



This is a peer-reviewed, post-print (final draft post-refereeing) version of the following published document, Accepted author manuscript version reprinted, by permission, from Journal of Teaching in Physical Education, 2018, 37 (3): 252-261, <http://dx.doi.org/10.1123/jtpe.2018-0139>. © Human Kinetics, Inc. and is licensed under All Rights Reserved license:

Whitehead, Margaret E, Durden-Myers, Elizabeth ORCID logo
ORCID: <https://orcid.org/0000-0001-7705-1138> and Pot, Niek (2018) The Value of Fostering Physical Literacy. Journal of Teaching in Physical Education, 37 (3). pp. 252-261. doi:10.1123/jtpe.2018-0139

Official URL: <https://journals.humankinetics.com/doi/10.1123/jtpe.2018-0139>

DOI: <http://dx.doi.org/10.1123/jtpe.2018-0139>

EPrint URI: <https://eprints.glos.ac.uk/id/eprint/6465>

Disclaimer

The University of Gloucestershire has obtained warranties from all depositors as to their title in the material deposited and as to their right to deposit such material.

The University of Gloucestershire makes no representation or warranties of commercial utility, title, or fitness for a particular purpose or any other warranty, express or implied in respect of any material deposited.

The University of Gloucestershire makes no representation that the use of the materials will not infringe any patent, copyright, trademark or other property or proprietary rights.

The University of Gloucestershire accepts no liability for any infringement of intellectual property rights in any material deposited but will remove such material from public view pending investigation in the event of an allegation of any such infringement.

PLEASE SCROLL DOWN FOR TEXT.

The Value of Fostering Physical Literacy

Margaret E. Whitehead

The University of Bedfordshire

Elizabeth J. Durden-Myers

Liverpool John Moores University

Niek Pot

Windesheim University of Applied Sciences

Whitehead is with the University of Bedfordshire, Luton, United Kingdom. Durden-Myers is with the Faculty of Education, Health and Community, Liverpool John Moores University, Liverpool, United Kingdom. Pot is with the Department of Human Movement and Education, Windesheim University of Applied Sciences, Zwolle, The Netherlands. Address author correspondence to Margaret E. Whitehead at m137whitehead@btinternet.com.

Abstract

This article considers the value of physical literacy. Unequivocal support for aspects of the concept can be found in philosophy, neuroscience, social justice, the nature of human development, psychology, and sociocultural studies. These areas of support will be outlined and then related to the practical value of physical literacy in the school context. This article will close with a discussion centered on claims that physical literacy is an end in itself rather than predominantly a means to other ends. It is the aim of this article to communicate the unique value of fostering physical literacy within the school context, including the support and relationship to other interrelated disciplines.

Keywords: contribution, education, physical education, practical value

As a 21st-century concept, physical literacy is increasingly being used within international policy directives to clarify and clearly articulate the importance of physical activity especially within education (Department for Education, 2013; Ontario Ministry of Education, 2015; Society of Health and Physical Educators America, 2016). The International Physical Literacy Association (2017) describes physical literacy as “the motivation, confidence, physical competence, knowledge, and understanding, to value and take responsibility for engagement in physical activities for life.” Despite the increasing mention of physical literacy in educational policy, there are growing concerns that “in order for the concept of physical literacy to succeed when other efforts to promote physical activity have largely failed, there must be substance to the claims made by its advocates” (Jurbala, 2015, p. 380). Prior to capturing evidence or empirical research in practice to provide substance, educational professionals must first be convinced of the value of fostering physical literacy

within their educational practice. This article aims to articulate the value of fostering physical literacy and to provide a rationale for its inclusion within educational practice.

The first section of this article explores why physical literacy is a valuable concept. It discusses the notion that for a very long time, physical activity has been viewed principally as a means to achieve broad educational goals with little value being attributed to this aspect of the curriculum. This section argues that physical literacy has educational validity in its own right. The second section of this article looks briefly at a number of disciplinary areas. Those considered are philosophy, neuroscience, social justice, human development, psychology, and sociocultural studies. Support from philosophy comes from proponents of monism, existentialism, and phenomenology. Neuroscientists reinforce the value of embodiment in arguing that all cognition is embodied, and embodied experiences are the foundation of language and reason. With respect to social justice, the work of Sen (2009) and Nussbaum (2011) endorses the importance of fostering capabilities. They put forward the view that it is a human right to enable each person to capitalize on all capabilities to realize human potential and lead a full life. The value of physical literacy is elaborated in respect of promoting human development by Goddard Blythe (2005) in her work with very young children. There is also evidence that physical activity can support cognitive development in adolescents (Donnelly et al., 2016). The view that physical literacy is of value in promoting self-efficacy and self-confidence is underwritten by psychologists, who also champion the important role of self-esteem in developing characteristics such as independence and creativity (Chen, 2015). In the sphere of sociocultural studies, it is suggested that physical literacy can help to change attitudes to the human-embodied dimension (Johnson, 1999; Lakeoff & Johnson, 1999). There are at least two inaccurate views of the body in much of the developed world: first, that it is an instrument to be trained, and second, that it—and it alone—represents the nature of the individual. Both are to be rejected. The human body is not purely a tool nor does it, on its own, define the individual (Lakeoff & Johnson, 1999). Human embodiment is an integral aspect of an individual. “In the context of physical literacy, the term embodiment is used specifically to describe the potential individuals have to interact with the environment via our embodied dimension. This covers both embodiment as lived as well as the embodiment as an instrument or object” (Whitehead, 2010, pp. 202–203). The final section of this article looks at the value of fostering physical literacy in practice and encompasses benefits of developing physical potential, adopting physical activity as a life habit, developing confidence, gaining knowledge, and establishing independence.

Physical Literacy as Valuable in its Own Right

One of the motivations in developing and studying physical literacy has been to identify the intrinsic value in fostering physical activity. As discussed in the article titled, *Physical Literacy From Philosophy to Practice* (Pot, Whitehead, & Durden-Myers, 2018), and also in the following sections of this article, there is ample support for the intrinsic value of capitalizing on our embodied dimension. It is disappointing that for many years in the Western world, physical activity has been seen only to have value as a means to other ends, significantly as a means to maintain a fully functioning body-as-machine and to sustain life, particularly in respect of enabling the mind to continue to function. Within education, work in the physical domain has, similarly, been ascribed a secondary status, being justified principally as useful

a vehicle to maintain bodily fitness and to provide respite of the mental faculties so that they can function more effectively. In addition, physical education has been identified as a subject area that can develop social skills, promote moral education, and foster characteristics such as loyalty and perseverance. This role as a “second-order” subject serving other areas of the curriculum sends out a clear message regarding the low respect in which our embodied dimension is held. As explained in the first article of this special issue, *Physical Literacy From Philosophy to Practice* (Pot et al., 2018), this attitude is a direct result of the presumption of dualism, in the context of which the embodied dimension has little intrinsic value.

Not only is this situation regrettable in respect of the way physical education is perceived in education, but it also carries risks in relation to the accountability of the work, the integrity of the subject area, and the maintenance of the subject area in the curriculum. These risks can be exemplified in relation to developing social skills. First, if a key role for physical education is to develop social skills, there is no way to prove that any growth in this particular characteristic of pupils has been achieved through participation in physical activity. As a consequence, the validity of this claim is dubious. Second, if the key role of the subject is centered around group work, it would follow that this focus should take priority in lessons over fostering physical competence. The integrity of the subject is thereby under threat. And finally, if other subjects also claim to foster social skills, then physical education loses its unique contribution to education and could well be excluded from the curriculum. On these grounds to rely on a place in the curriculum as a means to ends extrinsic to the subject area is clearly a serious risk and is not to be recommended.

However, the area of value in education is not straightforward. There are expectations of all teachers, and from a monist perspective, that all experiences will impact on the learner as a whole. Both of these issues will be considered briefly. First, teachers have a responsibility to contribute to education as a whole, this being achieved as learners are engaged in a particular area of the curriculum. Each subject area will make common contributions to education as well as a subject-specific contribution. For example, in teaching any subject, it is expected that every teacher will foster articulacy, independence, and creativity in pupils and will strive to promote good working relationships between learners. These contributions to education will be achieved both by examples set by the teacher and by the pedagogy used to promote learning. Second, it is the case that on account of the monist nature of the human condition, an experience in any area of the curriculum will permeate the whole person and affect learner characteristics that are evident across all facets of life. Development of empathetic group work in geography is likely to help learners to be better able to relate to others in, for example, drama. And fostering creative thinking in history is likely to help learners to discuss issues in literature. From a monist perspective, we cannot “pigeonhole” learning.

Notwithstanding these issues, each subject will hold its place in the curriculum as judged by the value of its unique contribution to education. In many respects, uniqueness will align with human capabilities discussed previously. Before the development of the concept of physical literacy, which can draw on philosophy to underwrite its unique contribution, little attempt had been made to articulate the distinctive role of physical activity in education.

One attempt was drawn up by Arnold (1979), who proposed a trilogy of values. These are education through movement, education about movement, and education in movement. However, there are problems in respect of each of these claims as discussed at length in Capel and Whitehead (2013). Education through movement reiterates the contribution that physical education can make to broad educational goals and therefore does not provide a unique goal. Education about movement is referred to by Arnold (1979, p. 168) as “knowledge of areas such as biomechanics, physiology, and kinesiology.” Although this is, on the face of it, acceptable, it seems to be a very minor consideration alongside the human development nurtured through meaningful participation in physical activity. From a physical literacy perspective, knowledge and understanding are fostered to enrich the experience of capitalizing on the human-embodied dimension. This awareness is valuable in itself is not disputed, but it barely comprises a reason for physical education to be retained in the curriculum. In Arnold’s terms, education in movement aligns best with nurturing physical literacy. However, despite much of the material of the book being focused on meaning in movement, when he addresses this issue in education, the focus moves to the exhilaration of participation at a high level. Little is written about meaningful experiences for all, experiences that will promote lifelong participation in physical activity. The result of Arnold’s potentially useful work is that his more readily grasped assertions in the later chapters have been championed as the solution to the problem of finding a unique role for physical education. The more complex philosophical debate in the previously sections of the book have not been studied and built on. Hence, Arnold’s work has not created a sound foundation from which to argue for the unique contribution of physical education in the school curriculum.

The solution to identifying the unique contribution of physical activity and physical education in education can be found in the philosophical principles that underpin physical literacy. Significant here are the monist nature of the human condition, the appreciation that we create ourselves in interaction with the world, and the understanding that perception is inherently embodied. From this perspective, physical education can enable every participant to realize a significant aspect of being human. It is proposed therefore that fostering physical literacy is not only valuable but also essential in education.

Support From Established Disciplinary Areas

Philosophy

Physical literacy can be judged to have value in the context of the philosophical positions of monism, existentialism, and phenomenology. The concept of physical literacy was built from the study of philosophies that make a strong case for the value of capitalizing on human embodiment from an ontological standpoint. Monism, existentialism, and phenomenology, in their different but interrelated ways, set out the essential contribution that the human-embodied dimension makes to human life. The three philosophical stances are both particular and closely related.

Monism describes human nature as an autopoiesic form of life, that is, a life involving multiple dimensions in constant collaborations. Monism is in opposition to dualism that describes the individual as being comprised of two separate parts: the mind and the body.

Dualism was championed by Descartes (1641/1984), who asserted that “I think therefore I am” (p. 54). In this description, Descartes assigned the human-embodied dimension to a low position, as inferior to the mind and of little, if any, value. This perception of the nature of human existence seriously devalues human embodiment. However, other philosophers have refuted this dualistic position. For example, Sartre (1957) wrote “For human reality to be is to act” (p. 476) and Burkitt (1999) expresses the view that “prior to the Cartesian ‘I think’ there is an ‘I can’” (p. 74). These views are now supported by many other philosophers and thinkers and, indeed, most neuroscientists. This throws new light on the role of the human-embodied dimension. This aspect of humanness is now respected as a significant aspect of human life as we know it. Current beliefs now challenge the inferior status of the embodiment, and this provides the ground for advocating the value of physicality and physical literacy.

This monist view is supported by existentialists, who argue that existence precedes essence. They assert that humans create themselves as they interact with the world. In other words, individuals are the product of the accumulated interactions in which they have been involved. Merleau-Ponty (1968) expressed this well in writing, “We are through and through compounded of relationships with the world” (p. xiii). All those aspects of our human nature that have the potential to effect interactions with the world are of significance, as they play a part in making individuals who they are. The embodied dimension is one such aspect. This view is endorsed by Burkitt (1999), who explains that “::: there is a primordial coexistence between the body and the world” (p. 74). In this context, human embodiment can legitimately be seen as of value, again underwriting the indispensable nature of physical activity and physical literacy.

Phenomenologists build from existentialism in describing the way in which the embodiment affects interaction. For this two-way interaction process to be effective, both perception and action need to be involved. Human embodiment encompasses both these aspects of interaction. In support of this view, Leder (1990) writes that “Perception is itself a motor activity. Moreover, that which is perceived is always saturated by the implicit presence of motility” (p. 17). The implicit nature of embodied interaction, much of which operates at a preconscious level, tends to mask the significant role played in interaction by the human-embodied dimension. Gill (2000) refers to the work of Polanyi, who is of the view that “because tacit knowledge is the anchor or tether for explicit knowing, it necessarily follows that we always know more than we can tell” (p. 54). Also, significant in the writings of phenomenologists is the notion that all perception is founded on previous experience and as individuals have different experiences, perception will be particular to the individual. If this is considered alongside Leder’s (1990) view that all perception is effected from an embodied stance, it becomes clear that an individual’s attitude toward his or her physicality will color all perception. Physical literacy, in its ambition to develop motivation and confidence in relation to physical potential, gains importance in the influence that this aspect of human existence has on much of perception.

Many philosophers, thinkers, and neuroscientists, far from dismissing the embodied dimension as of no significance, now appreciate the indispensable role that this dimension plays in human life. As humans, we are essentially embodied. We are who we are because we are embodied, and this further underwrites the value of physicality and physical literacy.

Neuroscience

Physical literacy can be judged to have value as contributing significantly to holistic human development. Since the start of the 21st century, there has been a growing commitment to monism and a belief in the dependence of intellectual development on human embodiment. It is claimed that practically all neuroscientists now refute dualism. In fact, monism has been championed by many cognitive scientists. For example, Shapiro (2011) refers to embodied cognition which denotes the role that the embodiment plays in human relationships with the world, Maiese (2016) writes about the essentially embodied self, and Gibbs (2006) also argues that the traditional disembodied view of the mind is mistaken because human cognition is fundamentally shaped by embodied experiences.

This reliance on the human-embodied dimension is explained and exemplified by Lakoff and Johnson (1999) with reference to intellectual development. Central to their work is the belief that embodied engagement with the world is the source of the formulation of concepts that are the foundation of language, cognition, and reasoning. It is through embodied interaction with the world that we experience particular qualities, and, as a result, formulate concepts. For example, experiences related to weight generate concepts such as “pushing” and “pulling,” those related to space generate notions such as “in,” “on,” “under,” “across,” “toward,” and those related to time give rise to concepts such as “start,” “stop,” “resume,” “continue,” and “finish.” These notions then become the foundation of cognition and thinking. Simply put the notion of “pushing” generates mental concepts such as persuasion, “under” generates concepts such as relative seniority, and “stop” generates an understanding of ideas such as postponement and cancellation. They go farther in writing that “the very structure of reason itself comes from the details of our embodiment” (Lakoff & Johnson, 1999, p. 4). These views underwrite the value of the embodied dimension and refute the dismissal of physical aspects of humans as inferior and insignificant. Herein lies a root of the significance of fostering embodied potential in working to promote physical literacy.

Social Justice

Physical literacy can be judged to have value as a human capability, the development of which can be viewed as a human right. A social justice perspective can be seen to align with the notion of interaction. Nussbaum (2000, 2011) and Sen (2009) identify avenues of interaction described as “beings and doings.” In fact, Nussbaum refers to these as capabilities, while Sen prefers to talk about functionings. They argue that every individual first should have the right to realize these human potentials; second, should have the opportunity to exercise these; and finally, should have the freedom to capitalize on these aspects of human nature if they should so wish. Nussbaum (2000) asserts that “capabilities as I conceive them have a very close relationship to human rights” (p. 97).

Sen (2009) and Nussbaum (2000, 2011) put forward very similar cases and challenge all governments to facilitate the development of capabilities or functionings, seeing them as human rights. Nussbaum sets out a range of capabilities, inter alia: language, each of the arts, number, scientific aspects of the world, interacting with other people, and historical

understanding. She includes the embodied dimension within very many of her capabilities; however, she presents her thoughts from a dualist perspective and casts the embodiment, in most cases, as facilitating the realization of other capabilities. It is argued that as a key medium to interact with the world, the human-embodied dimension as both the lived-body and the living-body, and as endowed with perceptuomotor abilities, has a strong case to be acknowledged as a capability in its own right. The embodied dimension affords us a unique, fundamental, and highly significant mode of interacting with the world, and in line with other capabilities, every human has the right to draw on this potential. As capabilities are drawn on throughout life and enable the individual to blossom and thrive, it would seem to follow that they should be fostered in schooling. This provides support for advocating the educational value of physical literacy and creates a platform to argue for the value of promoting physical activity throughout life.

Human Development

Physical literacy can be judged to have value in respect to the pattern of early human development: physical and cognitive. Reliance on a wealth of physical activity at an early age is spelled out very clearly by Goddard Blythe (2005). She identifies both the critical effect of movement on the developing brain and on the establishment of effective movement patterns. With respect to brain development, she refers to research which suggests that movement stimulates myelination and synapse creation in the nervous system. Goddard Blythe goes on to argue that the early years of life are critical to the optimum development of the nervous system, and in some cases, lack of development at this time cannot be remediated later in a person's life. The early years are movement hungry years, and this insatiable interaction with the world not only develops connections in the brain but also feeds the cognitive domain with the beginnings of concept development, language, and thinking. Carson et al. (2016) did not find substantive research between the relationship of physical activity and cognitive development in the early years; however, they report a positive correlation in the majority of studies. This view underwrites the value of physical activity at an early age, both in respect of frequent participation and experience in a wide variety of settings. Quantity and quality of movement are both important. There is also a growing awareness of the primacy of movement. In one sense, movement is a child's first language. Almond and Myers (2017) refer to the primacy of movement as an essential tool for humans to make sense of and interact with the world. Movement here is an essential prerequisite for human development. And this is not the end of the story as Johnson (1999) reminds us that "as we grow up we do not somehow magically cast off these modes of meaning making, rather these bodily based meaning structures underlie our conceptualization and reasoning, including our most abstract modes of thought" (p. 36). Physical activity as advocated by proponents of physical literacy (Whitehead, 2010) is not an added extra to the experiences of life but is an essential ingredient in the realization of human potential.

Although it has been suggested that cognitive development is dependent on movement, it should not be forgotten that movement in itself is critical in the development in the early years in respect of establishing movement patterns that will be drawn on throughout life. These patterns provide access to a wide range of physical activities and have the potential to contribute to a full and rewarding life. In her extensive research, Goodard Blythe (2005)

sets out how movement opportunities in early childhood are critical to enable the neonate to begin to establish movement patterns. She identifies a range of what she describes as primitive reflexes, for example, the symmetric tonic neck reflex, Babinski reflex, Moro reflex, palmar reflex, plantar reflex, spinal gallant reflex, and rooting and sucking reflex. She explains that most of these reflexes are inbuilt and designed to assist the process of birth and survival in the first few months of life. However, she also argues that if these primitive reflexes are retained after reliance on them has ceased, they can obstruct and unbalance physical development particularly the establishment of postural reflexes. Symptoms of these primitive reflexes that have not been overridden can cause problems as the child grows. For example, if the symmetric tonic neck reflex is retained, the outcome is “poor upper- and lower-body integration” and “poor hand–eye coordination” (p. 51). This reliance on movement to initiate and stimulate the growth and development of an individual needs to be recognized widely. Without a sound foundation in the early years, it is unlikely that an individual will accrue the range of movement patterns needed to take part in a wide variety of physical activity contexts. There is growing evidence that confident participation at an early age correlates positively with involvement in physical activity at later stages in life. It is widely recognized that childhood engagement in physical activity is a strong indicator of adulthood engagement in physical activity (Jones, Hinkley, Okely, & Salmon, 2013). Goddard Blythe (2005) reinforces this in asserting that embodied experience is the “very expression of life” (p. 3). The human is a moving interacting being, and all life is lived from this perspective. With respect to adolescents, Lubans et al. (2016) have drawn together research on the relationship between physical activity and cognitive and mental health. Although they acknowledge that there are no studies that identify significant positive effects on cognition as a result of physical activity, there are a good number of indications of a positive beneficial relationship. Chaddock-Heyman et al. (2013) identify some improvement in reaction time, while Davis et al. (2011) record some advance in the ability to plan and to remember. Diamond (2015) found that participation in activities such as martial arts and games had a greater effect on executive cognitive function than participation in purely fitness exercises. This view further underwrites the value of working to establish physical literacy at an early age.

Psychology

Physical literacy can be judged to have value on account that it can provide unique opportunities and rewarding experiences that promote self-esteem. Self-esteem comprises self-confidence and self-respect. Together, these can generate the meaning of self-esteem as the disposition to experience oneself as competent to cope with basic challenges of life and as worthy of happiness (Branden, 1994). Self-confidence is usually understood as describing the development of competence. This involves progressive improvement in both understanding and, where appropriate, performance. Progressive improvement rests on learning and issues in confidence within one or more fields of activity. Self-respect is particularly related to the acceptance shown by others and is generated in situations in which individuals’ commitment and progress in a specific field are endorsed as valuable. The positive impact of these experiences is increased in situations in which the focus is on the individual, rather than in comparison with others or the attainment of a norm or standard. These issues serve to remind proponents of lifelong participation in physical activity in that, where a person-centered, holistic approach that recognizes real worth of embodied

engagement with the world is used; it is likely that physical literacy will make a valuable contribution to self-esteem. However, if a dualist perspective is taken, with the resultant perception of a secondary value of the embodied dimension, there will be less recognition of the worth of physical literacy and less opportunity to build self-esteem.

It is suggested that self-esteem is a fundamental human need, and this need can be considered as both life supporting and life enhancing (Branden, 1994). However, self-esteem is not a discrete characteristic, but it correlates with other human characteristics such as independence, creativity, the ability to manage change, and benevolence. With respect to independence, both Liu, Wu, and Ming (2015) and Singelis, Bond, Sharkey, and Sui Yui Lai (1999) reported a correlation between self-esteem and feelings of self-worth and self-confidence. Wang and Wang (2016) researched the relationship between creativity and self-esteem and identified that independent self-construal is related to creativity, whereas Murray et al. (2009) found that individuals with low self-esteem are more likely to conform to social norms rather than to make decisions themselves. Branden's (1994) definition of self-esteem refers to "coping" (p. 27). This might be seen as a broad basic description, and it would seem legitimate to expand on this, in that, first, individuals who achieve the ability to cope in a range of human capabilities are likely to have a more secure and positive self-esteem than those who can cope in a smaller range of areas. And second, individuals who demonstrate high levels of coping in one or more areas are likely to have enhanced self-esteem. Where physical literacy is seen as a human capability, capitalizing on the potential of the embodied dimension, it could be viewed as a legitimate area of coping, giving breadth as well as opportunity to develop competence. This would support the potential of physical literacy to add to the fostering of self-esteem and thus be of value to individuals. This position builds from the views of existentialists and the notion of capabilities both of which are referred to above. Wheatley (n.d.) discusses managing change in a community context and has found that where individuals have confidence in their own abilities there is a better chance that they will be resilient enough to adapt to changes and new challenges. Kwan, Kuang, and Hui (2009) linked self-esteem to benevolence. Realistic self-awareness is seen to help an individual to understand and show compassion to others. Self-esteem is also associated with persistence, determination, and the belief that success is possible (Sandelands, Brockner, & Glynn, 1988).

In the current International Physical Literacy Association definition, it is suggested that lifelong participation can be enhanced by fostering motivation and confidence and physical competence in respect of participation in physical activity (International Physical Literacy Association, 2017). This view is endorsed by a range of current psychological theories, including self-determination theory, self-efficacy theory, and achievement goal theory (AGT). For example, self-determination theory identifies the importance of intrinsic motivation in relation to developing autonomy and appreciating the value of the learning experience (Deci & Ryan, 1985; Xiang, Agbuga, Liu, & McBride, 2017). Both Sun, Li, and Shen (2017) and Van den Berghe, Vansteenkiste, Cardon, Kirk, and Haerens (2014) have carried out systematic reviews of recent research into self-determination theory and physical education. Many of these studies highlight the key role that the teacher plays in learner motivation. Significant here are the need to minimize controlling teacher language and the importance of providing a rationale for the tasks set. Research by Ntoumanis (2012)

recommends developing an autonomy-supportive motivational climate to foster self-determination in learners.

Self-efficacy theory focuses on the development of optimistic self-belief or confidence. Research related to this theory shows that developing confidence in personal competence can produce positive outcomes (Bandura, 1997). In her research, Chase (1998) found that in respect of developing self-efficacy in physical education and sport, all learners rated praise and encouragement as the most important. Younger pupils also welcomed active participation, and older pupils identified practicing hard to improve as significant. McAuley, Szabo, Gothe, and Olson (2011) proposed that development of self-efficacy was positively influenced by mastery experiences and social modeling and that development of self-efficacy can affect both application to the task at hand and commitment to developing an exercise regime.

Among other supporting theories, AGT (Ames, 1992; Nicholls, 1984) has been well recognized in understanding and fostering the development of physical literacy. AGT has been a prominent theory to explain people's motivation in achievement settings, including physical education (Liu, Xiang, & Lee, 2017). AGT describes that goals can represent the purposes, reasons, and/or aims, whereby individuals engage in activities. Different goals and their combinations (i.e., goal profiles) have differential effects on students' cognitive, affective, and behavioral outcomes (Liu et al., 2017).

Nicholls' (1984) originally suggested that there are two styles of achievement motivation, these being first, task orientation, where success is viewed in terms of task mastery and self-improvement; and second, in opposition, described as ego orientation, where success is viewed in comparison with others (Nicholls, 1989). Studies have shown that a task-orientated goal perspective is more closely linked to enjoyment and intrinsic motivation, and thus may promote sustained engagement in physical activity (Duda & Nicholls, 1992; Fox, Goudas, Biddle, Duda, & Armstrong, 1994). AGT surveys the importance of attributing progress to personal mastery of tasks set. This attribution both promotes learning and provides a meaningful personal framework in relation to understanding and valuing learning experiences (Nicholls, 1989). Since Nicholls' (1984) introduction of task and ego orientations, the theory itself has been developed identifying four distinct theoretical models including: a dichotomous model (Ames, 1992; Ames & Archer, 1988; Dweck, 1986; Dweck & Leggett, 1988; Nicholls, 1984, 1989), a trichotomous model (Elliot & Church, 1997; Elliot & Harackiewicz, 1994), a 2×2 model (Elliot & McGregor, 2001; Elliot & Thrash, 2001), and a 3×2 model (Elliot, Murayama, & Pekrun, 2011).

One common feature among the four models is the nature and categorization of achievement goals in relation to how competence is evaluated/referenced. Understanding how achievement goals are evaluated from the learners' perspective is essential: first, in promoting orientations that are more associated with persistence and lifelong participation (task mastery); second, in recognizing and understanding avoidance behaviors, and finally, in identifying ego orientations and developing an appreciation for the fragility of this type of motivational source in relation to long-term participation in physical activity. Therefore, AGT is important in understanding students' achievement motivation and behavior in physical education settings. Looking into the effect of different goals on student learning may inform

and help physical educators better design school physical education programs and increase their instructional effectiveness (Liu et al., 2017). Elliot and Church (1997) also discuss the importance of teachers being alert to the learners' approach and their potential avoidance strategies. Dorobantu and Biddle (1997) also highlight the importance of creating a positive motivational climate to discourage avoidance behaviors and encourage task mastery orientations.

Developing physical literacy in students requires physical educators to connect theory and practice and understand how motivation can be nurtured and sustained. Liu et al. (2017) describe that the effectiveness of AGT, when used in practice, relies on how well the goals are presented to students in physical education classes. Liu et al. (2017) reviewed a number of AGT studies and concluded that mastery-oriented goals (i.e., task goals, mastery goals, and mastery-approach goals) are conducive to student motivation and positive educational/learning outcomes, whereas avoidance goals (i.e., mastery-avoidance goals, performance-avoidance goals) often lead to negative results. However, performance-oriented goals (i.e., ego goals, performance-approach goals, performance-avoidance goals) can sometimes bring about positive effects on student learning outcomes, but they can be detrimental in the long run. Therefore, Liu et al. (2017) recommend that physical educators need to focus on promoting mastery-oriented goal adoption and minimize the influence of avoidance goals among students within physical education lessons. To promote mastery-orientated goal adoption, Liu et al. (2017) recommend that physical educators consider incorporating the following strategies within their practice.

- a. "Provide developmentally appropriate activities so that students feel competent in doing them and gain a sense of success, which can lead to further development of their movement competencies.
- b. Make activities fun and interesting so that students enjoy taking part in them.
- c. Set challenging yet attainable goals to elicit students' best effort.
- d. Invite students to make some of their own decisions about what to do and how to do it, so that they feel empowered and willing to take responsibility for their own learning.
- e. Focus students on the learning process and effort instead of product and ability.
- f. Provide encouragement specific to student effort and improvement.
- g. Evaluate students based on their effort and self-improvement instead of comparing them to others" (p. 298).

In addition to the instructional strategies mentioned above, physical educators can also design or reform their programs based on TARGET principles (Ames, 1992; Epstein, 1988, 1989). TARGET is an acronym for describing the characteristics of a learning environment that facilitates mastery-orientated goal adoptions. The acronym is expanded below:

- a. *Task*. The tasks set should be challenging, diverse (Biddle, 2001), and focus on the learning and task involvement. Physical educators should avoid emphasis on social comparison and competition and instead focus on learning the new skill. This could be achieved by setting goals, where the emphasis is on the process as opposed to the outcome.

- b. *Authority*. Activities should be centered on student involvement and choice (Biddle, 2001). Students should be encouraged to contribute toward the decision-making processes within the lesson.
- c. *Recognition*. Students should be recognized and rewarded for individual improvements and progression (Biddle, 2001) as opposed to social comparison or solely on performance.
- d. *Grouping*. Physical educators should manage the class to promote cooperative groups and facilitate peer learning opportunities (Biddle, 2001). Physical educators should provide opportunities for pupils to work together to solve problems rather than competing against one another.
- e. *Evaluation*. Throughout the lesson, the evaluation of tasks should be made in relation to the mastery of the task and individual development (Biddle, 2001).
- f. *Timing*. The amount of time set for a task to be completed should be adapted to suit individual capabilities (Biddle, 2001).

Interventions based on the TARGET approach have facilitated students' task goal orientations (Liu et al., 2017). Implementation of TARGET in and out of school has generated positive cognitive, affective, and behavioral outcomes (Braithwaite, Spray, & Warburton, 2011; Cecchini, Fernandez-Rio, & Mendez-Gimenez, 2014). Physical educators also need to take into account the influence of social agents such as parents, peers, and teachers, to make a more comprehensive positive impact on students (Liu et al., 2017).

Sociocultural

Physical literacy can be judged to have value in the context of freeing the individual from cultural expectations related to the embodiment that may threaten self-respect and self-esteem. The value of physical literacy with its focus on participation in physical activities of an individual's choice, throughout the life course, can be argued to be a significant and important antidote to the way human embodiment tends to be viewed in contemporary cultures. The work of Shilling (2006, 2008) is revealing and helpful here. Overviewing the work of Goffman (1959), Bourdieu (1984), Elias (1982), and Foucault (1974), among others, Shilling discusses the potentially damaging consequences of identifying the embodied dimension as a social symbol of a person's value. He also identifies sport as tending to exacerbate this situation. In addition, he laments the loss of respect for human corporeality and the disregard of the way that this dimension lies at the heart of interaction with the world and is the seat of individuality. It can be argued that physical literacy has the potential to be of value in changing perceptions to and deobjectifying the embodied dimension.

Modern society would seem to demand a particular bodily form for individuals to be valued and fully accepted in a community (van Amsterdam, 2013). The human body has been all but hijacked to conform with these expectations of an ideal model. Mesomorph males and slender females are to be valued most highly. This applies both to the judgment of others and also affects the perception of self or self-image, on the part of the individual. As these models can be difficult for many to emulate, individuals who view themselves predominantly as an object and judge that they fall well short of the ideal required, can readily lose self-respect and self-confidence. This loss of self-esteem permeates the whole person as people feel that they are nothing other than their supposed flaws or far from

perfect embodiment. Perrin-Wallqvist and Carlsson (2011) carried out useful research in Sweden, which linked self-image very closely with self-esteem and identified key aspects of teaching physical education that influenced self-image. These included the need to feel secure in lessons insofar as expectations were clearly identified, the importance of support shown by peers, and the respect shown to each learner by the teacher.

There is clearly something of a conundrum here; dualists devalue human physicality, while societal attitudes highlight the importance of the outward physical appearance of a person. To clarify the situation, a different perspective needs to be taken concerning human embodiment. First, human embodiment needs to be appreciated as an integral aspect of our being, an aspect that in many ways has given Homo sapiens unique characteristics. This does not rely on a particular bodily form. Our embodiment is a perceptuoactional phenomenon that affords interaction with the world. It has to be recognized that the more adaptable this human-embodied potential to interact with the world, the richer life will be. Second, it would seem to be unacceptable and inaccurate to judge a person solely on one aspect of being. A person has very many facets such as interpersonal skills, artistic flair, cognitive acuity, creative powers, and technical know-how. To judge persons on any one of the above fails to acknowledge the totality of the thinking, moving, caring, creative beings we are. Bodily form or outward appearance provides a very superficial and inadequate measure of a person's acceptability and value. This all too readily made judgment of others' needs to be confronted and eradicated.

Sport has not been helpful in freeing attitudes to the embodiment, particularly in respect of defining masculinity and femininity in terms of types of embodiment. Within high-level, media visible sport, two messages are very clear: first, there is a dualistic perception that the embodiment is a machine to be trained, tamed, and sculpted to realize very demanding physical feats, and second, that certain sports are the domain of men and other physical activities best align with women. Reinforcement of dualism and stereotyping men and women within sport has done nothing to ameliorate the perception of the body as physical capital (Shilling, 2006) nor challenge the "rules and expectations" (p. 112) of how female embodiment can be viewed. Women who take part in male sports are often criticized for lack of femininity. Fostering physical literacy is significant here as it can counteract preconceptions and motivate women, and indeed men, to take part in all types of physical activity.

Areas of Value Related to Participants in School

The above claims for the value of physical literacy are drawn from scholarly writing from a variety of disciplines and show that proponents of the concept are not alone in advocating the significant value of this aspect of human nature. Many of these views translate readily into practical values "on the ground," which relate to work in school. Below are the key areas of value identified for participants in promoting physical literacy that can be realized in physical education. It is argued that educators aiming to promote physical literacy within their practice should aim to develop the following aspects.

- a. *Develop embodied potential and experience the satisfaction of progress and success in physical activity across a range of physical activity contexts.* As a unique way to

interact with the world as referred to in existential thinking (Pot et al., 2018), this curriculum area offers a unique mode of learning and self-realization, which may offer some participants opportunities to experience the success and recognition that they have found hard to achieve in other areas. To receive recognition of progress and achievement in respect of the physical domain, by practitioners and peers alike, can be of great significance in situations in which an individual feels inadequate regarding their physical endowment in comparison with others. Progress in physical literacy can underline the intrinsic value of each individual in respect of the physical domain and help to move the focus off “the body as an object” that needs to match an ideal model and onto viewing embodiment as a valuable aspect of self. This has been alluded to in the sociocultural appraisal above and is particularly pertinent in secondary schools. In today’s challenging environment that endlessly presents people with models to emulate and makes criticism and self-criticism all too easy, this growth in personal self-respect and self-belief is both significant and valuable.

- b. *Come to realize that being active can be rewarding and pleasurable and thus lay the ground for a commitment to an active lifestyle.* Meaningful experiences that resonate with an individual, enable ready participation, and offer success can develop a real appreciation of the value of physical activity from a personal perspective. These positive experiences, which promote intrinsic motivation, need to be nurtured to lay the ground for sustained engagement in physical activity for life. Almond and Myers (2017) refer to this as “learning-to-love” physical activity. It was proposed above that from the perspective of social justice, every individual has a right to explore embodied potential as an avenue of realization of self. The outcome of meaningful experiences in this aspect of being human is the motivation to seek out further involvement, which is beneficial both within schooling and beyond. As will be argued in the article titled, *Physical Literacy and Human Flourishing* (Durdén-Myers, Whitehead, & Pot, 2018), raising awareness of different types of physical activity is of paramount importance in helping participants understand that activities can be, inter alia, carried out in groups or as an individual, involve indoor or outdoor contexts, be cooperative or competitive, and demand strict rule adherence or imagination. Opening doors to opportunities for physical activity has value in the short term and the long term.
- c. *Develop the confidence to explore participation in a wide range of physical activities.* These can be more or less familiar, carried out in predictable or unpredictable contexts, and can demand a range of different types of collaboration with others. As a result of this participation, individuals are challenged and discover new ways to interact with environmental and other people. The corollary of this is that individuals develop problem-solving skills, creative and imaginative abilities, and interpersonal skills. In some cases, it demands honest self-evaluation and personal goal setting. These experiences enable participants to grow in self-awareness and self-assurance as identified in the psychological theories referred to above. The contribution that involvement in physical activity can make to the areas of personal growth outlined here is of considerable value to the developing young person.
- d. *Gain knowledge and understanding of the nature and constituents of movement and the structure and procedures of different activities, particularly those relevant to the culture in which an individual is living.* This appreciation will help to raise awareness of why and how movement can be developed and improved. As a result, participants

can develop a knowledge base against which to evaluate their performance and set personal goals. In relation to physical activities, participants will learn to appreciate the importance of rules and regulations, the significance of key safety factors, and the principles of fair and respectful conduct. The progressive attainment of this informed reflection presents challenges but offers new avenues of personal development and success. This can make a profound impact on participants' attitudes to physical activity and provide a sound platform for further involvement in physical activity.

- e. *Gain knowledge and understanding of the principles of holistic health and therefore develop an informed position concerning the value of physical activity in enhancing all-round health and well-being.* Maintaining holistic health can be seen to have a number of facets. These include respecting the embodied nature of the human condition, monitoring physical and mental well-being, establishing a balanced life comprised of a variety of interests and activities, and finding a balance between new challenges and established habits. Working from an informed position regarding opportunities in the movement field can be of great value in evaluating personal well-being and making life choices.
- f. *Realize the importance of taking responsibility for personal well-being. This will involve considered deliberation and a determination to enact a personal commitment.* It will also involve the confidence to withstand the views of others who lack interest in getting involved in physical activity and the articulacy to advocate the value of participation. Encouraging others and setting an example to others may demand considerable personal strength of character. These personal assets are valuable for participants as they move beyond schooling and have make decisions for themselves.

It needs to be explained that although all of these benefits can be realized in participation in physical education, none will be achieved unless the appropriate context is created. This context will be elaborated in other articles within the special issue concerning pedagogy, material covered, and the nature of gathering information concerning each participant in respect of progress on a physical literacy journey.

Conclusions

This article highlights wide ranging support regarding the value of physical literacy. There is significant potential in building on this support in respect of collaborative research, production of advocacy material, and identification of goals in the participant/practitioner interface. For example, research projects could be carried out between proponents of physical literacy and those working in areas of psychology such as the development of self-esteem and aspects of self-determination theory. Research would be valuable into attitudes to the body and the role that physical literacy can play in counteracting problems of negative self-image. Those involved in advocacy need to look widely at the many strands of support and, using accessible language, create materials apposite to different constituencies. These constituencies might include parents, leisure managers, and politicians. Work in planning and leading physical activity could benefit from a reflective stance on the part of the practitioners to ensure that the maximum benefit is being realized in their work. For example, thoughtful self-evaluation relating to how far sessions have

promoted self-esteem, understanding, and confident decision making would ensure that the potential values of fostering physical literacy have been achieved. There is no shortage of support for physical literacy and proponents must now draw on the wealth of value identified to argue that the goal of fostering physical literacy, as empowering individuals to choose physical activity for life, is unique to the subject area and, without doubt, enhances quality of life.

References

- Almond, L., & Myers, E. (2017). Meaningful movement and the primacy of movement. *Physical Education Matters*, 12, 19–21.
- Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, 84, 261–271. doi:10.1037/0022-0663.84.3.261
- Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology*, 80, 260–267. doi:10.1037/0022-0663.80.3.260
- Arnold, P.J. (1979). *Meaning in movement, sport and physical education*. London, UK: Heinemann.
- Bandura, A. (1997). *Self efficacy: The exercise of control*. New York, NY: W.H. Freeman and Company.
- Biddle, S.J.H. (2001). Enhancing motivation in physical education. In G.C. Roberts (Ed.), *Advances in motivation in sport and exercise* (pp. 101–128). Champaign, IL: Human Kinetics.
- Bourdieu, P. (1984). *Distinction: A social critique of the judgement of taste*. London, UK: Routledge.
- Braithwaite, R., Spray, C.M., & Warburton, V.E. (2011). Motivational climate interventions in physical education: A meta-analysis. *Psychology of Sport and Exercise*, 12, 628–638. doi:10.1016/j.psychsport.2011.06.005
- Branden, N. (1994). *The six pillars of self esteem*. New York, NY: Bantam.
- Burkitt, I. (1999). *Bodies of thought: Embodiment, identity and modernity*. London, UK: Sage.
- Capel S., & Whitehead M.E. (Eds.). (2013). *Debates in physical education*. London, UK: Routledge.
- Carson, V., Hunter, S., Kuzik, N., Wiebe, S., Spence, J., Friedman, A., & Hinkley, T. (2016). Systematic review of physical activity and cognitive development in early childhood. *Journal of Science and Medicine in Sport*, 19, 573–578. PubMed ID: 26197943 doi:10.1016/j.jsams.2015.07.011
- Cecchini, J.A., Fernandez-Rio, J., & Mendez-Gimenez, A. (2014). Effects of Epstein's TARGET on adolescents' intentions to be physically active and leisure-time physical activity. *Health Education Research*, 29, 485–490. PubMed ID: 24650945 doi:10.1093/her/cyu007
- Chaddock-Heyman, L., Erickson, K.I., Voss, M.W., Knecht, A.M., Pontifex, M.B., Castelli, D.M., & Kramer, A.F. (2013). The effects of physical activities on functional MRI activation associated with cognitive control in children: A randomized controlled intervention. *Frontiers in Human Neuroscience*, 7, 72. PubMed ID: 23487583 doi:10.3389/fnhum.2013.00072
- Chase, M.A. (1998). Sources of self-efficacy in physical education and sport. *Journal of Teaching in Physical Education*, 18, 76–89. doi:10.1123/jtpe.18.1.76

- Chen, A. (2015). Operationalizing physical literacy for learners: Embodying the motivation to move. *Journal of Sport and Health Sciences*, 4, 125–131. doi:10.1016/j.jshs.2015.03.005
- Davis, C.L., Tomporowski, P.D., McDowell, J.E., Austin, B.P., Miller, P.H., Yanasak, N.E., & Naglieri, J.A. (2011). Exercise improves executive function and achievement in overweight children: A randomised, controlled trial. *Health Psychology*, 30, 91–98. PubMed ID: 21299297 doi:10.1037/a0021766
- Deci, E.L., & Ryan, R.M. (1985). *Intrinsic motivation and self determination in human behaviour*. New York, NY: Plenum Press.
- Department for Education. (2013). National curriculum in England: PE programmes of study. Retrieved from <https://www.gov.uk/government/publications/national-curriculum-in-england-physicaleducation-programmes-of-study>
- Descartes, R. (1641/1984). Meditations on first philosophy (Trans.). In J. Cottingham, R. Stoothoff & R. Stoothoff (Eds.), *The philosophical writings of Descartes* (Vol. 2). Cambridge, MA: Cambridge University Press.
- Diamond, A. (2015). Effects of physical exercise on executive functions: Going beyond simply moving to moving with thought. *Annals of Sports Medicine and Research*, 2, 1011. PubMed ID: 26000340
- Donnelly, J.E., Hillman, C.H., Castelli, D., Etner, J.L., Lee, S., Tomporowski, P., & Szabo-Reed, A.N. (2016). Physical activity, fitness, cognitive function, and academic achievement in children: A systematic review. *Medicine and Science in Sports and Exercise*, 48, 1197–1222. PubMed ID: 27182986 doi:10.1249/MSS.0000000000000901
- Dorobantu, M., & Biddle, S. (1997). The influence of situational and individual goals on intrinsic motivation of Romanian adolescents towards physical education. *European Yearbook of Sport Psychology*, 1, 148–165.
- Duda, J.L., & Nicholls, J.G. (1992). Dimensions of achievement motivation in schoolwork and sport. *Journal of Educational Psychology*, 84, 290–299. doi:10.1037/0022-0663.84.3.290
- Durden-Myers, E.J., Whitehead, M.E., & Pot, N. (2018). Physical literacy and human flourishing. *Journal of Teaching in Physical Education*, 37. doi:10.1123/jtpe.2018-0132
- Dweck, C.S. (1986). Motivational processes affecting learning. *The American Psychologist*, 41, 1040–1048. doi:10.1037/0003-066X.41.10.1040
- Dweck, C.S., & Leggett, E.L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95, 256–273. doi:10.1037/0033-295X.95.2.256
- Elias, N. (1982). *The civilizing process: State formation and civilisation* (Vol. 3). Oxford, UK: Basil Blackwell.
- Elliot, A.J., & Church, M.A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, 72, 218–232. doi:10.1037/0022-3514.72.1.218
- Elliot, A.J., & Harackiewicz, J.M. (1994). Goal setting, achievement orientation, and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology*, 66, 968–980. PubMed ID: 8014838 doi:10.1037/0022-3514.66.5.968
- Elliot, A.J., & McGregor, H.A. (2001). A 2 × 2 achievement goal framework. *Journal of Personality and Social Psychology*, 80, 501–519. PubMed ID: 11300582 doi:10.1037/0022-3514.80.3.501

- Elliot, A.J., Murayama, K., & Pekrun, R. (2011). A 3 × 2 achievement goal model. *Journal of Educational Psychology*, 103, 632–648. doi:10.1037/a0023952
- Elliot, A.J., & Thrash, T.M. (2001). Achievement goals and the hierarchical model of achievement motivation. *Educational Psychology Review*, 13, 139–156. doi:10.1023/A:1009057102306
- Epstein, J.L. (1988). Effective schools or effective students? Dealing with diversity. In R. Haskins & B. MacBae (Eds.), *Policies for America's public schools: Teacher, equity and indicators* (pp. 89–126). Norwood, NJ: Ablex.
- Epstein, J.L. (1989). Family structures and student motivation: A developmental perspective. In C. Ames & R. Ames (Eds.), *Research on motivation in education* (Vol. 3, pp. 259–295). New York, NY: Academic Press.
- Foucault, M. (1974). *The archaeology of knowledge*. London, UK: Tavistock.
- Fox, K., Goudas, M., Biddle, S., Duda, J., & Armstrong, N. (1994). Children's task and ego goal profiles in sport. *British Journal of Educational Psychology*, 64, 253–261. PubMed ID: 8075016 doi:10.1111/j.2044-8279.1994.tb01100.x
- Gibbs, R.W., Jr. (2006). *Embodiment and cognitive science*. New York, NY: Cambridge University Press.
- Gill, J.H. (2000). *The tacit mode state*. Albany, NY: State University of New York Press.
- Goddard Blythe, S. (2005). *The well balanced child*. Gloucestershire, UK: Hawthorn Press.
- Goffman, E. (1959). *The presentation of self in everyday life*. New York, NY: Doubleday.
- International Physical Literacy Association. (2017). Physical literacy definition. Retrieved from www.physical-literacy.org.uk
- Johnson, M. (1999). *The meaning of the body*. Chicago, IL: University of Chicago Press.
- Jones, R.A., Hinkley, T., Okely, A.D., & Salmon, J. (2013). Tracking physical activity and sedentary behaviour in childhood: A systematic review. *American Journal of Preventive Medicine*, 44, 651–658. PubMed ID: 23683983 doi:10.1016/j.amepre.2013.03.001
- Jurbala, P. (2015). What is physical literacy, really? *Quest*, 67, 367–383. doi:10.1080/00336297.2015.1084341
- Kwan, V.S.Y., Kuang, L.L., & Hui, N.H.H. (2009). Identifying the sources of self-esteem: The mixed medley of benevolence, merit, and bias. *Self and Identity*, 8, 176–195. doi:10.1080/15298860802504874
- Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh*. New York, NY: Basic Books.
- Leder, D. (1990). *The absent body*. Chicago, IL: University of Chicago Press.
- Liu, J., Xiang, P., & Lee, J. (2017). Developing physically literacy in K-12 physical education through achievement goal theory. *Journal of Teaching in Physical Education*, 36, 292–302. doi:10.1123/jtpe.2017-0030
- Liu, M., Wu, L., & Ming, Q. (2015). How does physical activity intervention improve self-esteem and self-concept in children and adolescents? Evidence from a meta-analysis. *PLoS ONE*, 10(8), 1–17. doi:10.1371/journal.pone.0134804
- Lubans, D., Richards, J., Hillman, C., Faulkner, G., Beauchamp, M., Nilsson, M., & Biddle, S. (2016). Physical activity for cognitive and mental health in youth. A systematic review of mechanisms. *Pediatrics*, 138(3). doi:10.1542/peds.2016-1642
- Maiese, M. (2016). *Embodied selves and divided minds*. Oxford, UK: Oxford University Press.
- McAuley, E., Szabo, A., Gothe, N., & Olson, E.A. (2011). Self-efficacy: Implications for physical activity, function, and functional limitations in older adults. *American Journal of Lifestyle Medicine*, 5, 361–369. doi:10.1177/1559827610392704

- Merleau-Ponty, M. (1968). *Phenomenology of perception* (C. Smith & K. Paul, Trans.). London, UK: Routledge.
- Murray, D.L., Aloni, M., Holmes, J.G., Derrick, J.L., Stindson, C.A., & Leder, S. (2009). Fostering partner dependence as trust insurance: The implicit contingencies of the exchange script in close relationships. *Journal of Personality and Social Psychology*, 96, 324–348. PubMed ID: 19159135 doi:10.1037/a0012856
- Nicholls, J.G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review*, 91, 328–346. doi:10.1037/0033-295X.91.3.328
- Nicholls, J.G. (1989). *The competitive ethos and democratic education*. Boston, MA: Harvard University Press.
- Ntoumanis, N. (2012). A self determination theory perspective on motivation in sport and physical education: Current trends and possible future research directions. In G.C. Roberts & D.C. Treasure (Eds.) *Motivation in sport and exercise* (Vol. 3, pp. 91–128). Champaign, IL: Human Kinetics.
- Nussbaum, M.C. (2000). *Women and human development: The capabilities approach*. Cambridge, MA: Cambridge University Press.
- Nussbaum, M.C. (2011). *Creating capabilities: The human development approach*. London, UK: Belknap Press of Harvard University.
- Ontario Ministry of Education. (2015). The Ontario curriculum, grades 1–8: Health and physical education. Retrieved from <http://www.edu.gov.on.ca/eng/curriculum/elementary/health.html>
- Perrin-Wallqvist, R., & Carlsson, S. (2011). Self image and physical education—A phenomenological study. *The Qualitative Report*, 16, 933–948.
- Pot, N., Whitehead, M.E., & Durden-Myers, E.J. (2018). Physical literacy from philosophy to practice. *Journal of Teaching in Physical Education*, 37. doi:10.1123/jtpe.2018-0133
- Sandelands, L.E., Brockner, J., & Glynn, M.A. (1988). If at first you don't succeed try again. Effects of persistence-performance, contingencies, ego-involvement, and self esteem on task -performance. *Journal of Applied Psychology*, 73, 208–216. doi:10.1037/0021-9010.73.2.208
- Sartre, J-P. (1957). *Being and nothingness* (H. Barnes, Trans.). London, UK: Methuen.
- Sen, A. (2009). *The idea of justice*. Cambridge, MA: Harvard University Press.
- Shapiro, L. (2011). *Embodied cognition*. New York, NY: Routledge.
- Shilling, C. (2006). *The body and social theory*. London, UK: Sage.
- Shilling, C. (2008). *Changing bodies*. London, UK: Sage.
- Singelis, T.M., Bond, M.H., Sharkey, W.F., & Sui Yui Lai, C. (1999). Unpacking culture's influence on self-esteem and embarrassability. *Journal of Cross-Cultural Psychology*, 30, 315–341. doi:10.1177/0022022199030003003
- Society of Health and Physical Educators. (2016). National PE standards. Retrieved from <http://www.shapeamerica.org/standards/pe/>
- Sun, H., Li, W., & Shen, B. (2017). Learning in physical education: A self-determination theory perspective. *Journal of Teaching in Physical Education*, 36, 277–291. doi:10.1123/jtpe.2017-0067
- van Amsterdam, N. (2013). Big fat inequalities, thin privilege: An intersectional perspective on 'body size'. *European Journal of Women's Studies*, 20, 155–169. PubMed ID: 29884078 doi:10.1177/1350506812456461

- Van den Berghe, L., Vansteenkiste, M., Cardon, G., Kirk, D., & Haerens, L. (2014). Research on self-determination in physical education: Key findings and proposals for future research. *Physical Education and Sport Pedagogy*, 19, 97–121. doi:10.1080/17408989.2012.732563
- Wang, Y., & Wang, L. (2016). Self construal and creativity. The moderator effect of self-esteem. *Personality and Individual Differences*, 99, 184–189. doi:10.1016/j.paid.2016.04.086
- Wheatley, M. (n.d). Margaret Wheatley's ten principles for creating healthy communities. Retrieved from <https://sites.google.com/site/ticstcc/margaret-wheatley-s-ten-principles-for-creating-healthy-communities>
- Whitehead M. (Ed.). (2010). *Physical literacy: Throughout the lifecourse*. New York, NY: Routledge.
- Xiang, P., Agbuga, B., Liu, J., & McBride, R.E. (2017). Relatedness need satisfaction, intrinsic motivation, and engagement in secondary school physical education. *Journal of Teaching in Physical Education*, 36, 340–352. doi:10.1123/jtpe.2017-0034