

Re-examining the Educational Significance of Learning Bodily Movement: An Approach Using the Concept of “Affordance”

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This study aims to re-examine the educational significance of learning bodily movement. To realize this goal while considering the related discussions in the previous studies, a potential cue from the concept of affordance developed by Gibson is taken into account. Understanding bodily movement from a perspective related to the concept of affordance generates a notion that learning movement will serve as a proof of using affordances in the environment, which will eventually lead to more options in life in the sense of expanding the possibilities for action. Furthermore, the sense of expanding the possibilities for action is human development, which is something that lasts a lifetime. Simply put, learning movement in itself constitutes a foundation for enriching life and living better, and this further can be recognized as possessing educational significance.

Keywords : affordance, James J. Gibson, possibilities of action

1. Introduction

1.1. Past Research About the Educational Significance of Bodily Movement

By investigating the discussions in the educational significance of learning bodily movement in the field of physical education research in Japan, an underlying premise common to all of them is obtained. In simpler terms, they argue that learning bodily movement invokes a change in the body, which is intimately involved in people’s growth as human beings. Thus, this can be recognized as having educational significance.

In particular, as relevant research in the field of the philosophy of sport and physical education, a series of related studies by Takizawa (1999, 2008a, 2008b, 2009, 2014) are cited. These are systematic studies of the body and bodily movement that focus mainly on the education of the “body” discussing the necessity of a movement praxis aimed at acquiring a “wise body” in particular while also

targeting the elucidation of the structure of movement praxis and movement instruction.

On the other hand, Sugiyama (2007), who considered training the body as the goal of embodied education, states that this training process is simultaneously a process of learning “movement.” This is based on the premise that nurturing the body only becomes possible as a result of learning to move. In the same vein, various movement based materials have been considered and put into practice as physical education content. Moreover, as a consideration pertaining to bodily movement, Kimura (1997) points out that “learning new movements or changing movements in relation to other people or things not only improves the body’s performance as a thing but also restructures the way we engage with the world and ourselves within our bodies” (Kimura, 1997, p. 33).

Worthy to note, discussions focusing on the body and bodily movement are not limited to individual studies but have been constantly addressed as part

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of discussions at symposia convened by the Japan Society of Physical Education, Health, and Sport Sciences (Philosophy Section) and the Japan Society for the Philosophy of Sport and Physical Education.¹⁾

On the contrary, the body of literature that has amassed in the field of sports kinesiology should not be disregarded. For example, Miki (2005), who indicated that school-based physical education tends to neglect learning for skills acquisition, argues for the importance of physical education classes from the viewpoint that positioning “learning how to move” as the focus of learning in physical education leads to “acquiring a ‘body that can move.’”

Also, this opinion can be regarded as a common understanding shared throughout Miki’s research field of sports kinesiology. In fact, Asaoka (1994), a researcher in the same field, attempts to describe clearly the basis for the existence of movement learning in physical education as a subject, focusing on the tendency to neglect the intrinsic educational value of acquiring movement skills. According to Kaneko (2002), who is a leader in this field, “it needs no exaggeration to say that the process of learning and becoming more proficient at new ways of moving provides valuable educational opportunities for character development” (Kaneko, 2002, p. 80).

Nonetheless, as indicated by the wealth of prior research publications and the diversity of themes addressed by ongoing symposia, a more detailed discussion is needed to overcome the research challenge of demonstrating indubitable answers as to why bodily movement is necessary for human beings and why educational significance is recognized at bodily movement.

1.2. Objective of the Study

This study aims to re-examine the educational significance of learning bodily movement.²⁾ To realize this goal while considering the related discussions in the previous studies, a cue from the concept of affordance developed by American psychologist James Gibson is taken into account, with the aim of contributing further to the theoretical foundations of that significance. The reason for taking cues for the discussion in this

study from the concept of affordance is the connectedness of the ideas in other fields. Simply put, while this idea has significantly contributed to the elucidation of the processes of human movement learning and somatic knowledge, it has also been indicated in other fields, including that of the philosophy of sport and physical education.³⁾

Moreover, Gibson coined the term “affordance” as ultimately only one of the perspectives he proposed for thinking about human behavior, which means that it does not necessarily summarize the full extent of his research findings. Taking this into account, this proposed concept of affordance is one idea for solving the research challenge addressed in this study rather than attempting to apprehend Gibson’s research in any comprehensive manner.⁴⁾

2. Bodily Movement and the Concept of Affordance

Affordance is a neologism coined to express the interdependence between human beings and their environment and is defined by Gibson as “what the environment offers the animal” (Gibson, 1979/1985, p. 137). What the environment offers, for example, refers to the air for respiration, water for swimming, and ground for standing, walking, and running.

Sasaki (2008a) perceives affordance as the quality of environment that can be understood and made use of by acting. By making use of them, human beings (animals) have caused their actions to evolve. Moreover, the environment offers (affords) humans and animals with various possibilities for action. These varied actions of human beings are comprised not only of physical capabilities but also of the environment itself that lays the groundwork for the possibility thereof (Tanaka, 2014, p. 50). Thus, affordance is a term that refers to the possibility for action that the environment offers to animals.

Considering bodily movement from an affordance viewpoint, two things are unleashed. First, people who can manipulate their bodies freely are individuals who use various affordances in the environment. Second, learning new exercises means learning how to use affordances in the environment in new ways or else taking fresh notice of these affordances. Notably, the awareness and use of

affordances in the environment are unrelated to any conscious awareness of these affordances on the part of exercising subjects themselves, as this is an awareness located “in the body,” so to speak. Specifically, the discovery of affordances can only be achieved by the accumulation of interactions with one’s environment through personal bodily movement.

On this note, Takizawa (2008a) observes the following:

Being able to do something means being able to build a relationship with the outside world. To build that relationship requires an exercise praxis. New relationships can be built on the many relationships already acquired by praxis. That is precisely why what we are able to do is important. ... we have to be able to do it, precisely because that ability is proof that a relationship has been built (Takizawa, 2008a, p. 6).

Taking into account the state described in this section, that is, of being able to build a relationship with the outside world, one could portray this as the state of being able to use affordances in the environment. Needless to say, by repeating interactions with the environment through bodily movement, human beings can learn new ways to use these affordances, the proof of which is manifested in the form of learning new bodily movements.

Moreover, it is considered possible for human beings to gradually increase the number of exercises they are capable of under their own power based on the exercises they learned in the past. For example, the Russian neurophysiologist Bernstein, N., renowned for his research on dexterity of movement and its development, describes how the potential for action in everyday life continues to expand in the following terms.

There is virtually no “real-life” movement that would not have an element of adaptive switchability to various, although perhaps minor, unexpected events. Thus ... , gold specks are scattered all around the world of our everyday movements just like those in the gold-bearing

sand on the river bed (Bernstein, 1996/2003, p. 263).

The dexterity that Bernstein describes here is regarded as something that lies “in finding movement as a solution for any situation and in any condition” (Bernstein, 1996/2003, p. 21). Furthermore, he states that “dexterity accumulates with movement experience” (Bernstein, 1996/2003, p. 290). In simpler terms, the aforementioned passage demonstrates that human beings can calibrate exercise in response to their environment. Specifically, this suggests that human beings are constantly learning new exercises through their interaction with an ever-changing environment, which could signify the possibility that the affordances they are able to use will also gradually increase.

3. Acquisition of Exercise throughout Life

With respect to the process of seeking such affordance, Sasaki (2011), through observational studies of infants, has revealed that infants use the affordances of their surroundings when learning to roll over and crawl. He has reported further that infants—who are unable to do anything immediately after they are born—learn to roll over by using the low ledge afforded by the baby’s futon and the floor and suggested that depressions in the soft material of the futon afford an incentive to begin crawling (Sasaki, 2011, pp. 358–359).

By using affordance, human beings are able to learn movements and broaden the scope of those movements. Worthy to note, this kind of movement learning situation not only applies to the development aspect of infants intensively focused on learning various movements but also is repeated throughout our lives. In extreme cases, circumstances akin to an infant’s learning to move can also arise in settings where an injury or disability means that one must come to terms with an unfamiliar body.

For instance, Sasaki (2008b) offers the example of a person who has amputated legs below the knee as the result of an accident. When such a person swims as a part of a rehabilitation program, he or she will first try to flutter his/her legs using his/her

shortened thighs. After several days of moving about in the water, however, this fluttering movement will be replaced with a horizontal movement in which the swimmer swings the thighs left and right while twisting the back and hips. Commenting on this situation, Kimura (1997) notes that “regaining the ability to swim means to be able to perceive and identify meaningful information (affordance) that will gradually enable new movements from the stimulus of chaos generated in the relationship between familiar movements and the water” (Kimura, 1997, p. 32).

While that may be an extreme example, losing the ability to perform a movement that would normally be a routine after suffering an injury or physical damage and having the skill to calibrate one’s movements to conform to this new physical condition is something that everyone experiences on a daily basis. Simply put, human beings are changing the relationship with affordances to suit their own unfamiliar bodies. In this way, they are constantly learning new movements as they explore affordances throughout their lives.

Furthermore, Kono (2015) demonstrates that this kind of search for affordances throughout their lives is itself a development for human beings. As proposed, the concept of development and his assertion that education should support development are suggestive in terms of examining the intrinsic educational significance of learning to move.

4. Human Development and the Search for Affordance

Kono (2015) concludes the development for human beings as the process of expanding the possibilities of action. He further states, “The ultimate goal of education is to extend the person’s potential and support them in achieving their desired quality of life” (p. 54). He also notes here that it is up to the concerned individual to determine precisely what state constitutes a high quality of life and that education is what develops the basic options for achieving that end.

In the same manner, the capability of human beings to expand their range of options in life can be attained through constant human development.

Kono extrapolates that by knowing and perceiving affordances, one can know one’s own possibilities for action. Hence, they can act with intention. In simpler terms, knowing the affordances that one can use means being able to perform an intentional action, which will lead to expanding the range of options in life.

In addition to Kono’s observation that “in current educational circles, development is considered to be lifelong and endless” (Kono, 2015, p. 57), the expansion of possibilities for action (i.e., the search for affordances) is something that continues for everyone through their entire lives. Taking this into consideration, this expansion of possibilities for action being apparent in the dimension of the trivial actions in our everyday lives is consistent with what was described earlier in Bernstein’s discussion (Bernstein, 1996/2003).

In contrast, it has also been indicated that gaining the ability to use new affordances can become a form of learning as lifelong sports (Takahashi, 2015). Here the latter’s goal is to cultivate a foundation for living a self-fulfilling life by continuing autonomous learning through sports over the course of one’s entire life. Moreover, he says that “finding new ways of engaging with the physical environment through movement, that is to say, learning in the form of discovering new ways to engage with affordances, and then by using those affordances to become able to move in ways that were not previously possible, and noticing new ways of moving the body” can also be conceived of as part of learning for cultivating a foundation for living a self-fulfilling life (Takahashi, 2015, p. 24).

Specifically, this learning is not limited to learning the acquisition of skills and knowledge required for a particular type of movement and becoming able to apply them on one’s own. Therefore, rather awareness of affordances through interaction with the environment and discovery of new ways of engaging with affordances can also be considered as learning through the experience of movement.

5. The Educational Significance of Bodily Movement

Considering once again the educational

significance of bodily movement based on the previous discussion, it could be summarized as follows. Human beings learn bodily movement while exploring new affordances in every stage of their lives, that is, from birth to death. Learning new ways of moving means extending the range of life options in terms of expanding possibilities for action, which also leads to improved quality of life and the cultivation of a foundation for a self-fulfilling life. Because learning new movements is in itself a foundation for enriching life and living better, then learning of bodily movement is considered to have educational significance.

However, this does not mean that children should be taught every movement of the body or made to learn movement. In other words, learning movements blindly will not lead to cultivating the body, and the vision of the ideal body to be trained must be demonstrated as an educational objective. In the end, without an ideal image of the body to cultivate, no one will be able to obtain a way to cultivate that body. It is, thus, precisely because the learning of bodily movement is a process of lifelong development, an avenue to explain the ideal image of the body that should be cultivated and facilitate the learning of movements oriented to the development of that ideal body.

6. Conclusion

This study re-examined the educational significance of learning bodily movement. As a potential clue to this discussion, the study specifically used Gibson's concept of affordance to inspect the educational significance of bodily movement and attempted to contribute to furthering the theoretical foundations of that significance.

Understanding bodily movement from a perspective related to the concept of affordance generates a notion that learning movement will serve as a proof of using affordances in the environment, which will eventually lead to more options in life in the sense of expanding the possibilities for action. Furthermore, the process of expanding these possibilities is human development, which is something that lasts a lifetime.

From this viewpoint, it can be observed that

bodily movement does not have educational significance because it engenders a variety of effects when used instrumentally. This is due to the fact that learning movement in itself constitutes a foundation for enriching life and living better and that learning bodily movement can be recognized as possessing educational significance. Even so, children should not be required to learn every movement through the context of education. It is worth pointing out that learning of bodily movement is a process of lifelong development, an avenue to expound the ideal image of the body that should be cultivated and facilitate the learning of movements oriented to the development of that ideal body.

Based on the discussion in this paper, clarifying the ideal image of the body to be developed in physical education may be cited as a future challenge, which will lead to the further deepening of the educational significance of learning bodily movement.

Notes

- 1) Examples of representative topics include those discussed by Takahashi et al. (2016), Takizawa and Inoue (1998), Inoue and Takizawa (1999), and Kamasaki et al. (2013).
- 2) The key terms used in this study are defined as follows. (1) "bodily movement" or "movement" is broadly used as a term that includes physical activity. In other words, it is a term that refers in general to how human beings move their bodies. (2) The term "educational significance" and the expression "to have educational significance" refer to possessing value that contributes significantly to human education. (3) The word "environment" is used exclusively in reference to the external environment that surrounds the body, that is, the physical environment.
- 3) Among the studies in the field of physical education and sports philosophy, for example, Shimbo (2002) engages in a discussion of affordance as a clue for clarifying "the relationship between human perception and the body." While Takahashi and Inoue (2009) represent an attempt to apply the idea of affordance to physical education and sports theory. In other fields of inquiry, for example,

Suwa (2016) offers a discussion that uses affordance in the context of referring to the relationship between language and the learning of somatic knowledge. While Mutō (1995) attempts a discussion of children's development that relies on the concept of affordance in terms of the relationship between subject and object.

- 4) There is a risk that the use of Gibson's concept of affordance in isolation could lead to misunderstanding of his wider body of work. However, in light of the fact that Sasaki (1996), a leading authority on Gibson's research in Japan, has said that "the theory of affordance ... is an idea that is beginning to percolate throughout a variety of disciplines, including not only psychology but also psychiatry, the life sciences, architecture, engineering, and the arts," (p. 3) and is actively trying to apply this concept in other fields, it was judged that there would not be any problem with referring to the concept of affordance in this study, either.

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