

“The Relationship between Mind and Body” in Embodied Cognitive Theory and Its Educational Implications

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Abstract: The relationship between mind and body is an old new topic, and it has also been the focus of discussion in the fields of philosophy, psychology, and pedagogy. The reason why it is ancient because philosophical thinking has been used to explore the relationship between the subject and the object from the beginning of the generation of an independent individual consciousness, including the relationship between mind and body. The reason why it is brand new is because with the development of cognitive psychology, the theory of embodied cognition was proposed in the 1980s, and the ancient propositions of mind and body relations were re-examined, which also prompted the discussion of physical and mental relationship to turn from philosophical speculation to experimental science. This article combines the understanding of the relationship between physical and mental in Eastern and Western cultures, and re-examines the relationship between physical, mental and environment from the perspective of embodied cognition theory, as well as the inspiration for individual development.

1. Introduction

The body is the earliest tool used by humans to connect with the world. It touches, perceives, changes, and creates, and provides us with a rich sense of understanding of ourselves and of the world. Friedrich Nietzsche once said that your body is smarter than your soul. However, in the process of growth, human beings are wrapped in the brain, gradually ignore the messages sent by the body, and even forget the existence of the body. The body began to become a tool of practical action, only for the mind, and even some philosophers believe that “the body is only a tool of the mind.” This is even more the case in modern society, where people are busy with their livelihoods and tasks in their heads, and take them for granted. Thereupon, the physical feelings became more dull and numb. It was not until the signals of pain and illness were signaled by the accumulation of stress and emotions that people noticed and realized again the existence of the body. Ralph wrote in “Integration of spirit and body” that the body is a living autobiography, and exploring the body is a journey of self-understanding and self-healing. When people habitually ignore their physical feelings, they also forget the unique wisdom that they were born with, even the important opportunity for self-exploration.

2. The Theory of the Relationship between Body and Mind in Eastern and Western Cultures

2.1 On the Relationship between Mind and Body in Eastern Culture

The body is ancient and intelligent. It presents the inner feelings and desires of human beings, and in the meantime, directs the direction of the soul. For thousands of years, from ancient Chinese culture to Western philosophy, all have considered, people elaborated and explored the relationship between body and soul. It can be said that ancient Chinese philosophy is about the philosophy of the body. The concepts of self-cultivation, the integration of knowledge and action, and the integration of mind and body run through the whole time, guiding the development of thousands of years of culture and history. Ancient Chinese philosophers believed that “the body is the Tao.” The so-called Tao is the body itself. Therefore, all philosophical thinking is related to the body, and

should start from the body rather than consciousness. Therefore, the concept of the body is also different from Western culture in Chinese culture. It is not the same as a pure physical object, but is more endowed with “hands on” and “personal”, with more proactive experience and practicality, rather than physical tools that just passively accepting instructions. There is a saying in *Huainanzi-Si Lun Xun*: A rope called Mo is a kind of measuring device, which can be curled up and hug, or stretched to measure straight aim. Therefore, the saint shows the characteristic that the Mo rope can stretch and flex. *Han Feizi-Xianxue* also states that: “He is a fool who hears a statement and confirms it without verifying it with facts”, which all emphasize the importance of physical experience and personal experience. On the issue of the relationship between mind and body, the most manifestation of consciousness is the theory of “integration of knowledge and action” founded by Wang Yangming, a well-known ideologist, writer, philosopher, and military strategist in the Ming Dynasty. Wang Yangming believes that knowledge and action are united. “Knowing and acting is one concept with two efforts, and this one concept must be based on these two aspects to make a sense.” In the relationship between knowledge and action, knowledge and action should go hand in hand, regardless of sequence, and ordinary people often divide knowledge and action into two things, and consider “knowledge” ahead of “action”. In this regard, Wang Yangming believes that “When someone gets the knowledge without action, then it means ignorance “ and emphasized that “substance” and “I” are also united. Its famous argument “ ‘Substance’ belongs to ‘I’, while ‘I’ also belongs to ‘substance’ fully reflects this view. Today, we can only say that he had plainly guessed the idea that there is an interrelationship between subjectivity and objectivity, but how it was connected was unclear. Throughout the history of Chinese sages’ understanding of the relationship between mind and body, they have always been deeply imprinted with the ideas of “integration of knowledge and action” and “integration of mind and body”.

2.2 The Relationship between Body and Mind in Western Culture

In contrast to the East, its debate on the relationship between mind and body can be traced back to ancient Greek philosophy, and it provides a theoretical framework for separation of mind and body. The most representative is the “philosophy dualism” proposed by Rene Descartes. This view holds that “body” and “mind” are two self-fulfilling realities, which are independent of each other and can exist independently of each other’ s existence. In his book *On the Passion of the Soul*, Descartes formally declared that the soul and the body are separate, “I think, therefore I am.” This view undoubtedly establishes the subjective status of “mind” and ignores the meaning of “body”. In the 19th century, German classical philosopher and representative of idealist philosophy Hegel also pointed out that “thought constitutes not only the entity of external things, but also the universal entity of spiritual things.” It is in such a philosophical atmosphere of mind-body dualism, cognition is considered to be higher than the body, ignoring the role of the body in the formation and development of cognition, and gradually forming a solid thought of disembodied cognition, which excludes physical perception from rational cognition with no attention.

The mind-body dualism is wrong, and the mind-body dualism of mechanical materialism is also paranoid. Those who hold mechanical materialistic mind-body monism even believe that “the gallbladder secretes bile, just like the brain secretes thought.” This view cuts off the connection between thought and society. It wasn’t until the rise of existential humanism that the emphasis on “existence preceded essence” evoked awareness of the basis of human psychological activity. In the discussion of the relationship between mind and body, there are also many philosophers who have boldly challenged and put forward perspectives. In the 18th century, Immanuel Kant, the founder of German classical philosophy, proposed that “The substance of the human body is not only indispensable when its internal invisible spirit creates the original concept of external things, but also for repeating these concepts, internal activities that connect concepts, which is, thinking activities, are also indispensable. “This reflects the concept and thought of “ integration of spirit and body” . In the 19th century, Friedrich Wilhelm Nietzsche, a German philosopher, poet, thinker, and founder of modern western philosophy, re-examined the status and influence of the body, and put forward the “body monism” with the body’s creativity as the core, and insisted that “man is the

body.” The German philosopher Heidegger also proposed the concept of “Being-in-the-world”, which transcended the division of the dual world and believed that there was no distinction between subject and object. Existence itself must be interconnected with the world. Man and the world are inseparable and integrated. Although the voice of “integration of mind and body” appears, under the shroud of western philosophy, it is generally believed that the mind and body are like the software and hardware of a computer, and our body and the cerebral cortex of cognition, thinking, and learning abstract reasoning is irrelevant, and this mind-body dualistic view has dominated the field of Western thought for nearly two centuries.

3. The Reshaping of Mind and Body Relationships by Embodied Thoughts

Under the different philosophical and cultural systems of the East and the West, the attitudes towards the relationship between mind and body show significant differences. However, with the development of western philosophy, cognitive science, and psychology, the ancient proposition of “mind-body relationship” has been redefined. In the 1980s, with the continuous progress of cognitive science, the emergence of embodied cognition theory made people understand that human cognition is formed in the interaction of brain, body and environmental experience. It is only a carrier of spirit or cognition, and even has a constitutive effect on their formation. It is not a passive device for receiving and transmitting brain commands, but a living entity that can think, make decisions, and create. The emergence of this theory is not only the result of speculative deduction, but also a new sprout based on a large number of scientific empirical studies. “Embodiment” has also become a hot topic. The concept of “mind-body integration” is affecting cognitive science, psychology, computer science, artificial intelligence, linguistics, sociology, and education. In academic fields such as science, some scholars even commented, “Embodied cognition is sweeping our planet ...”.

3.1 “Integration of Mind and Body” in Embodied Cognition

For a long time, we have used the “mind” to refer to the cognitive processing part of the core of the mind, including scholars and ordinary people who have been arguing about the importance of the mind and body. Many people think that the mind is more important than the body, but some people value the role of the body more. No matter what kind of viewpoint, it is actually a split dual thinking. To put it another way, the mind is also part of the body, and the mind and body need to be viewed as a whole. The theory of embodied cognition treats the relationship between mind and body with a systematic and holistic view. The so-called “embodied cognition” is a philosophical basis different from “disembodied cognition”. Human cognition is highly related to the physical properties of the body according to the embodied cognition. For the formation and understanding of advanced cognitive processes, not only the brain, but also the interaction between the body and the outside world plays a vital role. In the theoretical framework of the integration of mind and body, the nature of cognition is redefined. It is considered to be a highly embodied and situational activity. Human cognition, body and environment are closely combined. Therefore, cognition, body, and environment constitute the “embodied triangle”, and cognition, body and environment interact with each other. In simple terms, cognition is embodied and embedded. The brain is embedded in the body and the body is embedded in the environment. The “body, mind, and environment” constitute an integrated system.

3.2 The Interrelationship of the Three Elements in the Embodiment Theory

In embodied cognition theory, the mind, body, and environment form a unified model of interaction, which has subverted people's long-standing understanding of the three.

3.2.1 The mind’s Embedding in the Body

In the 1940s and 1950s, with the development of computer technology and neuroscience, people had a new understanding of the brain. The prevailing view at the time was that the brain, like a computer, produced human minds in the same way that computers operate. Therefore, the brain's

“command” issues instructions, and our body simply receives instructions and completes the corresponding tasks. In a sense, this computer mind theory inherits and develops Descartes' bodymind dualism. Descartes believes that the human body is tangible and exists mechanically. Although the mind is invisible, it exists in the pineal gland of the brain. The mind controls the body through the action of the nervous system. Both the Cartesian doctrine and the modern neuroscience point of view treat the mind and the body independently, and ignore the influence of the body on the mind.

Objectively speaking, there is no doubt that the human mind, such as cognition, emotions and feelings, affects the state, behavior and even health of the body. For example, when a person's psychology is under a certain kind of emotion or pressure for a long time, somatic reactions such as pain, rash, or other psychosomatic diseases may also occur in the body. The initiation and change of human behavior is also often affected by psychological activities, and an idea or an emotion can also trigger a behavior. In addition, the body is always expressing what it thinks and feels. Any thoughts and emotions that have not been noticed on the conscious level will be immediately presented through the body. Imagine that there is a “fast track” between the mind and the body, which conveys any subtle feelings, thoughts, and emotional experiences of the person to the physical level for display.

The theory of embodied cognition fully affirms the connection between mind and body, and interprets the relationship between mind and body from a new perspective. The embodiment theory holds that in the process of physical and mental interaction, the effect from the mind to the body is true, but the reverse effect is also real. Under the embodied theoretical framework, cognition is understood as a highly physical and contextualized activity. The body shapes the human spiritual world, and it affects human cognitive thinking, emotions, learning, and creativity. As Richard Strozzi Heckler, an American writer, said in his book *Anatomy of Change*, “With the body, we become learners.” So the body is more than just The container and externalized form that carry spiritual power are the entities that create and change the inner spiritual world. At the same time, the embodied theory also emphasizes the influence of physical factors such as body structure, physical state, and sensorimotor system on cognitive formation. French philosopher and figure of embodied thought Merleau-Ponty proposed the concept of “embodied subjectivity”. The so-called “body subject” refers to the way that one knows oneself, others and the world in the way of “recognition”. Therefore, different bodies will create different experiences, and different physical experiences will form different cognitive experiences and ways of thinking. For example, people can never understand the experience of bats as bats. In response, Shapiro (2011) pointed out that the physical characteristics of an organism limit or restrict the concepts it can obtain. The unique structure of the human body and the unique experience of the sensorimotor system form corresponding cognition, and even physical properties of the body can affect changes in cognition and other psychological activities.

3.2.2 The Body Awakens the Mind

The traditional mind-body view holds that the body presents the information of the mind. There is no doubt about it, and examples abound. For example, when we feel wrapped in anger, the body directly receives the information and expresses it: our eyes such as the torch, red cheeks, lips trembling, muscle tension, sudden acceleration of heartbeat, fever or trembling, and even sweat hairs erected up ... Through the body, we honestly express our inner emotions to the angry object. At that moment, our bodies are awakened by the mind. For another example, when people have secrets, the inner contradictions and conflicts will be presented through unconscious body movements. Even if they are not expressed in words or are not even aware of themselves at the conscious level, the body appears as it is.

Body and mind awaken each other. Our brain consciousness takes information from the body and transmits it to different parts of the body. Gibbs, an early cognitive advocate, once said that what people perceive depends on what he can do, and what he can do ultimately changes the world he perceives. Therefore, when physical behavior changes, so does psychology. The path between the

body and the mind is not a one-way path, but a two-way path. The path from the body to the mind is also workable. As James Lange theory shows, we are not crying because of sadness, we are sad because of crying; we are not laughing because we are happy, but we are happy because we laugh. The theory of embodied cognition has confirmed through a large number of scientific experiments that while changing and shaping the body, people are also changing and shaping the mind.

3.2.3 Blend the Body and Mind into the Environment

In addition to hereditary factors, the body is shaped by the environment and culture. Traditional psychology and cognitive science only consider the role of the brain in the formation and development of cognition. The emergence of embodied cognitive theory is an extension of the traditional concept of cognition. It not only considers physical factors, but also environmental factors. In addition to exploring the relationship between the body and the mind, it further explores the environmental factors of cognition and expands the boundaries of cognition. Researchers believe that cognition has embodied and embedded characteristics. The brain that controls cognitive functions does not exist independently of the body, but is embedded in the body, and the body is embedded in the environment. All of them form an integrated body system. As Melo Ponty, a representative figure of embodied theory, said that the subject of perception is the body, and the body is embedded in the world, just as the heart is embedded in the body, and the perception, the body, and the world are unified. The body is not just a machine manipulated by the mind, but a positive, living creation that interacts with the world through the body. The advocates of embodied learning advocated to experience and perceive through the interaction between the body and the environment. In China, there is a saying goes “Traveling thousands of miles is better than reading thousands of books”, which highlights the importance of experiencing and learning in the environment.

Therefore, in the theory of embodied cognition, cognition, body and environment are not three isolated factors, but the relationship of progressive, nested and expanded layers. Cognition is based on the body, and the body cannot leave the environment. Therefore, “body” in “embodiment” not only refers to the human body, but also includes the category of environment. The extension of the concept of “body” from the narrow sense to the concept of “substance” is the expansive meaning of “body-sense”. It can be seen that cognition is formed in the interaction between the body and the environment. It is not a process of “reflection”, but a process of “construction” and “creation.” The body and the environment play a constitutive role in the formation of cognition. 4. Enlightenment of Embodied Cognitive Theory on Education

Education is an important ladder for the progress and development of human society, and its role in individual growth is undoubted. However, traditional education focuses more on the promotion of knowledge and intelligence, and weakens the individual's overall development goals. The phenomenon of “separation” between the separation of mind, body and environment affects the scientific development of education. Therefore, we must take the “mind-body-environment” relationship theory of embodied cognition theory as the basis, and promote the educational ideas and practical methods from the perspective of whole person development.

3.3 Education Should Look At People from the Integrity of “Mind-Body-Environment”

As a complex creature, human beings can never be viewed from a single perspective, especially the exploration of the human mind requires a holistic perspective. The theory of embodied cognition is providing such a perspective, allowing us to look at the individual human being from a systematic perspective of mind, body, and environment. This is a brand new challenge for ancient Western philosophy and cognitive science and other related disciplines, such as psychology and pedagogy. It also provides a new direction for the development of the discipline. Scholars no longer look at individual humans from a divided perspective, and no longer understand individual human development from the perspective of physical and mental separation. This new trend of thought makes us re-examine the true meaning of life, and also shift our attention to the parts outside the brain, seeing the unique wisdom of human beings stored in the body. Not only can we search for puzzles from the mind, we can also find answers from the body and the environment. With this

holistic thinking and understanding, when facing problems of disease, frustration and potential development, people can use all the resources in the body and environment to respond. Lawrence (2012) said that the acquisition of this kind of physical intelligence requires us to learn to listen to the body ... This knowledge does exist, but it is often hidden behind direct awareness. To get this kind of unconscious knowledge, we need to pay more attention to our bodies. Therefore, understanding the body and the environment can make us understand the mind, and this is the beginning of truly understanding oneself. Education needs to start from the body and integrate the systemic role of the body in interacting with the mind and environment to look at the individual's psychology and behavior, so as to better provide education support and shape the soul.

3.4 Education Should Understand People from the Complexity of “Mind-Body-Environment”

Whether in daily life practice or in theoretical research, people place too much emphasis on the importance of the soul. The mind, as the dwelling of the soul, is above all other parts of the body and has a supreme position. People pursue the acquisition of knowledge, enjoy the joy of philosophical thinking, obsessed with the use of reason to judge and make decisions, get used to relying on the mind to outperform others, and even let the important elements of the mind and the body participate in spiritual activities. The soul seems to exist independently in the world, and it is only in the dwelling of the mind that controls everything. In daily life, we see too many people who are entangled in the mind but have never or are not allowed to feel the existence of the body, nor can they explore the mysteries of the environment. However, whether it is the body or the environment, it is a key element that triggers people's cognitive, emotional and other psychological activities. It is unilateral to talk about the mind without the body and the environment.

According to embodied cognition theory, the body and the environment are not only affected by psychological activities, but in turn have a positive effect on the shaping of the mind. We know that the body and the environment are complex, and the human mind is even more so. Education should not simply follow the “stimulus-response” theory proposed by behaviorism, but should explore the development rules of the educated object from the perspective of the complex system of “mind-body-environment” to find the basis of education theory and practice .

3.5 Education Should Guide People from the Practicality of “Mind-Body-Environment”

Whether it is about human beings, or the natural environment, economic conditions, science and technology, and medical standards, change and development have always been the subject of human society, and education is the method and way to achieve this goal. Today, human society is about to enter the third decade of the 21st century. The development speed of science and technology, medical care, economics and culture is changing with each passing day, and people are also changing subtly as the external world changes. However, the change and development that most people seek is nothing more than cognitive and mental. For educated people, only arm the mind with knowledge is real learning, while physical training and expression are ignored. Under such a “separate” and locally developed education, the people cultivated will eventually be physically and mentally separated and emotionally indifferent. The so-called “talent” is just a mind full of knowledge. With the emergence of embodied cognitive theory, pedagogy and other fields began to pay attention to the role of body and environment in shaping individual development, and no longer talk about cognition and mind in isolation. This theory is not only confirmed in the academic field, but also more and more verified in practice in daily life, bringing new opportunities for development in many disciplines. For example, in the past, the diagnosis and treatment of many mental illnesses often depended only on the methods and means of cognitive change, and according to the viewpoint of body and mind integration in embodied cognitive theory, mental health can be improved by promoting physical movement. In this process, the mind, body, and environment form a tight whole. There is no distinction between primary and secondary, but participate and act together. Under the guidance of such a concept, human development has also transformed from a one-sided development to a systematic “well-rounded person” development direction.

All in all, embodied cognition theory is a challenge to the long-established dual view of mind and body, and the systemic view from mind to body and then to the environment also brings new

enlightenment to the study of human beings. From the perspective of the theory of embodied cognition, the mind is embodied, and cognition is not a separate behavior of the brain. It is necessary to mobilize the various functions of the body to realize its potential. The mind, body, and environment forms an integrated system. The concept of incarnation also coincides with the traditional Chinese philosophy of “integration of mind and body, unity of knowledge and action”, and advocates that everything starts from the body and integrates the mind and body. Under the guidance of embodied cognitive theory, psychology, pedagogy, and many other disciplines related to the development of human health are also developing in the direction of physical and mental integration.

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