

Embodied Learning and Physical Literacy: A Daoist Interpretation of Peer-Teaching in Primary Physical Education

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Abstract

There has been a growing focus in contemporary physical education on movement-based learning strategies that are broader than the acquisition of movement skills and performance-based instruction. In this context, embodied learning and physical literacy have emerged as topics of interest because of their emphasis on experiential involvement, relational engagement, and holistic child development. At the same time, there has been a resurgence of interest in other philosophical approaches that can enhance current teaching and learning that are grounded in different educational practices and less driven by the pressure to perform. The paper will explore the concept of peer-teaching and motor-based physical literacy in primary physical education from a Daoist philosophical perspective. The paper draws on concepts such as Dao, Wu Wei, Ziran, harmony and non-coercive development to examine conceptual connections between the Daoist philosophy and contemporary perspectives on the learning of embodied movement. The interpretation of peer-teaching as a relational and adaptive educational process suggests that it can be used to assist cooperation, movement exploration, embodied awareness and intrinsic engagement for children. The research is conceptual and interpretive, and is not an attempt to test the Daoist philosophy in an experiment. Rather, it provides a basis for interdisciplinary discussion of Daoist studies, embodiment theory, and physical education scholarship. The analysis indicates that the concept of Daoism can be used as a meaningful interpretative lens to understand embodied learning and physical literacy in the current context of primary physical education.

Keywords: Daoist philosophy; Physical literacy; Embodied learning; Peer-teaching; Primary physical education

1. Introduction

In modern education, standardized teaching, measurable achievement, and learning outcomes based on performance have become an important focus in educational activities, both in academic education and physical education. This focus has frequently led to pedagogical practices in primary physical education that are technical, externally controlled and overly structured. While these approaches can help children learn motor skills, too mechanical a style

of education has been suggested to limit opportunities for creativity, exploratory learning, and meaningful embodied engagement (Whitehead, 2010; Kirk, 2013). Educational settings that are geared mostly toward efficiency and performance outcomes in movement settings can diminish experiential and relational aspects of learning that foster holistic child development.

These have become more pertinent in the context of the physical inactivity, lack of confidence in movement, and decreased participation in physical activity among children which have been discussed more widely. This has led to recent physical education scholarship that has shifted emphasis from the physical to pedagogical strategies that consider the multiple aspects of movement learning, including physical, cognitive, emotional and social (Ennis, 2017). In this regard, the theory of embodiment and the theory of experiential learning have attracted more attention, suggesting that learning is not just a cognitive process, but also a process of experiencing the body, interacting with the environment and engaging in action (Shapiro, 2011).

Embodied learning perspectives propose that children learn and understand by engaging in senses, movement, relational interaction and lived experience. In the physical education context, movement is now recognized not just as performance of discrete motor skills but as a form of participation that has positive significance in relation to its broader developmental contexts. These views have inspired teachers to re-think the organisation of movement learning in schools, and the nature of educational practice and how it can facilitate confidence, adaptability, creativity and continued participation in movement. The concept of physical literacy has added to the significance of holistic movement education in childhood. In general, physical literacy is the acquisition of the motivation, confidence, physical competence, knowledge and understanding that empowers lifelong participation in physical activity (Whitehead, 2010). Most importantly, physical literacy is not just about the technical aspects of the skill; it is about how to be physically engaged, how to be physically aware, and how to have positive movement experiences. Recent policies increasingly acknowledge the importance of children's movement participation for emotional, social and lifelong engagement with movement, as well as motor development (Edwards et al., 2017).

Peer-teaching methods have become more popular in primary physical education within the context of these larger discussions. Peer-teaching is a collaborative learning process in which children are actively involved in movement teaching, observation, communication and problem-solving with their peers. These can help to foster more learner motivation. The participation, social interaction and movement exploration were compared with exclusively teacher-centered models (Casey & Goodyear, 2015). Children can gain confidence, co-operation and adaptive movement responses via peer interaction in less hierarchical learning contexts.

The relational and participative nature of the peer-teaching conceptually resembled some of the principles of Daoist philosophy. Classical Daoist philosophy, for example, through the concepts of Dao, Wu Wei, and Ziran, emphasizes harmony, adaptability, natural development and non-coercive engagement. Daoist philosophy, although a part of traditional Chinese thought, offers some interpretive context for the current debates on movement education and physical literacy, given its focus on embodied awareness and balanced participation.

Although there has been an increasing interest in the study of embodiment, physical literacy and learner-centred pedagogy, little research has focused on these educational perspectives from a Daoist philosophical perspective in primary physical education contexts. Thus, the purpose of this paper is to discuss peer-teaching and motor-based physical literacy in the context of Daoist philosophy, and how these ideas of harmony, embodiment and non-coercive development could enhance the current conceptualisation of movement learning and holistic child development.

2. Daoist Philosophical Foundations

Daoism provides a different approach to human development, learning, and participation in the world than highly mechanistic educational approaches, one that is relational and process oriented. Daoism has developed mostly through classical texts including the *Dao De Jing* and the *Zhuangzi*, which focus on harmony, adaptability, spontaneity and compliance with natural processes. The emphasis on contextual responsiveness, non-coercive action, and balanced engagement with the environment is encapsulated in central concepts such as *Dao*, *Wu Wei*, and *Ziran*. These principles are conceptually similar to the larger debates about experiential learning, physical literacy and learner-centred pedagogy in contemporary education. It is important to note that this Daoist philosophy is not offered as an empirically proven educational system, but as a philosophical paradigm that can provide interpretive understanding of embodied learning, movement involvement and whole child development in contemporary physical education settings (Ames & Hall, 2003).

2.1 Dao and the Principle of Dynamic Process

Dao is at the heart of Daoist philosophy. The term *Dao* is translated as “the Way” and is a dynamic process of the unfolding and transformation of existence. The *Dao* is not a doctrine or a system, but instead a call to harmony, contextual responsiveness, and a connection to natural processes. The *Dao De Jing* implies that too much control and too much intervention can cause imbalance and misunderstanding of relationships. Educationally, this idea has philosophical implications for the teaching and learning that is adaptive, experiential, and evolving, as opposed to mechanical. In the context of physical education, therefore, movement learning can be considered as a relational learning process that is influenced by interactions with others, environments and changing circumstances. These views are conceptually similar to the embodied learning approaches which focus on participation, adaptability and movement as lived experience, not as a technical performance (Laozi, trans.). Ames & Hall, 2003).

2.2 Wu Wei and Non-Forced Action

One of the key principles of Daoist teachings is *Wu Wei*, which is often interpreted as “non-forced action.” Passivity is not the meaning of *Wu Wei*, but rather, it is a type of action that occurs in a harmonious and natural way. The Daoist principle of effective action is achieved by responding to the context rather than dominating. In educational contexts, this idea is metaphorically similar to pedagogical practices that foster adaptive learning, exploratory participation, and engagement with the learning material rather than too much correction or authoritarian teaching. Highly prescriptive teaching in PE can limit creativity and self-regulation for children. Instead, from a Daoist point of view, the process of movement learning could be achieved by participation, observation, interaction and adaptation. Peer-teaching environments embody some of the characteristics of *Wu Wei* by encouraging collaborative and less hierarchical learning that is flexible, responsive, and based on shared movement experience (Slingerland, 2003).

2.3 Ziran and Natural Development

The Daoist notion of *Ziran* (naturally, spontaneously) is closely linked with *Wu Wei*. *Ziran* means development that occurs naturally, not over-controlled. In the educational context, this approach is conducive to learner autonomy, experiential discovery, and adaptive participation. In contrast to the idea of children as mere objects of teaching, Daoism focuses on action and spontaneous learning. These ideas are conceptually similar to current child centered pedagogies that promote creative, exploratory and flexible learning experiences. *Ziran* can be used in primary physical education to offer an interpretive understanding of a movement context that facilitates spontaneous participation and exploratory engagement with movement through cooperative games and peer-learning activities. Importantly, Daoist naturalness does

not negate the role of educational guidance, but rather proposes that meaningful development occurs when instruction is accompanied by autonomy and relational participation (Kohn, 2009).

2.4 Harmony and Relational Understanding

Harmony is a key concept in Daoism. The Daoist perspective is different from the one that equates harmony with rigid order or uniformity; it focuses on dynamic balance between interconnected relationships and processes. Humans are seen as relational beings in larger social, ecological, and experiential contexts, not as separate entities. This view is relevant for current conceptions of embodied learning and physical literacy, where learning about movement is often achieved through engagement in peer, teacher, and shared activity experiences. Peer-teaching methods can thus be understood as learning contexts that are based on collaboration, monitoring, and shared involvement. These perspectives align conceptually with physical literacy frameworks which focus on confidence, motivation, social interaction and life-long involvement in movement. In Daoist perspective, meaningful participation in movement is about harmonious and embodied engagement with others and the environment (Ames, 2011).

2.5 Embodied Action and Non-Coercive Development

The Daoist philosophy is one of experience in the body and of engagement with the world. Knowledge is not simply conceptual knowledge, but a product of embodied engagement and lived experience. This view gives philosophical support to current embodiment approaches to learning that consider learning to be intertwined with action and experience of the environment. In Primary physical education, embodied learning theories acknowledge that learning is achieved through the exploration of movement, engagement with the senses and relational participation. In a daoist sense, effective learning can be achieved through adaptive engagement, not too much external control. Non-coercive development is not against educational structure, but it is for guidance without domination or undue pressure. As a result, Daoist philosophy provides a comprehensive approach to the understanding of movement learning, physical literacy and embodied participation in the context of contemporary PE in primary schools (Csikszentmihalyi & Ivanhoe, 1999). The conceptual framework that was developed in the present study is shown in Figure 1, which connects Daoist philosophical principles with peer-teaching and physical literacy in primary physical education. The Daoist philosophy is one of experience in the body and of engagement with the world. Knowledge is not simply conceptual knowledge, but a product of embodied engagement and lived experience. This view gives philosophical support to current embodiment approaches to learning that consider learning to be intertwined with action and experience of the environment. In Primary physical education, embodied learning theories acknowledge that learning is achieved through the exploration of movement, engagement with the senses and relational participation. In a daoist sense, effective learning can be achieved through adaptive engagement, not too much external control. Non-coercive development is not against educational structure, but it is for guidance without domination or undue pressure. As a result, Daoist philosophy provides a comprehensive approach to the understanding of movement learning, physical literacy and embodied participation in the context of contemporary PE in primary schools (Csikszentmihalyi & Ivanhoe, 1999). The conceptual framework that was developed in the present study is shown in Figure 1, which connects Daoist philosophical principles with peer-teaching and physical literacy in primary physical education.

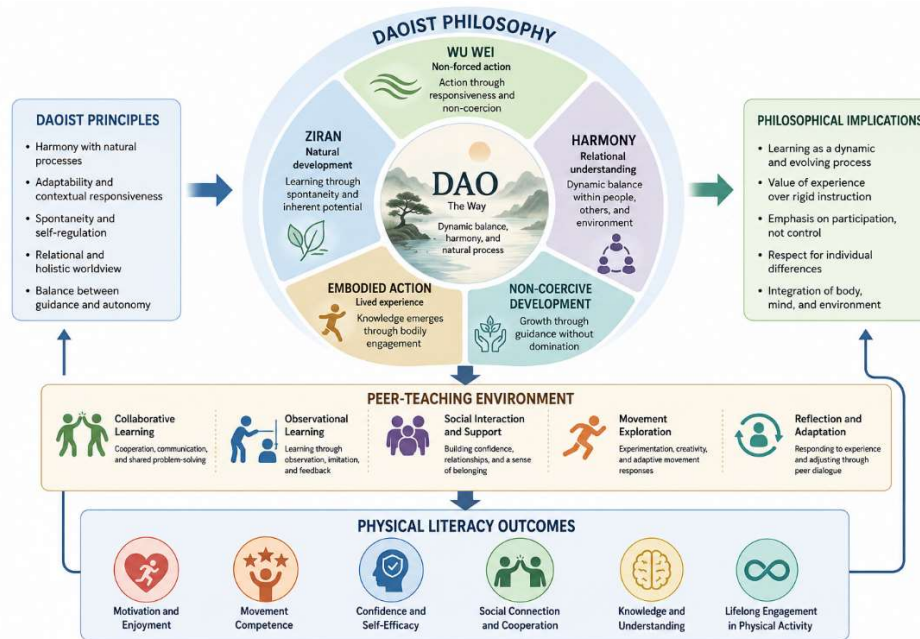


Figure 1. Conceptual Relationship Between Daoist Philosophy, Peer-Teaching, and Physical Literacy

3. Embodied Learning and Physical Literacy

In modern educational scholarship, embodiment theory has gained increasing traction and is a theory that focuses on learning as an embodied process, one that involves movement, perception, and interaction with the environment instead of mere abstract thought. Embodied learning approaches to physical education propose that children learn through movement exploration, sensory engagement, social interaction and lived experience within the context of physical education. This, in turn, has led to a shift in the perception of movement as a technical performance to a process that is meaningful and relational, and linked to broader child development.

In the field of movement pedagogy, the contemporary approach also moved away from the instructional models that were narrowly mechanistic and focused on more holistic approaches that involve the learner, flexibility and experience. While formal skill teaching is important, recent views have emphasized the need for opportunities for children to explore movement, react to variations in the situation, and be active in their interactions with peers and environments. These can enhance motor competence and self-confidence, communication, creativity and relational awareness.

With the advent of physical literacy, these larger education philosophies have gained strength. Physical literacy is usually defined as motivation, confidence, physical competence, knowledge and understanding that empowers lifelong involvement in physical activity. Most importantly, the concept is not only about learning how to learn a skill, but about participating in the skill, feeling it in the body and having positive experiences of moving in a variety of contexts. The current frameworks increasingly acknowledge that participation in movement is a component of emotional health, socialization and continued involvement in physical activity (Whitehead, 2010).

In this context, the Daoist philosophy might provide an interpretive understanding of current conceptions of embodiment and physical literacy. The concept of harmony, adaptability, natural development and non-coercive engagement of daoism are conceptually similar to education that emphasizes experiential learning and responsive participation. For instance, the

philosophy of Wu Wei can be associated with movement contexts which allow for flexible and non-forced participation, and the concept of Ziran can be related to pedagogies that focus on children's exploration and spontaneous engagement. Important, the present discussion is not a scientific endorsement of the theory of embodiment or physical literacy frameworks. Instead, Daoist thought provides a conceptual lens that can enhance interdisciplinary understandings of movement learning, embodied participation, and holistic child development in modern primary physical education settings.

4. Peer-Teaching in Primary Physical Education

Peer-teaching has gained significance in modern primary physical education because of the focus on collaboration, engagement and social interaction. Peer-teaching is a teaching method that asks children to share in the learning of movement in a way that is more active than when they are being taught by an adult. These can not only help children develop their motor abilities, but also their social and interpersonal learning, which are important in child development.

Peer-teaching environments include collaborative learning as an important element. Children learn to communicate, negotiate solutions to movement, and react to changing situations in a cooperative way, with partners, and with peers. These experiences can build confidence, relationship awareness, and active involvement, and can help to minimize over-reliance on teacher-led instruction. Social interaction is also important in the learning of movement, with children often learning through observing, imitating and interacting with peers (Casey & Goodyear, 2015).

Observational learning is another form of peer-teaching that is important. Children may gradually improve movement patterns, increase situational awareness, and gain confidence through relatable learning experiences by observing other children performing movement tasks and reacting to challenges. These types of environments can also promote movement exploration by providing opportunities for children to experiment, adapt and creatively interact with the physical challenges without just repeating technical corrections (Bandura, 1977).

These characteristics of pedagogy conceptually mirror some of the Daoist principles. The Daoist philosophy is one of non-authoritarian guidance, contextual responsiveness, and balanced participation, rather than too much control or too much intervention. The concept of Wu Wei can provide interpretive understanding of cooperative movement contexts for learning that are shaped by adaptive interaction and spontaneous participation. Likewise, Ziran conceptually mirrors those educational environments that promote exploratory interaction and natural participation in movement activities. It is important to note that these connections are not to be seen as empirical evidence for Daoist philosophy in physical education. Instead, Daoist thought offers a conceptual approach that could enhance the interpretation of the concepts of peer-learning, embodied participation, and collaborative movement education in primary school settings.

5. Daoist Interpretation of Peer-Teaching and Physical Literacy

The connection between peer-teaching and physical literacy can be understood more fully from a Daoist philosophical perspective on harmony, adaptability, participation in the body, and relationally. Although the concept of peer-learning is now frequently explored in a pedagogical or developmental context in physical education scholarship, Daoist philosophy offers a different way of interpreting how movement learning can be viewed as a more holistic process of balanced interaction between the individual, the body, others and the environment. This interpretation does not seek to impose Daoist principles on the current education practice, but provides conceptual understanding of how participation in movement and physical literacy

can be interpreted as a reflection of principles of natural development, contextual responsiveness and non-coercive engagement.

5.1 Cooperation and Relational Participation

Peer teaching in primary PE is characterised by cooperation. Children communicate, observe, adjust to each other and participate together through collaborative movement activities. In a Daoist view, co-operation can be regarded not just as a coordinated social behaviour but as a process of relation that is characterized by balance and responsiveness. The Daoist philosophy is one of the interconnectedness and harmonious interaction, not too much individualism or too much control. In peer-learning contexts children constantly adjust to their peers, movement tasks and varying circumstances, demonstrating relational participation in a manner that is in keeping with Daoist harmony. This interaction is not about uniformity or passive conformity, but flexibility, a sense of context, and engagement. These collaborative experiences can also help contribute to other aspects of physical literacy, such as confidence, social awareness, and a sense of purpose in movement participation.

5.2 Adaptability and Contextual Responsiveness

The dimension of adaptability is one that could offer Daoist philosophical interpretation for the issue of peer-teaching and physical literacy. The contemporary physical literacy literature has evolved a perspective that movement competence is not only technical but also a capacity to respond to dynamic situations. Children continually modify their behaviour in games and co-operative movement tasks in response to the environment and the social interaction. A similar idea of adapting to the world is also a key principle of Daoist philosophy. The idea of Wu Wei refers to a kind of action that comes in response, not one that is controlled or too intrusive. In the context of physical education, this view can be related to movement environments which allow for exploration, responsiveness, and active participation rather than exact replication of movement techniques. Peer-teaching techniques can help to foster adaptability by helping children to negotiate movement solutions together and be responsive to each other as they engage in activities. Observation, communication and experiential interaction help learners to gradually improve their understanding of movement, and to become flexible and contextually aware. In this view, movement learning is about more than just the technical aspects of learning, it is also about being able to adapt to the changing conditions of movement participation that aligns with other physical literacy constructs.

5.3 Embodied Awareness and Experiential Participation

Embodied awareness is at the heart of embodiment theory and Daoism. An approach to understanding that is not entirely cognitive but rather through bodily experience, sensory engagement, and active participation is embodied learning. Embodied learning is a contemporary perspective that suggests understanding comes not just from abstract thought, but from the body, from sensory engagement, and from active participation. In the same way, Daoist philosophy is based on the idea of experiencing things, being attentive to them, and being in harmony with the environment. In physical literacy settings, embodied awareness can be the ability to be sensitive to movement, rhythm, balance, coordination, and relational interaction while engaging in physical activity. Peer teaching settings can foster this awareness through observation, communication, and shared movement experiences. In a Daoist sense, meaningful movement participation occurs when the movement is responsive and adaptive, similar to contemporary theories that consider movement as an integrated component of holistic child development.

5.4 Movement Harmony and Holistic Engagement

Harmony is a fundamental part of Daoism and serves as an interpretive lens for movement participation and physical literacy. Daoist philosophy sees harmony as a dynamic balance of

related processes rather than as an absolute state of order or control. Children coordinate their actions with others in peer-teaching situations, respond to changing situations and cooperate in shared movement tasks. These experiences could help develop rhythm, balance, adaptability and relational awareness in physical activity participation. These attributes are conceptually similar to Daoist ideas of harmonious engagement based on responsiveness and balanced interaction. Modern approaches to physical literacy also focus on confidence, motivation, enjoyment, and social interaction in addition to physical competence. A Daoist view of meaningful movement participation is based on the concept of balance between the person, peers, movement tasks and the environment.

5.5 Intrinsic Engagement and Non-Coercive Learning

The intrinsic engagement is an important dimension that links Daoist philosophy to peer-teaching and physical literacy. High pressure and evaluative environments in education can decrease children's motivation and enjoyment of movement participation. Conversely, movement experiences that focus on exploration, collaboration, and active engagement could promote more intrinsic motivation to engage in physical activity. Conceptual relevance is provided through Daoist philosophy which focuses on non-coercive development and natural participation. The concepts of Wu Wei and Ziran imply that the essence of growth is in being responsive and supportive, not too controlling. In physical education, peer-teaching can foster confidence, curiosity, and fun by promoting collaborative learning and exploration of movement. Importantly, the Daoist point of view does not oppose educational structure or instructional guidance. Instead, they stress moderation in guidance, a lack of domination and pressure. The perspective here is that movement education can be seen as a relational and holistic process that facilitates embodied participation, adaptive engagement, and lifelong involvement in physical activity.

6. Implications for Contemporary Physical Education

The conceptual connections between Daoist philosophy, peer-teaching, embodied learning, and physical literacy may have a few implications for current physical education. In more performance-based educational systems, Daoist ideas could help to develop more holistic and student-centered approaches to movement education. The concepts of Wu Wei and Ziran are similar to pedagogical approaches that embrace flexibility, experimentation, and authentic engagement over stringent regulation or standardization. In PE lessons, sustainable movement engagement can be promoted through peer-teaching settings, cooperative learning, confidence, enjoyment, and relational engagement. This can help to minimise over-stimulation of performance and promote children's active engagement and movement competence through shared experiences. Modern conceptions of physical literacy also highlight the importance of lifelong engagement, embodied awareness, and all aspects of child development. Importantly, Daoist philosophy is not seen as a direct answer to today's educational problems. Instead, it provides a philosophical perspective that can enhance the interpretive understanding of movement learning, embodied participation, and learner-centred pedagogy in the current physical education setting.

7. Limitations

This study is not empirical, rather conceptual and interpretive. The discussion is derived from the philosophical analysis of Daoism, Embodiment Theory, Physical Literacy and peer-teaching in primary physical education; it is not presented in the form of a test of experimental evidence or quantitative evidence. The concepts of Wu Wei, Ziran, harmony and non-coercive learning are introduced as learning interpretations rather than scientifically proven learning models. Furthermore, Daoist philosophy has been understood in various historical and scholarly ways, and the current discussion is one of many. Empirical studies of the effect of peer-teaching and

learner-centred movement environments on children's embodiment of awareness, motivation, confidence and physical literacy development in contemporary physical education settings could be of benefit in future research.

8. Conclusion

This study explored peer-teaching and motor based physical literacy in primary physical education from a Daoist philosophical perspective. The discussion examined the concepts of Dao, Wu Wei, Ziran, harmony and non-coercive development and found conceptual links between these concepts and contemporary thinking on embodied learning, collaborative pedagogy and holistic movement education. The analysis indicated that peer-teaching environments might facilitate children's cooperation, adaptability, embodied awareness, and intrinsic engagement. It is important to note that the study does not seek to validate the Daoist educational principles in the context of PE practice empirically. Instead, it provides a conceptual point of view that can help facilitate interdisciplinary discourse between Daoist studies, embodiment theory, and movement education scholarship. In this context, Daoism's philosophy could provide a useful lens for understanding the connection between physical literacy and embodied learning in modern physical education settings.

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