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Implications for Promoting Physical Literacy

Elizabeth J. Durden-Myers and Nigel R. Green
Liverpool John Moores University

Margaret E. Whitehead
The University of Bedfordshire

Durden-Myers and Green are with the Faculty of Education, Health and Community, Liverpool John Moores University, Liverpool, United Kingdom. Whitehead is with the University of Bedfordshire, Luton, United Kingdom. Address author correspondence to Elizabeth J. Durden-Myers at liz@scholary.com

Abstract

This study considers the implications for teachers of physical education of adopting physical literacy as the focus of their work. These implications arise from the philosophical underpinning of the concept, from the definition of physical literacy and are in line with the mission of the International Physical Literacy Association. In the first section of this study, recommendations stemming from the philosophical roots of the concept will be outlined in brief. The other three sections will demonstrate how this philosophical basis and the definition of physical literacy should inform, first, lesson and unit content; second, teaching approaches; and, finally, curriculum planning. Unpacking the implications and what physical literacy looks like in practice is essential if teachers are to begin to incorporate physical literacy within their practice.

Keywords: assessment, curriculum, pedagogy, physical education

The concept of physical literacy has been discussed and debated in many countries since the turn of the century. Most importantly, physical literacy has been accepted as a valid goal to work toward within education and beyond. Now high on the agenda is the issue of the nature of the implications that follow from the concept. In other words, colleagues are asking what they should do to foster progress with respect to physical literacy (Edwards, Bryant, Keegan, Morgan, & Jones, 2017). While much has been written to answer this question, these recommendations have tended to focus on different aspects of the implications. This study is designed to gather together a range of recommendations so that they are readily available for readers. There are two drivers of the implications of adopting physical literacy as the goal of physical education. These are the philosophical underpinning of the concept and the elements encapsulated within the definition. The implications of the philosophy are addressed in the first part of the study. The second part considers implications that arise from the elements within definition. These include a discussion of the content or material of physical education, recommendations regarding how working to foster physical literacy will affect the way learning is managed, and, finally, the issue of program planning.

Philosophical Roots in Relation to Nurturing Physical Literacy

The concept of physical literacy builds from the beliefs set out by proponents of three philosophical schools of thought—monism, existentialism, and phenomenology. Therefore, it is not surprising that keeping these views in mind is essential to develop authentic teaching aimed at fostering physical literacy. For example, the roots of physical literacy in monism need to be addressed by relating to each learner as a whole person, rather than as composed of a body and a mind. The roots of the concept in existentialism should be evident in the provision of a wide range of situational variables, and the phenomenological roots need to be accommodated in the understanding that perception of any situation will be particular to each individual learner. In this section, the influences of each of these schools of thought will be set out in a little more detail before moving into the detailed recommendations concerning pedagogy, content, and curriculum planning.

Monism

An appreciation of the individual as a holistic being means that learning in the movement field is not concerned with disciplining the body as an object—a mechanism somewhat removed from the real person. This view is supported by Sartre (1957) and Gibbs (2006). The affective, the physical, and the cognitive are as one— cohesive and combined—and constitute the individual. Indeed, these domains are the vehicle through which the individual creates a personal identity. Human embodiment is central to being, and affects, and is affected by, all other domains. As Gibbs (2006) writes, “the traditional disembodied view of mind is mistaken, because human cognition is fundamentally shaped by embodied experience” (p. 3). Similarly, Sartre (1957) asserts, “for human reality, to be is to act” (p. 476).

It is very important that each individual is treated with respect. Each is a unique learner who needs to be understood as such. Authentic teaching should demonstrate empathy and sensitive supportive feedback. At all times, teachers should be mindful of maintaining a focus predominantly on the learner rather than working from a starting point of teaching an activity. This sympathetic appreciation is essential to ensure that individuals develop the necessary motivation and confidence to make progress on a physical literacy journey that establishes a commitment to physical activity for life.

Existentialism

An appreciation of existentialism signals that learning should be seen as interaction with situations, settings, and other people. Burkitt (1999) explains that “there is a primordial coexistence between the body and its world, which grounds the possibility of developing conscious awareness and knowledge” (p. 74). It is argued that as humans we create ourselves by interacting with the world around us and that the richer and more varied these encounters, the fuller will be an individual’s realization of self. Levins and Lewontin (1987) express this in writing that “ … the environment and the organism codetermine each other” (p. 207). Similarly, Burkitt (1999) expresses the view that there is a fundamental coexistence between the individual and the world “which grounds the possibility of developing conscious awareness and knowledge” (p. 74). Each situation will call on the individual to respond and, in that response, the individual can grow in experience, competency, and appreciation. Authentic teaching involves the teacher considering carefully the nature of the situation and the type of demands to which participants will be challenged to respond. The nature of the demands with respect to challenge and breadth should be matched with the experience and competence of the learners. Guidance and feedback are best given from the perspective of supporting individuals as they become familiar with the setting and make progress in mastering the challenges set.

This understanding, support, and encouragement from the teacher are critical in ensuring individuals have experiences that match their potential. This will enable them to develop the necessary confidence and physical competence to make progress on a physical literacy journey (Whitehead, 2015).

Phenomenology

An appreciation of phenomenology highlights the reality of differences between learners. A key element of phenomenological belief is that individuals are who they are as a result of the cumulative effect of all their previous experiences. The outcome of this is that each individual will see, appreciate, and understand a situation or environment from a unique perspective. This perspective is rooted in previous encounters, as explained by Gallagher (2012). There are three key considerations with respect to authentic teaching. First, sensitive appreciation and respect needs to be shown to the life experiences of each individual. Second, the experience of a particular lesson should positively impact future perceptions, particularly in novel or challenging situations in the field of physical competence. Third, individuals within the lesson will have a different appraisal of that lesson, therefore, it is important to evaluate the success of a lesson from the perspectives of the individual's learning therein.

This understanding of the unique nature of each learner is crucial to being certain that individuals have experiences that foster self-confidence, self-belief, and a positive attitude to physical activity. The confidence to engage in new experiences is essential to make progress on a physical literacy journey and encourage learners to choose physical activity for life.

Implications Arising From Elements Within the Definition

In the first part of this study, we surveyed the broad implications of committing to physical literacy arising from the philosophical roots of the concept. In part two of this study, implications that arise from the elements within definition will be presented in some detail. This will include discussions of how physical literacy is informed through content, teaching approaches, and curriculum.

Physical Literacy Informed Content

This section answers the question, how can physical literacy inform teaching content? Teaching content should, where possible, be selected, planned, and delivered with the learners at the center of their learning. Learning content should be designed to nurture the development of learner's motivation, confidence, physical competence, and knowledge and understanding. Nurturing each of these elements in the "what" we teach (content) and the "how" we teach (pedagogy) is essential if content is to be informed by physical literacy.

In particular, teachers' understanding of physical competence is crucial in creating learning content that enables learners to develop their physical literacy and make progress on their physical literacy journey. A thorough appreciation of the nature of physical competence, how it is developed, and what this means for physical education practice is essential if physical competence is to be nurtured.

Physical Competence

"Physical competence can be described as the sufficiency in movement patterns and the deployment of these in the context of a range of movement forms" (Murdoch & Whitehead, 2010, p. 181). Sometimes, the notion of a movement vocabulary is used to describe the extent of this

sufficiency, however, reference to a vocabulary has proved controversial in promoting physical literacy and sufficiency is now more often referred to as having a bank of movement patterns (Whitehead, 2010). Movement capacities are also an aspect of movement competence. It is by the application of movement capacities that movement patterns become increasingly complex. Each aspect of physical competence as identified in Whitehead (2010) is discussed in this study.

Movement patterns: Movement patterns are the building blocks of effective participation in physical activity and thus provide the underpinning foundations from which physical competence is developed. Movement patterns are described by Murdoch and Whitehead (2010) as "configurations of movement which develop from the young child's early exploration of the physicality in the world" (p. 178).

Movement patterns can be categorized broadly in four stages of development, which are foundation, general, refined, and specific (Murdoch & Whitehead, 2010). Foundation patterns represent the early years of exploration, while general, refined, and specific patterns gradually challenge the mover to be ever more precise and accurate in different physical activity settings and situations. Movement patterns are not the same as fundamental movement skills (FMS). However, movement patterns are competencies that feed into the whole range of the physical activity spectrum. These activities include all those that are identified in relation to movement forms referred to below (see Table 1; Murdoch & Whitehead, 2010). While movement patterns are usually introduced in isolation from an activity setting, this represents only a minority of the learning time, with exploration of using these patterns in context being the principal vehicle of learning. There is considerable debate about the legitimacy of the notion of fundamental in FMS (Pot et al., 2018). There are two particular areas of discussion. First, currently, FMS are directed to game play contexts and so are not fundamental to movement in general (Pot et al., 2018).

Table 1 Six Movement Forms and Activities

Movement Form	Description and Example Activities
Adventure	Activities in the adventure form have a main focus on meeting risk and managing challenge within natural and unpredictable environments. Adventure activities may include climbing, abseiling, rambling, orienteering, skiing, skating, and swimming.
Aesthetic	Activities in the aesthetic and expressive form have a main focus on the embodied dimension being used as an expressive instrument within a creative, aesthetic, or artistic context. Aesthetic and expressive activities may include all forms of dance and aspects of gymnastics.
Athletic	Activities in the athletic form have a main focus on the performer reaching personal maximum/optimal power, distance, speed, and accuracy within a competitive and controlled environment. Athletic activities may include gymnastics, athletics, swimming, cross country, and powerlifting.
Competitive	Activities in the competitive form have a main focus on the achievement of predetermined goals through the outwitting of opponents, while managing a variety of implements and objects in challenging and changing contexts. Competitive activities may include football, hockey, cricket, bowls, volleyball, rugby, and archery.
Fitness and health	Activities in the fitness and health form have a main focus on gradually improving the function of the body, both qualitatively and quantitatively, through regular, repetitive participation. Fitness and health activities may include aerobics, pilates, yoga, circuits and Zumba.
Interpersonal/relational	Activities in the interactional/relational form are characterized by a main focus on sharing experiences and the development of empathy between people and groups as they move together in a social context. Interactive/relational activities may include line and folk dancing, synchronized swimming, diving, and trampolining.

Note. Adapted from *Physical literacy: Throughout the lifecourse* (pp. 182–183), by E. Murdoch and M.E. Whitehead, 2010, London, UK: Routledge.

Second, FMS are often presented as closed skills that are replicated in context. There is a view that this is never the case, as any movement response is particular to a situation (Standal and Moe, 2011). The notion of a pattern indicates that while there are commonalities between every use of a movement pattern each time, it is enacted and needs to take a unique form.

Foundation movement patterns: These patterns comprise those aspects of physical competence that are typically evident in children in their early years of life. Foundation movement patterns would contain the entire list of movements of which humans are capable. There are a number of categorization systems of which one is presented in Table 2. In Table 2, the foundation movement patterns are grouped into five types, these being balance, locomotion, flight, manipulation, and projection (developed from Maude, 2010b).

Table 2 Categorization of Types of Foundation Movement Patterns

Type	Example Movement Patterns Involving… _____		
Balance	• standing • lying • on hands and feet/foot • on one hand and one foot • sliding • swinging	• sitting • on hands and knees • on knees • on one foot • rocking	
Locomotion	• rolling • crawling • jogging • galloping • pulling • wading	• creeping • stepping • running • dodging • pushing • swimming	• shuffling • walking • striding • scooting • climbing
Flight	• two feet • jumping off • hopping • skipping • jumping onto • jumping over	• bouncing on two feet • jumping on • leaping • hopscotch • jumping along	
Manipulation	• holding • grasping • releasing • placing • waving	• feeling • gripping • picking up • passing from hand to hand • circling (scarf, ribbon, rope)	
Projection	• rolling • aiming • punting • throwing (underarm, overarm, and sidearm) • receiving a rolled object • kicking receiving a slow object • kicking catching from a bounce • kicking catching from a throw	• pushing • striking • volleying	• bouncing • kicking • heading

Note. Adapted from Maude (2010b).

With innumerable movements and environments in which these movements may take place, and with the added complication of maturation and development over the life course, it is difficult to create an all-encompassing categorization system. Moreover, a comprehensive categorization system may be restrictive in responding to an individual's movement development needs, or may not be able to fully capture the totality of human movement potential. Maude (2010a) reminds us that, in fact, systems appropriate to categorizing movement may change or develop in relation to the age or stage of the learner. However, having said this, a categorization system can serve as a starting point from which movements patterns can become more complex.

What does this mean for physical education content in the early years? Physical education should aim to develop the learner's confidence in deploying a wide variety of movement patterns. This can be achieved by the teacher planning semistructured play environments in which the young learner can explore movement possibilities. If balance is the theme of a session, the teacher would provide a wide range of apparatus that offers opportunities for different balance challenges to be explored. If object control is the theme, the teacher would set out a range of equipment such as balls, bean bags, and quoits with which a young child can experiment.

General movement patterns: These are direct developments from the young child's early bank of foundation movement patterns (Murdoch & Whitehead, 2010). They are more structured and begin to anticipate movement demands in physical activity settings, including striking, receiving, running, jumping, climbing, balancing, inverting, rotating, and gesturing. At this stage, general movement patterns are often developed and challenged by deployment in simple activity settings. Learners are expected to reflect on their movement and also to enact sequences of movement patterns. Enhanced self-awareness, self-evaluation, and discussion of next steps are encouraged. The acquisition of general movement patterns is the prerequisite to developing refined patterns.

Refined movement patterns: Refined movement patterns form a bridge between general and specific movement patterns. Refined patterns begin to lay the groundwork for later activity specific skills (Murdoch & Whitehead, 2010). Development of self-awareness and precision are aims at this stage, and activity contexts become more demanding. Patterns are deployed in variable sequences, and movers are challenged to respond to changes in the activity context more readily. Refined movement patterns should be developed in a wide variety of activity contexts. The contexts should embrace environments that have a set environment (e.g., trampolining), and those that are subject to change (e.g., sailing). In addition, contexts need to present a variety of relationships with other movers, as well as those that demand independence and responsibility. Experience in these different contexts will ensure that a good range of patterns are fostered.

Specific movement patterns: Specific movement patterns are the most sophisticated patterns and demand further honing of refined patterns. They can be described as sports/activity specific skills (Murdoch & Whitehead, 2010). Specific patterns need to address all aspects of the physical activity context, including conforming to the rules and protocols of the activity in question. The movement patterns combine secure establishment as well as flexibility in use. Characteristically, these specific movement patterns show robustness in execution being demonstrated alongside rapid responsiveness, reliability, and imagination. Ironically, it is not unusual to find differences between movers in the execution of a specific movement patterns. These differences accommodate differences in physique and aptitude. While they are activity-specific patterns, they are also significantly personal enactments of earlier general and refined patterns. Table 3 shows the growing specificity of patterns from, for example, the general pattern of sending a ball or other missile, to a contextualization of refined patterns that consider the activity context, and, finally, to a specific pattern that caters for the particular demands of a type of physical activity.

Table 3 Examples of the Relationship Between General, Refined, and Specific Movement Patterns

General Movement Patterns	Refined Movement Patterns	Specific Movement Patterns
Sending	Throwing, bowling, and shooting	Spin bowling in cricket
Striking	Batting, dribbling, driving, and kicking	Penalty kick in football
Rotating	Turning and spinning	Somersault in trampolining

Note. Adapted from *Physical literacy: Throughout the lifecourse* (p. 179), by E. Murdoch and M.E. Whitehead, 2010, London, UK: Routledge.

Movement Capacities

This development from the exploratory patterns of the young children as they establish their physicality in the world, through to competent movers capable of responding to challenging physical activity settings with fluency, reliability, and creativity, is achieved by the development of movement capacities. Movement capacities are described as "the constituent abilities of the articulate mover" (Murdoch & Whitehead, 2010, p. 176) and are the features of movement that enable foundation movement patterns to develop into general, refined, and specific patterns. Movement capacities identify qualities of movement and thus focus on characteristics of body awareness and body management that underpin all human movement. Capacities lie at the heart of movement and are categorized as simple, combined, and complex. Examples of simple capacities are core stability, balance, and coordination. Examples of combined capacities are poise, which incorporates both balance and core stability; fluency, which incorporates coordination, balance, and proprioceptive awareness; and agility, which incorporates flexibility, balance, and coordination. Examples of complex capacities are bilateral coordination, hand-eye coordination, and turning and twisting on a variety of rotational axes (see Murdoch & Whitehead, 2010).

Complex capacities require a greater level of movement sophistication in comparison with combined and simple capacities. Murdoch and Whitehead (2010) suggest that individuals making progress with respect to developing their physical competence "will gradually acquire the ability to apply movement capacities" (p. 178). While movement patterns depend on capacities for their development, it is in the context of working to establish movement patterns that capacities are mastered. Teacher understanding of capacities inherent in a movement pattern is essential in guiding learning. Issues concerning capacities are often diagnosed in teaching and generate important teaching points. For example, the simple capacity of balance is crucial to many movement patterns. The combined capacity of fluency needs attention in all patterns, but is particularly important in some dance genres. The complex capacity of hand-eye coordination is key in many patterns in a range of contexts, such as ball games and rock climbing.

Movement patterns and movement capacities are codependent. These constituents of movement in their different but inseparable ways provide a route to enhance physical competence. This progress in competence will depend on the teacher in at least two ways. First, the teacher should ensure that the nature of challenges set for learners builds from previous achievement with respect to both the specificity of the pattern and potential to develop the necessary capacities. Second, given that a particular movement pattern is called on in numerous very different activities, and that a particular movement capacity features in numerous movement patterns, it is essential that learners experience a broad range of activity settings. This recommendation needs to be carefully managed, as too little time on too many activities can cause frustration and be demotivating as little real progress is made. It is suggested that different settings should be representative of the different movement forms (see Table 1).

Movement Forms

Murdoch and Whitehead (2010) propose six movement forms. Each form has a unique essence and takes place in a particular situation with respect to both the physical environment and the relationships with others. In addition, each form makes distinctive demands on physical competence in drawing from particular clusters of movement patterns. These movement forms are presented in Table 1.

Whitehead (2010) acknowledges that this identification of movement forms "in no way claims to be the definitive method of describing human movement" (p. 45), but instead is informed by, and springs from, deliberations of movement specialists and their extensive experience in the field. It will be seen from the previous brief descriptions that physical activities differ markedly in their demands, purposes, and challenges. Such diverse contexts of physical activity offer an abundance of opportunity and choice, and it is often claimed that there is "something for everyone" in the field of physical activity. It is certainly the case that a broad range of interests and motivation can be accommodated. It is recommended that teachers of physical education have an awareness of movement forms to ensure that they design, develop, and deliver a physical education curriculum that nurtures physical competence in a wide variety of movement contexts. Having said this, it is important to highlight that physical education content needs to consider depth as well as breadth. What this means is that physical education content should not be purely focused around experiencing as many different physical activities as possible, but instead should consider the development of meaningful and rewarding competence in each movement form. It is appreciated that it is a hard task to balance quality and quantity within physical education content. Too much time on one activity may result in tedium or boredom, while too little time may result in no progress or proficiency being achieved.

From the previous discussion, physical competence has been described as acquiring a rich bank of movement patterns that can affect rewarding and meaningful experiences in a range of physical activity settings. Foundation patterns can develop into general patterns, refined patterns, and specific patterns through the application of movement capacities. This process will be facilitated by the employment of movement patterns in a range of differing activity settings or movement forms. An experience of this nature throughout schooling should provide individuals with a secure platform from which engagement in a wide variety of physical activities throughout life is initiated and sustained.

Physical Literacy Informed Teaching Approaches

The next question that arises is, how should engagement, in the content outlined previously, be so fashioned to enable all learners to develop their physical literacy and make progress on their physical literacy journey? Learning can be considered as a collaborative endeavor with complex interactions between different groups of children, teachers, head teachers, local authority managers, and politicians who make up the education system (Jess, Atencio, & Thorburn, 2011). Jess et al. suggest that from a pedagogy perspective, the idea that children learn through exploratory and nonlinear processes relative to changing and dynamic environments raises important questions about the nature of the conditions that teachers prepare for children and how certain tasks are made available to them. Accepting that as learning develops in the different environments, it can often be seen to be nonlinear, emerging, and complex, where the notion of active learners relates to social constructivism. Introducing variability, where students are provided with a range of possibilities such as different start positions, hurdle heights, and distances between hurdles in an

athletics lesson and are asked to find functional solutions to the task, allows learning to evolve in a nonlinear manner. Therefore, nonlinear pedagogy is an option that supports this issue as it is a methodology for teaching that captures how phenomena such as movement variability, self-organization, and decision making occur as a consequence of interactions between student–student, student– teacher, and student–environment constraints (Pot et al., in press).

As discussed earlier, phenomenologically speaking individuals construct their own meaning and understanding based on their prior interactions with the world. If we accept that learners learn by engaging and responding to the varied pedagogies found in the physical education curriculum, then it is important to consider the nature of pedagogical approaches and the environments that teachers create to maximize the impact of learning.

Pedagogical approaches that involve regular engagement in authentic physical education learning communities should encourage collaborative, diverse, creative, and rich experiences for young people (Jess et al., 2011). However, as noted by Kirk, Macdonald, and O'Sullivan (2006), younger children often prefer activities that emphasize play, fun, and friendship. Older learners enjoy experiencing a range of individual and group activities that involve more authentic contexts that reflect their physical culture. Therefore, pedagogical approaches need to be adaptable, appropriate, and challenging to learners, as well as relevant to the needs of each individual. Teachers need to draw from a range of pedagogical approaches. Rovegno and Dolly (2006) suggest that a range from traditional behaviorist pedagogy to more collaborative and self-organizing approaches is required to have a rich teaching repertoire. Rovegno and Dolly also suggest that strategies where young people are increasingly involved in scaffolding their own and others' learning experiences, relative to the environment and task, will allow for rich and deep learning to develop. However, there are key principles that teachers should be aware of when planning and engaging all young people in physical activities. Seven key instructional principles are presented here: (a) the individual, (b) promoting motivation, (c) enhancing confidence, (d) developing physical competence, (e) developing knowledge and understanding, (f) devolving responsibility, and (g) using feedback/charting progress as a motivational tool. Each of these key instructional principles is discussed in more detail as follows.

Key Principle 1: The Individual

The individual should be at the heart of physical literacy and, therefore, at the heart of pedagogy (Whitehead, 2010). Every individual is on a unique personal physical literacy journey, and this should be recognized throughout all learner/teacher contact (Taplin, 2013). Therefore, all forms of differentiation should be effectively employed so that the needs of each learner are met. A positive, safe, and encouraging environment should be established where it is evident that there is mutual respect between the teacher and the learner and between participants themselves. Individual recognition will include addressing individual needs, providing challenging but achievable tasks in a supportive environment, and providing a provision of feedback that is empathetic, motivating, and informative. The experiences provided for each individual allow progress to be made and self-confidence and self-esteem to be developed. This will encourage young people to want to engage in physical activity in the future.

Key Principle 2: Promoting Motivation

It is very important to establish a positive learning environment to support and facilitate a motivational climate. Teachers should be enthusiastic and encourage all participants to engage in their work and make progress in physical activities. The teaching environment should engender interest in physical activities through good organization, clear intentions, and the creation of a secure learning environment that provides supportive autonomy. According to Standage, Duda, and Ntoumanis (2003), the extent to which the motivation is adopted by the individual is considered to be self-determined. Self-determination theory (Deci & Ryan, 1985, 1991) relates to the degree to which the motivation toward engaging in activities is deemed to be internal and desirable to the individual. Deci and Ryan (1985, 1991) suggest that the need for autonomy, competence, and relatedness underpin self-determined motivation. Therefore, Standage et al. (2003) suggest that physical education teachers should seek to promote class structures that are autonomy supportive and mastery focused, as these dimensions facilitate self-determined motivation. It is very important to establish a positive learning environment to support and facilitate a motivational climate. Practitioners should be enthusiastic and encourage all participants to engage in their work and make progress in physical activities. The teaching environment should engender interest in physical activities through good organization, clear intentions, and the creation of a secure learning environment that provides supportive autonomy. Although research in this area is rare, Chen and Wang (2017) carried out a useful series of investigations into the relationship between interest and short-term and long-term commitment to participation on physical activity. While not providing conclusive results, some valuable proposals were formulated. Tasks that challenge, but are achievable, enable learners to achieve success and a sense of self-worth through mastery. Engaging learners' interest through positive experiences will foster the motivation to take part in physical education and help establish a desire for life-long participation in physical activity.

Key Principle 3: Confidence

Self-confidence that is specific to physical activity reflects the degree of certainty that individuals have about their ability to successfully perform within an activity (Feltz & Chase, 1998; Vealey, 1986). Successful mastery of a task is expected to enhance an individual's confidence. However, individuals may use different sources, such as task mastery and performance and situated goals, to develop, enhance, and maintain perceived confidence. Magyar and Feltz (2003) suggested that students who perceived a climate of mastery, in relation to their lessons, experienced greater intrinsic motivation and demonstrated a more positive attitude to engagement along with enhanced self-efficacy. However, students who were more performance focused demonstrated a more negative approach to lessons and had lower self-efficacy. Teachers should use a "can do" mastery approach with all learners and ensure that all participants are appropriately challenged, rather than a performance-related approach.

According to Bandura (1977), self-efficacy is an individual's personal conviction that he or she can execute what is required to produce a certain outcome in a specific situation. Self-efficacy plays a central role in future participation behavior in relation to choice of activities, effort, and persistence with tasks. As Bressan and Weiss (1983) concur, "given the appropriate skills and adequate incentives, feelings of self-efficacy will positively affect an individual's participation choice, effort, and persistence" (p. 39). Therefore, it is essential that participants' confidence in their ability to make progress in an activity is enhanced, through physical education, so as to establish a commitment to lifelong participation in physical activity. Achievement, progress, and effort should be celebrated to build self-esteem. Challenging participants to exercise their imagination and

creativity has the potential for individuals to develop a personal perspective on their involvement, thus facilitating the development of self-confidence and self-respect. Therefore, involvement in physical activity should provide opportunities for participants to discover and solve problems as they explore movement in different activities. These ways of engaging in movement learning are considered to be more likely to generate more meaningful experiences than didactic instruction (Forrest, Webb, & Pearson, 2006).

Key Principle 4: Physical Competence

According to Harter (1978), perceptions of competence are seen as critical determinants of subsequent motivation to participate in physical activity. Individuals who perceive themselves to be competent are more likely to continue to participate in physical activity in the future. Those with low perceived competence are less more likely to discontinue their involvement in sport. The development of physical competence facilitated through meaningful interaction with a range of physical activity environments is essential to encourage effective participation. This effective participation, in turn, has the potential to increase an individual's perceptions of confidence and thus open up opportunities for further interaction in the future. Through the use of a range of imaginative challenges, tasks, situations, practices, and applications, the teacher can guide the learners through experiences that demand new thinking and focused application. Then, the learners need time to practice and refine what they are learning, thus providing the opportunity for real progress, for movement patterns to be established, and for perceptions of competence to be acquired. Where experiences are relevant, realistic, and challenging, life-long participation in physical activity will be encouraged along with perceptions of competence.

Key Principles 5: Developing Knowledge and Understanding

Promoting knowledge and understanding is integral to engaging individuals in physical activity. As indicated in the New Zealand health and physical education curriculum document (Ministry of Education, 1999), through learning in "physical education students will develop the knowledge, skills, attitudes, and motivation to make informed decisions and act in ways that contribute to their personal well-being, the well-being of other people, and that of society as a whole" (p. 6). Penny, Brooker, Hay, and Gillespie (2009) suggest that the importance of developing skills, knowledge, and attitudes and values are all equally important. Knowledge and understanding concerning the constituents of movement and the nature of movement forms is essential to establish life-long participation in physical activity. An awareness of aspects of movement, and an ability to articulate these aspects, provide a sound base from which participants can reflect, discuss, and create responses to movement contexts.

Cale and Harris (2011) confirm that schools have statutory responsibility to promote learning about health. Knowledge and understanding regarding the value of physical activity to holistic health is essential to establish life-long participation in physical activity. Information and discussion should be appropriate to age, stage, and need of the participants. As appropriate, the effects of exercise should be explained and the value of exercise reflected upon. Where relevant, the role of physical activity as a key feature of holistic health should be the subject of attention, with the sharing of personal perspectives being welcomed. As with all cognitive processes, this needs to be at a level that is relevant to the intellectual endowment of an individual and should actively engage each

individual “in appropriate amounts of independent or self-organizing practice to consolidate and deepen their learning” (Jess et al., 2011, p. 188).

Key Principles 6: Devolving Responsibility

Hellison (2011) suggests that teaching personal and social responsibility is about using physical education as a means to teach students the importance of taking responsibility for their actions. By integrating and internalizing key skills related to taking responsibility, students develop structure and clarity for their lives, in addition to values and inner discipline. Hellison suggests that these skills can be developed in physical activity settings and transferred to other aspects of students’ lives. Taking responsibility for participation should be devolved progressively. The ability to take responsibility for participation is essential to establish lifelong participation in physical activity. Once the individuals leave the guidance of the teacher, it is expected that they are able to make their own decisions about participation. Situations created by the teacher that demand participant decision making, reflection on choices, and articulation of reasons for choices will lay the ground for future independence.

Opportunities should be provided for participants to take responsibility for aspects of their physical activity experiences. This may involve personal and/or group goal and task setting within an activity experience. Alternatively, it may involve broader aspects of program planning, delivery, and reflection on progress. Reflection and evaluation by the participants is essential so they can consider the effectiveness of the choices they have made. Inclusion of “participant voice” demonstrates interest in and respect for participants and should enhance future motivation and engagement (Oliver & Hamzeh, 2010). This strategy also helps individuals to take the initiative and lays the groundwork for taking responsibility for their involvement in physical activity in the future.

Pascual et al. (2011) state that teachers who support the promotion of devolving responsibility must be,

> able to: (a) create a psychologically and emotionally safe learning environment, (b) establish a positive relationship with participants based on respect, empathy, and caring, (c) foster individual potential and build on participants’ strengths, (d) facilitate empowerment and autonomy, (e) help participants gain confidence to accept challenges and set goals, (f) act with coherence and sincerity (role model), and (g) demonstrate mastery of physical activity content and the ability to integrate this with experiences that foster personal and social responsibility (p. 501).

Allied to this, individual participants should have ample opportunity to work with others in a variety of roles. An integral feature of much participation in physical activities is group work in both cooperative and competitive situations. The nature of different roles, such as leadership, need to be explored, experienced, and reflected upon. Curriculum models such as Sport Education (Siedentop, 2002) encourage devolving responsibility and, therefore, should be a significant part of the curriculum.

Key Principle 7: Using Feedback/Charting Progress as a Motivational Tool

The nature of feedback to learners and the manner in which it is given are both very influential in fostering motivation, confidence, and physical competence. The question here is, how can charting

progress be configured to ensure that any feedback has a positive impact on an individual's physical literacy progress?

As indicated earlier in this study, mastery and autonomy are perceived as being significant in relation to motivation, relative to the self-determination model (Deci & Ryan, 1985, 1991). Providing positive feedback based on competence (mastery) was shown to encourage optimal intrinsic motivation from students in relation to their continued engagement in physical activity (Mouratidis, Vansteenkiste, Lens, & Sideridis, 2008). Therefore, judgments made should be individualized, criterion referenced, and ipsative (related to previous judgments) in nature. Comparison with others is irrelevant given that concern is with charting an individual's journey and their increasing mastery.

Judgments should reveal changes in a physical literacy journey and should be used as a guide toward future challenges. When learners are involved in coconstruction of assessment task and criteria, along with self-assessment and presenting evidence of their learning, it is argued by Davies (2007) that they learn more and become more motivated. Feedback and feedforward, in this context, allow judgments to identify progress in an individual's physical literacy journey and enable individuals to look ahead with confidence to their next goals or objectives. Keeping in line with the philosophical basis of physical literacy, judgments made should, therefore, be relevant to changes in behavior in relation to motivation, confidence, competence, and knowledge and understanding, and these should be equally valued. To ensure these judgments are valid and will provide future goals and objectives, participants, teachers, and significant others should support the process in the early stages as appropriate. Self-perception of progress by the participant is important, however, judgments are more likely to be secure if both the learner and the teacher are involved.

Recording a journey should support and chart an individual's changing behavior toward engagement in physical activity. A range of qualitative and quantitative methods are likely to be required to gather information that is important to the learner and the teacher. The method for recording a journey should be appropriate to the learner and the teacher involved. Judgments that are recorded should consider all elements of physical literacy equally, catering for participants of all ages, stages, and needs, and being sensitive to the particular cultural characteristics. All judgments should celebrate participation, be specific to the individual, and influence future planning.

While these seven key principles are relevant across the life span, modifications may need to be made for particular learners. For example, approaches for infants, preschool, and early year children are best focused on learning through frequent active play —indoors and outdoors. Offering opportunities to explore a wide variety of resources, both natural and manufactured, helps to develop experimentation and creativity (Zachopoulou, Trevlas, Konstadinidou, & Archimedes Project Research Group, 2006). These learners should be encouraged to play, experiment, and practice alone with peers and alongside supportive and appropriately challenging guidance from carers, other adults, and teachers. As learners become more independent in their learning, they should take increasing responsibility for charting the progress of their physical literacy journey.

Physical Literacy Informed Curriculum Planning

The final question to be asked is, how can learner experiences be planned across the years of schooling to ensure that the content and teaching approach recommendations spelled out here are addressed? Planning physical education curricula is a challenging exercise and has to accommodate a range of situations particular to each school. For example, time allocated to physical education, lesson length, expertise of staff, facilities, tradition, head teacher/ parent expectations, and

extracurricular opportunities all have to be considered. While all these issues, and maybe others, have to be addressed, where the intention is to nurture physical literacy, there are a number of principles that need to be addressed.

There are four key principles that need to be considered. First, a wide range of activities should be covered; second, the time given to a particular activity must be sufficient for meaningful learning to take place; third, opportunities for participant choice should be available at some stage in schooling; finally, provision must be made for further involvement in extracurricular time, on site and off site.

In the section Physical Literacy Informed Content, six movement forms were explained (see Table 1). While it is not always easy to attribute an activity to a movement form, all those activities identified in a movement form share some specific commonalities. For example, all activities in a movement form exhibit similar physical challenges, a shared purpose, and a broadly common context of the activity. Participation in each movement form provides a unique opportunity to, for example, use movement expressively, respond to challenges in the natural environment, work closely with others, set personal targets, or to focus on areas of physical fitness. Further discussion of the value of experiencing work in all forms is presented in Whitehead (2010) in the context of catering for personal aspiration and needs throughout life.

It is suggested that all learners have the opportunity to further their physical literacy journey by participation in activities that cover all six movement forms. Experience of an activity must be of sufficient length to ensure that there is a real understanding of the nature of the activity and its challenges with respect to physical competence. Participants need to have meaningful engagement issuing in real progress and success. A series of short blocks of time seldom have the effect of promoting motivation, confidence, physical competence, or knowledge and understanding. It is argued that these taster courses give learners a brief insight into a wide range of activities, and that the novelty factor is motivating. While both of these benefits may be true in the short term, it is very possible that these assets are rapidly lost. Benefits are soon countermanded by the frustration of very little understanding of, and progress in, the activity. Quick fix, surface learning is seldom meaningful and far from rewarding, with there being little time for catering for individual differences. The solution to the conundrum is to relook at time allocation. Whitehead (2013) proposes that a potential solution to this problem is to ensure that over a 2-year period, significant blocks of time are allocated to one or two activities from each movement form. It is suggested that meaningful learning in fewer activities is likely to have a longer-term benefit to participation than many brief experiences. Thereafter, there might be some choice of activity in curriculum time (Curtner-Smith, 2006). It is also suggested that to ameliorate this lessening of breadth in curriculum time, that a substantial program of physical activities is offered in extracurricular time, on-site and off-site. These extracurricular opportunities would be open for all and focus on participation as well as school representation. This extracurricular provision would provide opportunities for participation in new activities and further involvement in activities covered in curriculum time, as well provide talent development. In addition, it would provide an excellent context in which individuals can select activities and design a pattern of participation for themselves. This decision making would provide a valuable experience in readiness for making choices regarding participation in physical activity in life after school.

Conclusion

This study has set out a range of recommendations across the field of physical education that should support the fostering of physical literacy for all. An appreciation and understanding of physical literacy and its philosophical roots is only a first step on the way to actively promoting physical literacy. The belief and commitment to physical literacy has to be translated into practice with learners if real change is to be affected in achieving the goal of lifelong participation in physical activity. The challenge for physical literacy advocates is to describe and demonstrate what physical literacy informed practice is and looks like without being overly perspective and restrictive. This is important if physical literacy is to remain a guiding approach rather than a "thing" that children get "taught." More research in relation to what physical literacy is in practice is required to provide a narrative from the perspective of students, teachers, coaches, parents, etc., of what it means to them and how it informs their lives. The physical education profession must also look inward to redefine the value, purpose, and goal of physical education. Only then can it look to combine physical literacy as the fundamental goal of physical education.

Researching the implications that follow from adopting the concept of physical literacy is a crucial stage in establishing physical literacy in schools. Only by adopting appropriate content and aligned teaching strategies can physical literacy be fostered, and its value ascertained. Examples of good practice and the outcomes of this are urgently needed to verify progress and earn credibility. This step needs to be taken before systems of charting progress can effectively verify the potential of physical literacy. A range of proposals have been set out in this study, and all can and should be subject to systematic evaluation. For example, the feasibility and effect of aligning work to the broad philosophical tenets that support physical literacy would be a most worthwhile foci for research. An inquiry into the notion of capacities and movement patterns is needed, and practices that follow from the recommendations of covering a range of movement forms warrant further investigation. In addition, outcomes of a focus on differentiation and devolvement of responsibility to learners should be monitored, alongside the demands that this makes on teachers. Those who strongly advocate physical literacy believe that if procedures similar to those presented in this study are followed, then the physical education profession has huge potential in making a real difference to the future health and well-being of today's learners. In summary, physical education practice that fosters the development of an individual's motivation, confidence, physical competence, and knowledge and understanding will help to promote physical literacy progress. Thus, also aiding the promotion of lifelong engagement in physical activity.

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