

The Connotation of Embodied Development Model in Physical Education Teaching Situation and its Practical Enlightenment

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Abstract: This study focuses on the problem of situation creation in school physical education curriculum. Compared with traditional physical education classroom teaching, supported by embodied cognition theory, the connotation of physical education teaching situation, embodied performance in the process of motor skill acquisition, situation creation ideas and cases, and embodied situation theoretical model are studied and discussed. The traditional physical education teaching situation is separated from the learning of motor skills. The context should be based on ontological motion perception and interaction with the real environment. Propose the teaching situation of “body perception, consciousness strengthening and environment embedding” and consider the characteristics of learning content, the authenticity of the teaching environment, the use and transformation of site equipment, while having operability, as well as the transfer of knowledge and skills.

Keywords: Situation; Embodied cognition; Physical education teaching; Motion perception

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1. Introduction

Physical education plays an important role in the education system of the country as an important way to improve physical quality and cultivate physical talents. Physical teaching plays a very important role in promoting the physical and mental health of teenagers and improving core literacy. “The National General Colleges and Universities Physical Education Curriculum Instruction Outline” clearly points out: “Physical education curriculum is to promote the harmonious development of body and mind, ideological and moral education, cultural and scientific education, life and sports skills education in one and organic integration of the educational process. It is an important way to implement quality education and cultivate all-round development talents^[1]. Traditional physical education teaching mode often pays too much attention to skill impartation and physical training, pieces together fragmented skill exercises lacks the connection between knowledge and skills, and ignores students’ interest stimulation and subjectivity play, resulting in students’

learning input is not ideal, teaching effect is not satisfactory. Therefore, education departments and sports workers have been exploring how to reform and innovate physical education teaching to improve teaching quality and student participation.

Influenced by the early “dualism of body and mind,” there is a certain separation phenomenon from physical exercise to the acquisition of motor skills, and then to the classroom teaching of physical education. As the main learning content taught in PE class, motor skills exist in the form of physical knowledge, which is different from any other discipline, and requires that the learning of physical education class should fully consider the carrier of the body. Along with the theoretical foundation of motor skills, from the conclusion of stimulus-response association between environment and organism proposed by the behaviorism paradigm to the cognitive theory of brain thinking emphasized by the cognitivism paradigm, and to the interaction theory of “body-brain-environment” advocated by embodied cognition paradigm, the exploration of motor skills generation from the holistic perspective of interaction between human and environment has gradually become a new research orientation ^[2,3].

Situational cognition theory first appeared in the 1990s, led by Brown Collins and Duguid’s paper “Situational Cognition and Learning Culture,” mentioned in this paper: “Knowledge is part of the activity, context, and culture in which it is developed, used,” this view refutes the absoluteness of purely conceptual knowledge and emphasizes the importance of the context and practical practice of knowledge in learning ^[4]. Ecological dynamics further proposes that there is a couple relationship between cognition, body, emotion, perception and physical, natural and social environment, and a non-linear process of sensory input and motor input ^[5]. As a core concept of ecological dynamics, affordances emphasizes that human cognition and decision-making is not a closed information system, but a series of feedbacks made by the body to better adapt to the environment ^[6]. From this, it can be seen that motor skill acquisition is not a product of rational thinking, but a process through body perception, combined with environment embedding, strengthening individual self-awareness, forming spiritual value and reacting on body perception, forming a systematic perception-action coupling ^[3].

Motor skill acquisition is a process of interaction between the body and the environment. In this process, all non-physical information input such as language, pictures and music cannot replace the cognitive acquisition acquired by body perception. With the change in the development paradigm of motor skills, new requirements are put forward for the design and implementation of the physical education teaching process.

2. Definition of the concept of the situation

At present, there are many different explanations and explanations about the meaning of a situation. In the Modern Chinese Dictionary, a situation is interpreted as “Cihai” ^[7]. The basic explanation of the situation in Cihai “refers to the social environment in which a person conducts a certain activity, and it is the specific condition of people’s social behavior” ^[8]. Social psychology explains the situation as an environmental condition that can have an impact on things in the environment within a certain period. From the perspective of pedagogy, a situation is “a meaningful atmosphere and environment made up of certain elements” ^[9]. From the perspective of teachers, context is the background of teaching activities created by teachers for teachers and students to participate in. It provides the deductive space for teachers to guide students to produce learning behaviors in a specific atmosphere. From the perspective of students, context is the background environment for students to complete their learning activities and represent their learning results, which allows students

to have some emotional resonance in the background environment ^[10]. From the perspective of cognition, the situation is the source of information for cognitive activities and builds the emotional atmosphere for cognitive activities ^[11]. Situation is ubiquitous in social life, and it can derive different environmental meanings in different contexts. Simply put, a situation is the whole context or environment in which something happens. According to the above definition, a situation exists in any individual activity and is an external environment composed of objective factors ^[12]. In general, the situation is the sum of all external conditions interacting with the behavior in the process of occurrence, but in the specific learning process, the learning environment and conditions have many restrictions. The teaching environment of physical education is mainly concentrated in the sports place and is also affected by weather, season, site area, teaching facilities, teaching time, visual environment and so on.

3. Problems existing in physical education classroom situation teaching

Miao Y (2009) found through investigation that most PE teachers arrange the situational teaching task in one class, but few PE teachers run the situational teaching throughout the whole unit or the whole semester ^[13]. It is difficult to promote the occurrence of deep learning in sports by splitting the existing situational teaching, and effective teaching situational teaching is not the original objective environment. It is a carefully designed and carefully arranged environment that can be combined with the teaching process, and artificially gives additional attributes for teaching, to better stimulate students' ontological perception of sports. In other words, the situation should be an integrated relationship with teaching, which is three-dimensional and symbiotic, rather than an independent existence and simple splices. From the perspective of a class, a complete learning activity needs to break away from traditional teaching forms such as "teaching class," "military class," "security class," "single technology class" and "test class." The content, methods and situations of these forms of physical education classes are monotonous, and the interaction between students and teachers is extremely limited, which cannot achieve the purpose of cultivating students' core literacy ^[14].

The creation of the physical education teaching situation has been mentioned in several different guidance documents, and has been deeply rooted in the hearts of front-line physical education teachers, and has gradually become an important means to improve the classroom teaching effect. However, there are still problems such as situation creation divorced from the actual movement, fragmentation, and separation from the teaching content, especially in some open class display activities, the teaching situation used in the existence of rigid copy, needs a large number of complex equipment assistance and need to cooperate with many people to complete, not only the effect is not ideal, but also easy to cause out of the daily teaching conditions, blind idealized situation creation process. On the other hand, a simple story, a preview video, or an auxiliary device before class can hardly encourage students to integrate into the environment and strengthen the exercise proprioception, so it is necessary to create a real sports and health education situation for students. Situational teaching is an inevitable choice for the cultivation of core literacy. The creation of a context for physical education represents the transformation of physical education from a competitive sports paradigm to a healthy sports paradigm and is a symbolic change indicator of physical education ^[15].

4. Theoretical support and examples for the creation of embodied situations

In the PE class, where deep learning takes place, learners should show a high degree of enthusiasm for

participation, active thinking about the learned knowledge and skills, and actively communicate and explore, to generate positive incentives. Although the current physical education teaching has long abandoned Descartes' duality of mind and body and does not respect the dissociated cognitive theory, in the actual teaching process, it shows the separation of knowledge and emotion from the learning of motor skills. The learning of physical education has become a simple skill exercise, and students just repeat it mechanically. However, the application of embodied cognition theory in physical education classrooms once again makes people pay attention to the interaction process of emotion, environment and learning behavior. Embodied cognition theory claims that the cognitive process is not confined to the brain, but involves the interaction between the whole body and the environment. The interaction between our body movements, thoughts, emotions and the environment affects our thinking, decision-making and language cognition.

Embodied cognition theory emphasizes the importance of movement in the learning process, and no longer just emphasizes the impartation of rules and techniques, but experiences through imitation, games and participation, so that students can master sports skills through practice, and promote the development of "mind" through "body" learning. This method generally emphasizes the learning of the integration of body and mind. For example, in the learning process of basketball screen cooperation, the teacher suggested that the origin of screen cooperation was that the indoor basketball court in the early days was forced to keep the pillars supporting the house due to structural limitations. Later, players found that dribbling around the pillars could get rid of the tight pressure of defenders. Based on this knowledge situation, teachers can set up multiple marker poles or dummies to simulate the "pillar" and experience the practice of dribbling to find cover. Together with the imaginary "gymnasium with pillar" (that is, the learning environment) and the concept of screen coordination, a three-dimensional learning mode of "expiration-environment-thinking" is formed. Students will gradually discover in practice that the dribbling route is the key to getting rid of the defender, and the pillar will not move. At this time, if the dummy is replaced by the "pillar" played by the classmates, the knowledge will be transferred, and the "pillar" will become the defender, which will transition to the formation of the preliminary concept of moving cover in the rules, thus forming the acquisition of knowledge and skills.

5. The theoretical model of embodied situation creation

In physical education teaching, explanation, demonstration and error correction are also needed, but they can only be used as a supplement to physical perception and cannot be separated from environmental conditions. Physical education is a learning process led by understanding, rather than speech. The creation of an embodied situation needs to fully consider the characteristics of the learning content, the authenticity of the teaching environment, and the use and transformation of venue equipment, which is operable in the learning process and does not break away from the daily classroom organization, showing the characteristics of continuous and complex, interesting and competitive. In traditional teaching, teachers often hope to make students infinitely close to standard actions through demonstration, error correction and repetition, which will deprive students of their curiosity and desire to explore new things and skills, and block the cognitive system pathway from information to behavior. However, the creation of embodied situations can strengthen students' perception-motor coupling and enhance the incentive of emotion to practice. So that students can actively explore the truth and pursue success. Therefore, for the learning of sports skills, based on the trinity model of body perception, consciousness enhancement and environment embedding, the theoretical model of embodied

situation creation is needed in current physical education teaching.

6. Summary

Based on the characteristics of sports skill acquisition and the process of thinking cognition formed by physical perception, PE classroom teaching should pay more attention to the creation of physical practice perception situations based on the introduction of thinking situations, to realize the integration of skills with cognition and emotion. Therefore, based on the Western embodied cognition theory, this study explores the perceptive and transferable embodied situation creation theoretical model and teaching practice enlightenment based on real classroom and real scenes in physical education based on body perception and case analysis, emphasizing that teachers and students themselves are also part of the situation, and the situation is constructed from the physical practice of teachers and students. Thus, the learning process of body perception promotes consciousness strengthening and finally mastering knowledge and skills formed, and in this way, it strives to provide some theoretical references for the current school physical education reform and the construction of an in-depth physical education classroom.

Disclosure statement

The author declares no conflict of interest.

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