rebound, and renewed decline." From the "Sunshine Sports" initiative to the "Double Reduction" policy, and from the expansion of the physical education entrance examination for high school to institutional guarantees for required physical education class hours, efforts at

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the national level have continued. Yet no fundamental improvement in adolescents' physical health has occurred. Results from the Ministry of Education's eighth National Survey on Students' Physical Health, conducted in 2021, showed that 23.8% of students aged 6–22 met the standards for good or excellent physical health. The survey also found that many college students experienced declines in physical fitness, young students had poor eyesight, rates of overweight and obesity increased, and grip strength declined. These issues, together with sedentary lifestyles, insufficient health awareness, and the failure to establish regular exercise habits, have all impeded improvements in physical fitness. Meanwhile, current efforts to improve physical health are largely shaped by a mind-body dualism and exhibit pronounced characteristics of "disembodiment." They tend to prioritize physical fitness training and performance assessments while overlooking adolescents' actual experiences of physical activity and emotional responses, failing to support the synchronous development of mind and body. As a result, many students merely complete exercise tasks passively, without developing a genuine enjoyment of physical activity or the physical literacy needed to sustain exercise over the long term. It is therefore unsurprising that these efforts have had only a limited effect on improving students' physical health.

Existing research has largely attributed the limited effectiveness of efforts to promote adolescents' physical health to external factors, including inadequate policy implementation, unequal resource allocation, and misconceptions within families. These explanations are certainly reasonable. However, we believe a more fundamental issue may have been overlooked: how we understand the concept of "physical health" itself, and whether the promotion pathways designed on the basis of that understanding may be theoretically flawed. Under the long-term, subtle influence of mind-body dualism, school physical education has, in practice, gradually entered a state of disembodiment. The body is increasingly treated as an object to be measured, trained, and even disciplined, while its inherent subjectivity, perceptual capacities, and experientiality are progressively marginalized [1]. This has created a paradoxical situation: the more intensively we intervene to improve physical fitness, the more alienated adolescents become from physical activity; and the more we increase exercise loads, the less they enjoy physical education classes.

The emergence of embodied cognition theory offers a new perspective on this predicament. This theory challenges the traditional view that cognition is performed by the brain alone, arguing instead that cognition arises from interactions among the brain, the body, and the external environment. It rejects the notion that the body is merely a vessel for the mind and emphasizes that bodily engagement is a core component of cognition, affective experiences, and meaning-making [2]. It holds that all forms of cognitive activity arise from bodily experience and underscores the influence of bodily experience on individuals' cognition, attitudes, and behavior. This perspective is highly consistent with the intrinsic requirements of sports education for holistic development and efforts to promote adolescent health. Accordingly, this article draws on embodied cognition theory and its core principles of mind-body integration, contextual embeddedness, and experience-based meaning-making to reexamine the underlying principles of adolescent physical health development. Theoretically, it broadens the scope of applications of embodied cognition theory in the field of adolescent physical health and provides a new theoretical perspective and scholarly foundation for research on promoting adolescent physical health. Practically, it advances a shift in adolescent physical activity from disembodiment to embodiment and offers new ideas and approaches for improving sports education for holistic development. Explore scientifically grounded and practical pathways for promoting adolescent physical health, address the shortcomings of traditional models, and foster the coordinated development of adolescents' physical fitness, health literacy, and long-term exercise habits.

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2. Theoretical Foundations: Core Tenets of Embodied Cognition and Their Implications for Physical Education

2.1. From "Mind-Body Dualism" to "Mind-Body Integration": The Philosophical Foundations of Embodied Cognition

Understanding embodied cognition requires first revisiting a long-standing question in the history of Western philosophy: the relationship between mind and body. Descartes proposed mind-body dualism, arguing that the mind can think and is conscious but does not occupy space, whereas the body occupies space but cannot think. This view has long influenced human thought, but it has also given rise to a problem: a person is seen either as a spiritual being capable of governing the world yet lacking material substance, or as a predetermined material entity that is tangible but lacks vitality and agency. The two conceptions thus seem irreconcilable. The philosophical roots of embodied cognition theory can be traced to the phenomenological tradition. In Ideas, Husserl introduces the concept of intentionality, arguing that consciousness cannot exist independently of its objects and that the body is the locus and medium through which conscious activity unfolds. Merleau-Ponty goes further in Phenomenology of Perception, advancing the concept of the "body-subject" and arguing that the body is the precondition for all action and perception. He therefore emphasizes the perspective of bodily experience. This means that human beings engage with the world first through the body, rather than through consciousness understood in a purely abstract sense. Cognition, then, is no longer an independent activity occurring within the mind, but an activity in which the body acts, senses, and experiences the world. This perspective breaks with Descartes' "I think, therefore I am." The body is no longer merely the substrate of cognition but becomes a core element in its generation, laying the foundation for the subsequent development of embodied cognition theory.

At the same time, within cognitive science, enactivism advances a similar claim. Varela and others argue that bodily action is enacted. They emphasize that cognition is embodied, grounded in the body's physical properties and sensorimotor capacities; that it is situated, always occurring in physical and social contexts; and that it is oriented toward action, with its fundamental function being not to represent the world but to act effectively. This philosophical shift from mind–body dualism to mind–body unity has fundamental implications for physical education. If the body is not merely a tool but also a subject, then the task of physical education is not simply to train the body, but to cultivate the whole person through the body.

2.2. Three Core Concepts of Embodied Cognition: Embodiment, Experientiality, and Environmentality

Embodied cognition theory has three main components: embodiment, experientiality, and environmentality. First, embodiment emphasizes that bodily structure and perceptual systems directly shape cognition. In physical education, this means that greater active bodily engagement leads to better knowledge internalization; it does not mean that better physical fitness necessarily enables someone to master a particular movement [3]. Next, experientiality emphasizes the important role of firsthand experience in cognition. Knowledge cannot necessarily be understood simply by listening to someone explain it, nor is it merely a matter of transmitting information. Rather, it results from interaction between the individual and the environment. No one can learn to swim just by listening; one must get into the water and experience its buoyancy, resistance, and temperature, while gradually adjusting movements through repeated bodily trial and error. This embodied experience is indispensable and cannot be bypassed. Finally, environmentality emphasizes that cognition is inseparable from external contexts. Embodied cognition treats cognition, the body, and the environment as a dynamically interacting and mutually influential system. Thus, learning a motor skill does not involve

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adjustments occurring solely within the body; it involves a reconfiguration of the relationship between the body and the environment. For example, basketball dribbling is not simply a matter of the hand dribbling the ball, but of the relationship among four elements: the hand, the ball, the ground, and the defender. These relationships are dynamic and mutually coordinated. From this perspective, physical education should not isolate skills from their real movement situations and train them through decontextualized drills. Instead, students' bodily abilities should be developed progressively within complete movement situations.

More fundamentally, this instrumental orientation is reshaping how adolescents understand the meaning of physical activity. When students are asked why they take physical education classes, the answer they hear most often is "because it's required for an exam," rather than "because exercise is enjoyable." This distortion in how physical activity is understood is the most profound consequence of disembodiment. It is also why the apparent contradiction that "students like sports but dislike physical education classes" arises, and this contradiction precisely reveals the alienation of adolescents' bodily experience [4].

2.3. What Does Embodied Cognition Bring to Physical Education?

Embodied cognition theory offers three theoretical insights for physical education. First, physical education should shift from a skill-based to an experience-based approach. Traditional physical education treats the mastery of motor skills as its primary goal. It tends to break a complete skill into several technical segments and have students practice them repeatedly. This approach overlooks the fact that skill learning is essentially a process of acquiring embodied knowledge, which cannot be accomplished simply by breaking movements down. Physical education should therefore focus more on students' bodily sensations during movement and encourage them to experience the rhythm, force, and coordination of movements in actual physical activity, rather than focusing solely on meeting performance standards. The second implication is that physical education should shift from disciplining the body to freeing it. Governed by the managerial logics of safety and efficiency, school physical education can easily, and often unwittingly, take a disciplinary turn, suppressing the expression of students' subjectivity through their bodies. Embodied cognition reminds us that the body is a "lived body" with an inherent capacity for self-organization and self-adjustment. Physical education should therefore create spaces in which students can explore movement freely, rather than confining them to a single standardized movement pattern. The third implication is that physical education should shift from focusing on physiological indicators to fostering holistic emergence. Current efforts to promote physical health show a pronounced indicator-oriented approach, which has fostered a tendency to exercise for the sake of meeting indicators. However, embodied cognition reminds us that physical health is not simply the sum of several physiological parameters. Rather, it is an integrated state encompassing bodily conditions, cognitive processes, and affective experiences. The true goal of physical education should therefore be to cultivate students' physical literacy, a multifaceted quality that encompasses movement competence, bodily cognition, health behavior, and exercise affect, among other dimensions [5].

3. Examining the Predicament: Disembodiment in Current Practices for Promoting Physical Health Among Adolescents

3.1. The Instrumentalization of Values: The Body as a "Bargaining Chip" for College Admission

If embodied cognition helps us envision an ideal state of what ought to be, then examining current realities allows us to identify the constraints underlying the challenges of what is. Current practices for promoting physical health among adolescents exhibit a relatively typical

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form of disembodiment across three dimensions: values, evaluation methods, and teaching forms. The first challenge is the instrumentalization of the values underpinning adolescent physical health promotion. From this perspective, the body no longer possesses intrinsic value; instead, it is reduced to a means of serving external goals such as college admission, examinations, and rankings. The utilitarian educational idea that prioritizes intellectual development over physical education constitutes the broader context for this dilemma. In the broader environment of exam-oriented education, physical education has been pushed to the margins and is often viewed merely as a means of promoting intellectual development. Statements such as "A strong body is the foundation of revolution" and "Exercise is intended to help students study better" may seem unproblematic, but closer examination reveals that they obscure the independent educational value of physical education. As a result, students participate in physical exercise not to experience the enjoyment inherent in sport, but to complete tasks, turn in physical education assignments, pass fitness tests, or earn points on the physical education entrance examination for high school. This examination is perhaps the clearest example of this instrumental orientation. Initially, physical education was added to the high school entrance examination in response to the crisis of declining physical fitness among adolescents. The intention was to use the examination as a lever to compel schools to give physical education greater priority. In practice, however, physical education gradually became intensive training focused on cramming before the exam, and classes turned into drill sessions for running, jumping, and throwing: students trained relentlessly before the exam, then stopped altogether once it was over. A course that should cultivate lifelong exercise habits has instead become a new front in exam-oriented physical education. This is a classic symptom of disembodiment: the intrinsic value of movement and the body is pushed aside, leaving the body as nothing more than an instrument for earning points.

More fundamentally, this instrumentalization is changing how adolescents understand the meaning of physical activity. When students are asked why they attend physical education classes, the most common response is "because it is required for an exam," rather than "because exercise is enjoyable." This distortion in their understanding of meaning is the most profound consequence of disembodiment. It is precisely for this reason that the seemingly paradoxical phenomenon of "students liking sports but disliking physical education classes" occurs, and it aptly reveals the alienation of adolescents' bodily experience.

3.2. The "Indicatorization" of Assessment: Data Obscure the Lived Body

The second problem encountered by the current adolescent physical health evaluation system is the too obvious indicator orientation. The National Student Physical Health Standard adopts a series of quantified indicators such as BMI, vital capacity, 50-meter run, sit-and-reach and sit-ups to evaluate students' physical fitness. These indicators do have certain advantages in objectivity and operability, but their disembodied tendency in indicatorization is also very obvious. The core problem is that these data alone cannot present the richness of a "living body". BMI can judge whether weight is overweight, but cannot explain whether this student felt happiness in exercise; vital capacity can judge whether respiratory function is good, but cannot reflect whether he felt his body flow and felt comfortable when running; the number of sit-ups can measure the strength of waist and abdomen, but cannot measure whether he tempered his will to persist to the end during exercise. In this way, physical health is simplified into a set of numbers, and the perception, emotion and meaning experience of the body itself are all denied.

What is more noteworthy is that the indicator orientation has also derived the alienated behavior of "exercising for indicators". Once physical health indicators are linked to school assessment, teacher performance and student further education, a distorted logic of replacing "improving physical fitness" with "optimizing indicators" will appear. The "weight loss class" is a relatively typical representative: overweight students, in order to pass the BMI test, are

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arranged to participate in crash weight loss, dieting plus high-intensity exercise, and what they get in exchange is not a healthy body but physical and mental exhaustion. This also treats the body as "an object to be corrected", which is completely contrary to the direction advocated by the embodied concept.

From the perspective of this author, the limitation of indicator-based evaluation is easier to see from the perspective of "physical literacy". To completely physiologize physical health is to narrow the concept of the body. The concept of physical health should include the bodily awareness of engaging in sports, the inner feelings after exercise, and the willingness to persist in exercise. Indicator-based evaluation captures only the measurable part, while the most educationally meaningful part contained in the "living body" cannot be measured, such as the bodily confidence of "I know I can do it", the physical and mental pleasure after exercise, and the inner drive of the body of "I can still persist".

3.3. "Fragmentation" of Teaching Pattern: Bodily Experience is Dismantled

Under the dual effect of the "instrumental" orientation and "indicator" evaluation, physical education teaching is becoming increasingly fragmented. Movement experience is decomposed into isolated technical links, the body becomes a carrier of movements, and the holistic sense of experience gradually drains away. Basketball classes often start with the decomposed practice of "dribbling-passing-shooting" rather than the holistic experience of a small match; running classes focus on technical points such as arm swing amplitude and stride frequency control rather than on feeling the rhythm and fluency of running. The potential logic behind this approach is: as long as one masters the decomposed movements, one can naturally piece together a complete skill. However, the essence of movement does not lie in decomposition-assembly. The sense of rhythm in dribbling cannot be obtained in isolated practice; it can only be "forced out" under the situational pressure of actual combat. The fluency of running cannot be implanted through instructions on arm swing angle; it can only be "discovered" in the experience of the body's self-regulation.

Besides the two problems mentioned above, there is another difficulty: fragmented teaching leads to the hollowing out of students' bodily experience. When movement is decomposed into isolated technical indicators to teach, what students feel is no longer the overall charm of movement itself, but a monotonous, repetitive and boring feeling. For this reason, many students feel that physical education classes are "boring", and their attraction is even lower than that of mobile games. This fragmented bodily training method actually drains the "sense of meaning" in movement. Students neither better understand their own bodies through exercise nor feel any connection between themselves and the surrounding world. This fragmented tendency also brings another consequence: the body and the environment are cut off from each other. Driven by the thinking of "safety-ism", school physical education is often arranged in a highly "sterilized" environment: standardized venues, strictly controllable exercise intensity, and pre-set activity processes. Although students complete exercise tasks in such an environment, it is difficult for them to truly immerse themselves in the movement situation. For example, a student who completes the 800-meter test on a plastic track and a student who chases and runs in outdoor cross-country obtain bodily experiences that are completely different in nature. The former experiences more of the fatigue after completing the task, while the latter experiences the pleasure generated by encountering the natural environment. It can be said that the former is in a "disembodied" state, while the latter is truly "embodied".

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4. Paradigm Transformation: From "Disembodiment" to "Embodiment"

4.1. Transformation of Body View: From "Objectified Body" to "Subjective Body"

Facing the above difficulties, adolescent physical health promotion needs to realize a paradigm transformation from "disembodiment" to "embodiment". The key to this transformation lies in re-understanding what the "body" is, repositioning what "physical health" means, and rethinking how the "promotion method" should be carried out. The reason why the "disembodied" paradigm has fundamental problems, after all, is that the understanding of the "body" itself is biased. Under this paradigm, the body is regarded as an objective, measurable and intervenable "material entity", like a machine assembled from bones, muscles and various organs, which can be clearly evaluated by a series of physiological indicators. This view of treating the body as an object is not entirely unreasonable, after all, physical health does depend on the improvement at the level of body function. But the problem is that the body is not only an "object", it is also a "subject", the medium through which we perceive the world, the tool for expressing emotions, and the place for constructing meaning. The "subjective body" view advocated by embodied cognition holds that the body is not only a "carrier" of cognition, but itself a "mode of existence".

The enlightenment of this transformation for physical health promotion lies in: we can no longer regard adolescents as "objects to be intervened", but should regard them as "subjects capable of participation". Physical health is not "given" but "generated"; it occurs in the process of adolescents' active participation, autonomous experience and meaning construction. We should stimulate students' bodily subjectivity, let them change from passive trainees to active movers, which means "who is exercising" is more fundamental than "how to exercise". Only when adolescents truly "want to exercise" can physical health promotion obtain sustainable intrinsic motivation.

4.2. Transformation of Health View: From "Biomedical Indicators" to "Holistic Life Experience"

Along with the transformation of the body view, it is also necessary to re-examine the connotation of physical health. In the traditional paradigm, physical health is almost equated with a group of biomedical indicators: well-proportioned body shape, normal function, and up-to-standard physical fitness. This is roughly it. This is a rather "negative" view of health, which cares mainly about "whether there is disease" rather than "whether one lives well". What embodied cognition suggests to us is to move toward a more positive way of understanding: physical health should actually be an overall state integrating bodily condition, cognitive process and emotional experience. A child with normal BMI may be very resistant to exercise inwardly; a student with up-to-standard vital capacity may never have felt any pleasure in running. According to the "disembodied" standard, their physical fitness can be said to be "qualified", but from the "embodied" perspective, they actually lack a positive connection with their own bodies, and the lack of this connection is itself already an "unhealthy" state. Therefore, true physical health should cover three dimensions: bodily ability, bodily cognition and bodily emotion. Only when these three aspects are coordinated can adolescents form a "positive bodily self" and produce a "sustained willingness to exercise".

4.3. Transformation of Promotion Method: From "External Discipline" to "Intrinsic Generation"

The paradigm transformation ultimately needs to be implemented in the change of the promotion method. The "disembodied" paradigm tends to adopt the method of "external discipline": setting goals, monitoring the process, evaluating results, and emphasizing the use

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of examination pressure, rule constraints and reward drives for promotion. The "embodied" paradigm tends to adopt the method of "intrinsic generation": creating conditions, cultivating interests and providing support, believing that the love for movement originates from happy experience, sense of competence and discovery of meaning. The two are not opposed to each other, but which one is primary and which one has priority is crucial. Under "external discipline", students exercise because of "the exam"; under "intrinsic generation", students exercise because of "wanting to exercise". The former is often accompanied by "stop when the task is completed", while the latter is more likely to produce "lifelong exercise habits". The ultimate direction of physical health promotion is the latter, and the promotion method must serve it.

5. Practical Pathways: Embodied Solutions for Adolescent Physical Health Promotion

5.1. Reconstruction of Teaching Objectives: From "Meeting Fitness Indicators" to "Generating Bodily Experience"

Teaching objectives have a "soul" role for teaching activities, because all actions of teaching activities are guided by the teaching objectives to set the direction of the whole course. In the "disembodied" paradigm, all our teaching objectives are actually mainly based on "meeting fitness indicators". In the specific expression of teaching objectives, what often appears is "students can complete an X-meter run within X minutes". Such an expression is clear and measurable, and is convenient for the measurability and evaluation of teaching activity results. But the problem is that this is an outward goal—the goal points to "external performance" rather than the "inner experience" inside the student's body. Embodied cognition values reconstructing teaching objectives as the "generation of bodily experience", that is, the main goal of teaching activities is not to let students go out to "complete a certain task" but to let students "obtain a certain experience". For example, in the same running class, for the same teaching content, the "disembodied" goal is "students can complete an 800-meter run within 4 minutes"; the corresponding "embodied" goal is "students can feel the coordination among rhythm, breathing and strides during running". The former points to "result", the latter points to "process"; the former evaluates "whether the standard is met", the latter evaluates "to what degree it is experienced". Of course, this transformation does not completely deny fitness indicators, but thinks that indicators should still be "put in brackets", regarded as a reference rather than the ultimate purpose. What really matters is: do students experience the integration of "body-cognition-emotion" in exercise? Do they experience the bodily confidence of "I can do it"? Do they form the willingness to exercise of "I want to do it again"? These "generative" goals are not easy to evaluate and quantify, but they are precisely the most valuable components of physical health promotion.

Embodied cognition theory also proposes a concept of "body-recognition teaching", which emphasizes that teaching should strengthen the link between bodily experience and psychological perception. This means that teachers cannot consider only one-sided goals when setting teaching objectives, but need to take into account the bodily dimension, cognitive dimension and emotional dimension. Only when the goals of these three dimensions can cooperate and support each other can teaching realize the leap from skill to experience.

5.2. Innovation of Teaching Methods: From "One-Way Skill Transmission" to "Multi-Dimensional Embodied Experience"

The change of teaching methods is a relatively core one in the whole practical path. In the teaching of the "disembodied" paradigm, one-way skill transmission is the basic form—the teacher does it once, the students follow once; the teacher corrects once, the students do it again.

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This teaching method certainly has value in the initial stage of skill acquisition, but if this teaching method becomes the only teaching form, it will easily make students' bodily experience monotonous and always in a passively accepted position. What the "embodied" paradigm advocates is a "multi-dimensional embodied experience" teaching method, whose core is to shift from focusing on "how teachers teach" to focusing on "how students learn", from "external input" to "internal generation". The specific elaboration is carried out from the following paths.

5.2.1. Create Exploratory Tasks to Stimulate Students' Bodily Initiative

One can set up such a task situation: instead of directly telling students how to practice the arm swing technique of the standing long jump, first throw out the challenge of "whoever jumps the farthest", and let them figure out by themselves during repeated trial jumps—what is the relationship between the amplitude of arm swing and the timing of take-off. The intention is to return learning to students, to form perception of movements through bodily attempts, rather than passively accepting a ready-made answer. "Acceptance learning" tests more the thinking at the brain level, while such "discovery learning" can better mobilize the input at the bodily level, and it is easier for students to remember the movement rhythm and force feeling they have explored by themselves.

5.2.2. Introduce Reflective Dialogue to Promote the Verbalization of Bodily Experience

Movement experience is often "tacit": students can do it but may not say it. Teachers can help students verbalize bodily experience through reflective dialogue, thereby deepening understanding. For example, after a running class, ask students: "What difference do you feel between today's running and yesterday's?" "Which stage felt the smoothest, and which stage felt the most strenuous?" Such questions guide not "technical analysis" but "experience sharing", allowing students to pay attention to their own bodily feelings and transform them into cognitive content that can be reflected upon.

5.2.3. Adopt Cooperative Activities to Enhance the Sociality of Bodily Interaction

Exercise is not only a relationship between the individual and his own body, but also a relationship between the individual and others. Embodied cognition theory does emphasize the role of social interaction in the process of cognition generation. The cooperation, confrontation and mutual resonance between bodies all constitute very important learning resources. Therefore, teachers can design more movement tasks that require cooperation to complete, such as three-legged races, team relays, or group choreography exercises, so that students can experience the sense of rhythm in cooperation, the sense of force in confrontation, and the pleasure of mutual resonance in bodily interaction with others.

5.2.4. Integrate Game-based Elements to Enhance the Fun of Physical Activity

Games are the most natural way for adolescents to engage in physical activity, but school physical education often opposes games to teaching and turns physical education classes into serious training. Embodied cognition reminds us that "pleasure" itself has important educational value; only when students feel "it is fun" will they "want to play"; only when they "want to play" will there be sustained awareness of exercise participation. Teachers can "gamify" skill practice, design elements such as competitions, challenges and points, so that students "learn" while "playing" and "enjoy" while "learning".

5.3. Optimization of Teaching Context: From "Static De-Realized Environment" to "Dynamic Immersive Field"

One point emphasized by embodied cognition theory is that "environment" is not merely an auxiliary condition outside teaching activities, but a constitutive element in the generation of cognition. This means that the creation of teaching context is not a matter of "icing on the cake", but a "fundamental condition" related to whether teaching can be established. The teaching

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context under the "disembodied" paradigm often has the characteristic of "static de-realization"—the venue is a standardized place, the activity route is pre-set, and the equipment configuration is fixed. Although students complete tasks in such a venue environment, it is difficult for them to truly immerse themselves in exercise. What the "embodied" paradigm advocates is a teaching context of "dynamic immersive field", a concept that contains three points, namely the dynamics, immersiveness and authenticity of the situation.

The specific implementation paths can be considered from the following aspects. First, natural and community resources can be used to increase the diversity of movement space. The school playground is not the only place for physical education teaching. Park steps can be used to practice jumping, community fitness paths can be used to design orienteering exercise routes, and campus garden paths can be used to practice balance. Moving exercise "out" of the standardized venue and letting students exercise on the ground—grass, sand and slopes—the perceptual signals received by the body are diverse. Second, situations can be created through task-driven methods to make students' exercise more meaningful. Instead of telling students "practice rope skipping today", say "we have received a task, and we need to jump rope 100 times continuously to unlock the next task", then exercise is no longer a repeated mechanical movement but a "purposeful action". Generally speaking, the closer the situation creation is to students' own life, the easier it is for students to invest. Third, mobilize multiple senses to upgrade the richness of experience. Many channels are actually receiving information at the same time. In the movement process, vision, hearing, touch and proprioception can all be consciously used by teachers: use music to adjust the rhythm of movement, use equipment of different textures to enrich the tactile feeling of materials, and use visual markers to guide the trajectory of movement. When the information of multiple senses is integrated, the "immersive feeling" of bodily experience comes up. Fourth, create an atmosphere that allows failure and reduce bodily anxiety. In fact, many adolescents are afraid of sports: afraid that they perform poorly and are laughed at, afraid of pain, or dislike showing their bodies to outsiders. Therefore, teachers should create an atmosphere of "allowing mistakes", reinterpret "failure" as "learning opportunities", and at the same time reduce horizontal comparison among students. Only when students feel "safe" will they dare to "take risks"; and only when they dare to "take risks" will they truly "grow".

6. Conclusion

Based on the perspective of embodied cognition, this study sorts out the realistic difficulties faced by adolescent physical health promotion, discusses the possible path of transformation from the "disembodied" paradigm to the "embodied" paradigm, and accordingly puts forward practical suggestions in three aspects. In general, the main conclusions are as follows. First, the reason why the current physical health promotion is "limited in effect" lies at the deep root in the "disembodied" cognitive orientation dominated by mind-body dualism. This orientation treats the body as a measurable and intervenable "object", which leads to the instrumentalization of value concept, the indicatorization of evaluation method and the fragmentation of teaching pattern. Second, embodied cognition theory provides important theoretical resources for breaking this deadlock. The "mind-body unity" position it insists on emphasizes that body, cognition and environment cannot be separated, which opens a new perspective for us to re-understand the essence of physical health—physical health should not be simplified as the sum of several physiological parameters, but should be understood as an overall state integrating bodily condition, cognitive process and emotional experience. Third, in order to realize the paradigm transformation from "disembodiment" to "embodiment", it is necessary to reconstruct teaching objectives, correspondingly change teaching methods, and optimize teaching context in teaching practice; these aspects are indispensable.

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The unique value of physical education does not lie in "training the body well" itself, but in "cultivating a complete person through the body". The fundamental way out for adolescent physical health promotion also does not lie in increasing external discipline, but in stimulating intrinsic generation—letting adolescents gradually generate a positive bodily self in active, pleasant and immersive physical activities, while maintaining a sustained willingness to exercise. In the final analysis, the matter of adolescent physical health is not only a major topic related to the future of the nation, but more concretely related to the quality of life of every child. This transformation from "disembodiment" to "embodiment" is not only a transformation of theoretical paradigm, but also an innovation of educational concept. It requires us to re-see that "living body", re-listen to "the narrative of the body", and re-believe in "the power of the body". This may be the most profound enlightenment that physical education can bring us—sports, after all, is the study of "people".

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