

Embodied Cognition Perspective on Political Education in College PE Curriculum

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Abstract: There are existing studies of college physical education curriculum-based value education, which only focus on "grafting value elements onto the curriculum", but don't have a theoretical explanation of the intrinsic education mechanism. This paper analyzes the education mechanism of college physical education curriculum-based value education based on embodied cognition theory. According to embodied cognition theory, physical education curriculum has embodied education advantages: immediacy in body experience, tension in competitive situation, and constancy in habit-forming regularity. Therefore, we establish a three-dimensional educational mechanism of perception and experience, situation and immersion, practice and internalization, the intrinsic logical sequence of "activation of perception, immersion of situation, practice consolidation"; First of all, the study closes the research gap in the academic interpretative theoretical dimensions of the "bodily dimension" in value-oriented education of physical education curriculum and the theoretical basis of instructional design.

Keywords: Embodied Cognition; Value-Oriented Education in PE Curriculum; Educational Mechanism; Bodily Participation; Value Internalization

1. Introduction

In 2020, the Ministry of Education released the Guidelines for the Construction of Ideological and Political Education in Higher Education Curriculum[1] explicitly making the organic fusion of ideological and political education into the teaching of the curriculum of physical education required, and advocating for the deep unification of "sports for education" and "moral

education". This orientation has triggered great interest in academia and the emergence of many relevant research achievements[2], but the review of existing literature indicates that current research largely centers on the "embedding of content" of ideological and political elements, i.e., figuring out what sort of ideological content and spiritual content can be absorbed into physical education curriculum, but little systematic and in-depth theoretical explanation is presented for the intrinsic essence of how these ideological and political content is transformed into student real value cognition and value change[3]. Limitations of this line of research are, to a certain extent, caused by the excessive dependence of previous curriculum ideological and political education research on cognitive psychology theory, making the education process subordinate to the cognitive social science linear viewpoint of "knowledge input—cognitive processing—conceptual output", losing sight of the most central educational power of physical education curriculum itself: that is, students' highly involved bodily involvement and true situational experiences; embodied cognition theory insists that cognition comes from the ongoing flow of interactions between the body and the outside world[4], which is highly in tune with the nature of physical education curriculum and a new academic opportunity to resolve this theoretical void. Against this background, the paper summarizes and introduces the viewpoint of embodied cognition theory to develop a complete exploration of intrinsic educational mechanisms of ideological and political education of college physical education course, and enriches the theoretical system of the ideological and political education of curriculum and provide a theoretical basis for the optimization of physical education curriculum teaching design.

2. Core Propositions of Embodied Cognition Theory and Its Educational Implications

2.1 Core Propositions of Embodied Cognition Theory

There is a philosophical origin of embodied cognition theory in the body phenomenology of French phenomenologist Maurice Merleau-Ponty[5]. In his renowned work *Phenomenology of Perception*, Merleau-Ponty was explicit in asserting that the body is not only an object of materiality, but is the medium for the subject to experience and comprehend the world. Cognitive activity is not happening "inside" the brain, isolated from the outside world, but is always generated and started out of interaction between the body and the environment. This idea fundamentally challenged the deeply rooted "disembodied cognition" view in the traditional Western philosophy and cognitive science[6], that cognition is an independent activity of abstract calculation and symbolic information processing by the brain. Building upon this, contemporary embodied cognition researchers summarise their theoretical propositions into three inter-related fundamental theses: First, cognition is based on bodily experience and the individual's sensorimotor experience is the basis of all higher level cognitive activity[7], and the formation and understanding of abstract concepts come from concrete bodily perception as well; Second, the body is situated in the environment, and cognitive subjects do not exist in isolation—body is always situated in some particular physical and social environment, the structure of the environment greatly affects the content and form of cognition; Third, cognition is situation-dependent, and cognition cannot take place independently of concrete situation—the same cognitive activity shows large differences under different situations[8]. These three theses all point to one major shift: shifting the focus of cognitive research from "brain centered" to "body centered", and opening up a new theoretical and experiential vista to human learning and development[9].

2.2 Educational Implications of Embodied Cognition Theory

Embodied cognition theory has important implications for educational practice, especially in the realm of moral education and cultivation of values, with theoretical penetrative power.

The existing paradigm of moral education implicitly assumes a "cognition-first" logic in education: once students "know" the "correctness" of some value concept in a cognitive level, appropriate feelings and choices of behaviors can naturally emerge. But the embodied cognition theory disestablishes such a pre-supposition: the real acceptance of moral values is not simply the result of the accumulation of cognitive knowledge but must be grounded in the body's "feeling" and "experiencing" in contexts. That is, students' identification with the basic value concepts such as persistence, fairness and collectivism need authentic embodied feelings and arousals as a precondition; preaching alone cannot penetrate into the deep structure of value acquisition. Meanwhile, the situational principle of learning laid out by embodied cognition theory also has educational values: bodily participation in authentic situations is a necessary condition, not just a complement, to enabling deep learning rather than an auxiliary instrument—learners can only convert foreign knowledge and norms into inner schemas and beliefs through authentic participation[10]. The above theoretical perspectives bring the specific theoretical basis for research on ideological and political education in college physical education curriculum: sports itself uses students' strong bodily participation as the basic form; authentic emotions, competition pressures, and teamwork generated in sports activities naturally have the situational conditions necessary for embodied learning, so physical education course is one of the most embodied modes of all the educational curriculum types.

3. Embodied Educational Advantages of Value-Oriented Education in PE Curriculum

3.1 The Immediacy of Bodily Participation Brings Authenticity to Value Experience

Among all curriculum forms, the most characteristic trait of physical education curriculum for different disciplines is its body participation. This characteristic gives ideological and political education in physical education curriculum a pedagogical advantage that few disciplines can offer: immediacy and authenticity of experiencing values. In classroom of ideological and political theory, education for values is just based on teachers' oral teaching and reading texts; students' perception of the

essential values, such as bravery, justice and collectivism, is essentially a derivative experience mediated by linguistic symbols, with quite limited participation in emotional arousal. In physical education curriculum, students' own experience of hardships and joys of increasing physical capacity during running, authentic experience of stress and normal restriction of confrontation competition, experiential feeling of the strength of team and the burden of individual response in teamwork—are. And this direct perception of the body-ness passes the translation of linguistic symbols, anchors the value concept to genuine emotion experience. Embodied cognition theory shows that emotional experience is an important driving force in the internalization of value [11] and authentic emotional response elicited by the body may leave deep imprints in both the neurological and psychological levels, so laying down an indisputable emotional basis for the stable generation of value identification. It is exactly this immediacy and authenticity of experience in value experience that makes Value-Oriented Education in PE Curriculum has the most original embodied educational advantage among different disciplines.

3.2 The Tension of Competitive Situations Provides Authentic Fields for Moral Testing

Second embodied educational advantage of Value-Oriented Education in PE Curriculum is that there are moral tensions inside the competitive activity naturally. Sports competition is not only competition in strength, it has rich moral content in its deep roots: on the rule level, students have realistic moral tension to choose between obeying rules and winning; on the outcome level, students must truly carry on the pain, suffer losses, survive the bitterness and obtain self-restraint from winning; on the team level, students must truly choose between the interest of individuals and collectivity interest. These moral test conditions are not designed by teachers with scenario simulation, but are real opportunities to choose that are exogenous to competitive activity itself. Value of moral education is just here—they force students to face value conflict in a body present way, rather than stating some value proposition about some other abstract value from a safe distance of onlookers. Its “authentic moral testing” is embodied moral education material that classroom lectures cannot give. More

important, the strong emotional experiences associated with competitive situations (such as tension, excitement, frustration, exhilaration), have important value internalization functions in the theory of embodied cognition: high-arousal emotion can strongly strengthen the sensitivity and receptivity of individuals to value information[12], and the values such as fairness, perseverance, and responsibility embodied in the competitive situations are more likely to break through the “cognitive defense” of the individual, penetrate and pass deep into students' value schema.

3.3 Repetitive Bodily Practice Facilitates the Habitual Formation of Values

Third embodied educational advantage of physical education curriculum ideological and political education is embodied practice's special enabling function for the formation of habituation of value. The idea of “sensorimotor schemata” (sensorimotor schema) in embodied cognitive theory elucidated the deepest logic of this enabling function: an individual practicing some bodily action repeatedly will form stable brain circuits and behavioral schemata gradually; once formed, these schema produce continuous and powerful effects on people's cognitive habits and value judgments[13]. The logic of sports practice is exactly repetition—whether in the training of athletic techniques or physical fitness, both come to rely extensively on repetitive practice to achieve the change from “conscious control” to “automated execution”. “This training logic is extremely similar to the internal law of value formation: such qualities as persistence, self-control, self-discipline cannot be formed solidly by one deep insight cognition, but have to sink step by step and get embodied into stability of personality traits, through physical practice on a daily basis. For this reason, the long-term repetitive features of physical education curriculum generally provide structural conditions that are hard to match with other curriculum forms for transforming values from ‘knowing’ to ‘doing’, and from ‘external norms’ to ‘internal consciousness’, so that the habitual formation of values really happens at the level of bodily practice.”

4. Construction of the Educational Mechanism for Value-Oriented Education in PE Curriculum Based on Embodied Cognition

4.1 Perception-Experience Mechanism: Motor Perception Activates Value Awareness

Perception-experience mechanism is an initiating mechanism of embodied education in value-oriented education in PE curriculum. The essence of the perception-experience mechanism is to convert students' bodily perception obtained in authentic motor activities by teacher's intention into the proactive awareness and preliminary recognition of certain values through teacher's guiding and protecting. As embodied cognition theory explains, bodily perception is not only physiological signals but also cognitive activities containing rich emotions and meanings. When students realize the fatigue

of the body, the tightness of respiratory system in training of long-distance running, the passion of losing and winning in contest sports, the pain of coordination errors and the joy of teamwork in collective competition, the body-originated authentic perception brings students a burst of emotional excitement themselves. Significance of emotional arousal lies in the significant increase in the sensitivity and openness of individuals to value information of the present situation, put the students in a psychological state of actively deriving meaning interpretation. It is precisely at this critical moment that the teachers' further guidance assumes an indispensable transformative role.

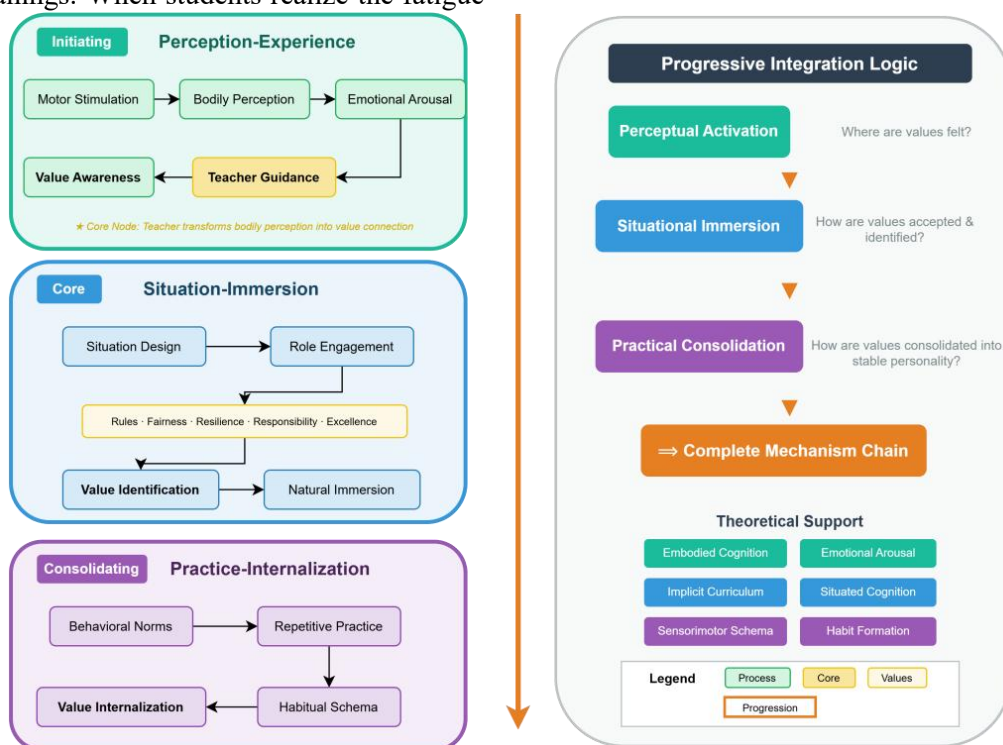


Figure 1. Embodied Cognition in PE Curriculum Ideopolitical Education

As shown in Figure 1, The way that this mechanism works out operationally is summarized as follows: motor stimulation → bodily feelings → feeling of emotions → teacher guidance → value awareness. Among these, the teacher guidance phase is the critical motor phase of the whole mechanism, the function of teacher guidance is to help students make sense of bodily feeling and value consciousness. Taking the teaching of long-distance running for example: when students are in extremely tired bodily state and wildly swinging emotional state after leading the long-distance running training exercise, if the teacher can intervene in time to guide the students in reflecting and mentioning

over bodily experience “gritting teeth all the way to the last lap”—“When in that state of wanting to give up just now, what motivates you to keep on running?” this can really encourage students to connect up vague bodily feelings with vague value concepts such as willpower and self-transcendence so that abstract value concepts can really have authentic bodily experience as support and illustration. This kind of bodily perception-anchored value awareness has much richer emotional depth and cognition than verbal induction alone, it is a necessary prerequisite for the next step of value identification. We should also note here that this mode puts higher demands on teachers’ teacher sensitivity—

teachers need to be able to identify the peak of the student's emotional upheaval, and feel out the appropriate teaching moment of guidance induction; induction that is too early or too late will have almost no effect in turning bodily perception into value awareness."

4.2 Situation-Immersion Mechanism: Competitive Situations Promote Value Identification

The situation-immersion mechanism of embodied education in Value-Oriented Education in PE Curriculum is the basic mechanism of embodied education. Its theoretical basis is the situation-dependence of cognition put forward by embodied cognition, and "environment is curriculum" fundamental point in the theory of implicit curriculum. Its underlying logic is that carefully designed competitive situations themselves constitute a field of education, in which different value elements have multiple existence at the same time; students, naturally based on a genuine, active engagement, can generate value identification while interacting continuously with body and situation without explicit value preaching[14].

For an authentic competitive situation, more than one value element exists organically rather than scatteredly: the presence of rules makes students not only need to develop their inner respect for order and fairness; the unknown outcome of the competition makes students develop psychological toughness to be accepted by the outcome and to bear failure; the designation of team member roles makes students look for a dynamic state of equilibrium between individual and group interests; the bestowal of honour stimulates students' value exploration of holism and responsibility. Students sink into their roles in a complete physical and mental status, repeatedly experience and continuously encounter the above-mentioned value elements in their process to deal with an authentic situation and therefore complete the process of value soaking and value identification construction imperceptibly. The operation way of this path can be summarized as follows: situation design → role experiencing → many values coexisting → immerse naturally → value identification.

Obviously, the first prerequisite for this mechanism to work well is teachers' conscious and purposive construction of competitive

situations in their instruction. Naturally existing competitive activities certainly abound with value contents, but without the teachers' situation construction of ideological and political goals, the education effect of competitive situations would have obviously randomness and volatility. Teachers have to clearly identify target value dimensions during the situation design phase, and on the basis of teaching means such as the setting of rules, division of roles and tasks, intentionally strengthen the demonstration of various value contents of situation, and guarantee effective control of the direction and intensity of value action. And so does this mechanism also share profound theoretical echoes with implicit curriculum theory: implicit curriculum theory holds that students' value connotation is mostly engendered by the curriculum situations structurally designed, rather than explicit knowledge transfer, the situation is curriculum [15]. Simply put, this proposition is highly consistent with the internal logic of situation-immersion mechanism in general, together pointing toward a Value-oriented Education in PE Curriculum instruction paradigm based on situation construction.

4.3 Practice-Internalization Mechanism: Repeated Behavior Consolidates Value Concepts

Practice-internalization mechanism is the consolidating mechanism of embodied education in value-oriented education in PE curriculum. Its core logic is to utilize fully the naturally long-term and repetitiveness in the physical education curriculum, through long-term and continuous practice in normative behavior, to internalize gradually the value concept that from outside behavioral requirements into students' stable value orientations and temperament. "Sensorimotor schemata" embodied cognition theory thoughts have the profound theoretical basis for the practice-internalization mechanism: when people carry on an embodied behavioral mode again and again, the nerve schema corresponding to such behavior will be continuously strengthened until it establishes a stable schema, not only regulating individuals' behavioral modes but, at a deeper level, regulating individuals' cognitive tendency and value choices.

Long-term structure of physical education curriculum at curriculum level provides structural opportunity unmatched by any other

form of curriculum for the functioning of aforementioned mechanism. An PE course is studied over one semester or even more academic years, during which the students regularly participate in motor exercise at certain weekly frequencies and repeat team performance, feel the internal of competition rules, persist in training during exercise in the behavior norm conditions specified by teachers. This repetition of behavior norms at a high frequency and for a long period is a perfect time-scale support for embodied internalization of value concepts to truly occur in an ample time scale. An operational approach to this mechanism can be summarized as: behavioral norm requirement → repetitive exercise of body → habitual schema formation → internalization of value concept.

As shown in Figure 1, Synthesizing the above 3 mechanisms, their internal logic also makes clear their progressive integration: the mechanism of perception-experience mechanism completes the activation of value awareness based on motor perception and emotional arousal, so as to answer the question of “where values are felt”; the mechanism of situation-immersion mechanism completes the natural automatic generation of value identification within competitive context where a large number of values coexist, so as to answer the question of “how are values accepted and identified with”; the practice-internalization mechanism completes the instinctive internalization of value concept on the basis of long-term repetitive behavior practice, so as to answer the question of “how values are naturally consolidated in person’s stable personality traits”. The three mechanisms are not completely independent parallel structures, but are interrelated and mutually reinforce, cooperatively work in the course of progressive logic of “perceptual activation—situational immersion—practical consolidation”, jointly constitute the complete mechanism chain of embodied education in Value-Oriented Education in PE Curriculum, and offer a complete systemological explanation of the unique educational value of PE curriculum from the view point of physical education.

5. Theoretical Implications of the Educational Mechanism for Instructional Design

5.1 Create Authentic Motor Situations to Activate Bodily Perception

Following the theoretical logic of a perception-

experience mechanism, the main principle of instructional design of value education for PE curriculum is to assure authenticity and challenge of motor situations. A special tendency merits caution of current reform situation of ideological and political education in some college PE curriculum: teachers devote a lot of time to class surface that ideological and political content is narrated in words from the teacher’s tongue or the motor practice is substituted by static method such as viewing video, talking in class, to complete ideological and political value transmission by “entering with words”. From the perspective of embodied cognition theory, this so-called “armchair” infiltration of ideological and political education basically separates the real bodily perception (the premise of realizing value awareness activation) and its effect can be completely disassociated. Such authentic bodily participation is a necessary precondition for Value-Oriented Education in PE curriculum to bring value in its educational effectiveness; any idea and political contamination which cancels motor practice is obviously a damage to embodied educational advantages of PE curriculum.

At the specific instructional design level, teachers should consciously integrate competitive confrontation and competitive instructor sections into normal instructional conditions, initiating students’ feeling of body and emotions in the state of competitive confrontation through generation of competitive situations with actual win-lose pressure; they should also actively push in motor challenge tasks with certain difficulty, enabling students to construct tremendous bodily experiences while genuinely encountering physical limits and technical limits; meanwhile, they should strictly restrain pure preaching time out of motor situations, organizing motor practice times to play dominant roles for ideological and political guidance, so as to let value understanding be stood upon body experience rather than to suspend in a circle of pure language expression.

5.2 Identify Critical Educational Moments and Implement Immediate Guidance

On the joint revelation of perception-experience mechanism and the situation-immersion mechanism, the second implication of theory to instructional design of Value-oriented Education of PE Curriculum is teachers’ professional

competence to correctly recognize and use potentially creative lesson opportunities in classroom. The research on emotion in embodied cognition theory suggests that peak moments of emotional arousal are psychological windows when person exhibits the greatest receptivity and sensitivity to value information; the value instruction in this window effect can penetrate deeper and take internalization effect much larger than preaching input to student in the emotional calm state. For physical education classrooms, such critical moments in education are especially manifested in: the short moment after fierce competition when the feeling does not completely subside, recovery moment after students break personal psychological limits, the silence that immediately comes when a team experiences reversal or loss in a critical competition, conflict node where students show obvious changes in feelings during rule disputes. These common aspect in these moments is that students' bodies' experiences have reached a phase peak, both emotional openness and the desire for the meaning are raised at the same time; as long as teachers can engage in values guidance with simple, accurate and infectious words at these moments, they can well guide the deep connection between bodily experience and value cognition, demanding physical education teachers' professional sensitivity relatively high—on the one hand, physical education teachers do not need only to master solid physical skill and teaching skills, but also classroom insight ability to keenly inspect students' emotional states and delicate and precise judgment about intervention time, and linguistic expression skills to form authentic ideological and political guidance into motor situations as natural as it can be, and non-congruent expression; the formation of such abilities should be an important direction to promote physical education teachers' curriculum ideological and political competence professional ability[16].

5.3 Strengthen Long-Term Curriculum Design to Promote Value Internalization

On the basis of the logic of the practice-internalization mechanism, the third theoretical implication for instructional design of Value-Oriented Education of PE curriculum is to transcend from the micro instructional perspective of one session of physical education course to the macro curriculum perspective of

semester, or even a whole academic year, and to plan the succession of value cultivation overall at the curriculum structure level, constructing the progressive whole of value orientation from the overall perspective of the course structure. The teaching effect of a single session of physical education finally remains limited, fragmented; without the logic of whole design between classes, even if ideological and political contents are included in one session, it is hard to reach a firm value orientation and personality traits for students. The good operation of the practice-internalization mechanism logically and necessarily relies on the sufficient extending of the temporal dimensions and systematic accumulation of behavioral practice[17].

For this purpose, physical education teachers should propose a spiral design of "experience—reflection—practice—re-reflection" of semester curriculum: during the first half of a semester, activating students' preliminary feeling of the target value through rich motor experience; during the middle half of a semester, strengthening the immersion of value by the design of competitive situations, assisted by frequent times of reflection conversation, to clarify value ideas; during the last half of a semester, exam the degree of behavioralization of value concepts through full practical task and guide students to reflect systematically on their value growth situation throughout the semester. Spiral progressive semester course design helps the cultivation of values to deepen gradually by "experience—reflection—practice" recurring continuously, and finally complete the fundamental shift from external mandatory requirement to the internal consciousness of values[18].

6. Conclusion

With embodied cognition theory as its core viewpoint, this paper systematically studies the mode of Chinese ideological and political education in college physical education course. It gives the basic proposition of embodied cognition theory such as cognition is "about bodily experience and circumstances" the solid theoretical basis of understanding the educational process of PE curriculum Value-Oriented education. On the basis of this, this article constructs the mode of PE curriculum ideological and political educational course combining education perception -- experience, education situation -- immersion, practice --

ingrain of 3D implementation process. The three mechanisms are complementary inside progressive logic, synergistically disclosing the unique logic of education of Value-Oriented Education in PE Curriculum to take the body as the cognitive organ, authentic situation as the value soil, and long-term practice as the internalization condition, and allaying the long academia estrangement on theoretical understanding of the "bodily dimension" in Value-Oriented Education in PE Curriculum research, and offering theoretical meaning to other practical disciplines' research on curriculum ideological and political education, etc. As a theoretical exploratory study, the actual effect of the three-dimensional education mechanism awaits systematic verification in the future empirical research and is an important future direction for continuing to explore our study.

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