

Review

Unpacking the physical literacy concept for K-12 physical education: What should we expect the learner to master?

E. Paul Roetert^{a,*}, Lynn Couturier MacDonald^b

^aSHAPE America, 1900 Association Drive, Reston, VA 20191, USA

^bState University of New York College at Cortland, Cortland, NY 13045, USA

Received 17 February 2015; revised 1 March 2015; accepted 1 March 2015

Available online 13 April 2015

Abstract

The term “physical literacy” is gaining traction in many countries and institutions as a goal for physical education. This paper explores the concept of physical literacy and highlights the foundational work in this area, particularly that of Margaret Whitehead. The relationship of physical literacy to physical education is also discussed with potential ramifications for teachers and learners who adopt physical literacy as the goal of the subject area.

Copyright © 2015, Shanghai University of Sport. Production and hosting by Elsevier B.V. All rights reserved.

Keywords: Outcomes; Physical education; Physical literacy; Standards

1. Introduction

Over the past few years, there has been a growing interest, worldwide, in the concept of physical literacy. In a global environmental scan of physical literacy, Spengler¹ highlighted 10 countries that all recognize physical literacy either explicitly or implicitly in their policies and programs. Seven of these countries ranked within the top 25 for obesity prevalence. In countries such as UK and Canada, a number of new major national programs have been developed to focus on this relatively new concept. Canada may have the most comprehensive adoption of physical literacy and has incorporated the concept into schools, national federations, and its long-term athlete development programs. In fact, physical literacy has been a key component of discussions about how sport, recreation, health, and physical education (PE) can help Canada deal with its growing problems of increased levels of physical inactivity and obesity.²

The notion of physical literacy is not completely new to our society. It has been referred to by a number of authors over the years, but the concept was not systematically developed until early this century.^{3–6} Since that time, a number of different interpretations of the concept of physical literacy have been put forth for consideration. The purpose of this paper is to “unpack” the concept of physical literacy, its role in PE, and the potential ramifications for K-12 teachers and learners.

2. Understanding physical literacy

Margaret Whitehead has provided much of the philosophical foundation for our understanding of physical literacy, starting with her 2001 paper entitled *The Concept of Physical Literacy*.³ In this paper, as well as others to follow, Whitehead explains her strong commitment to the notion that human beings are not made up of two separate aspects “body and mind” (dualist), rather we should perceive the person as a whole (monist), albeit with different dimensions.^{3,7,8} Others have since adapted different definitions and interpretations of the concept to the specific needs of their programs, cultures, and countries. In fact, the US has incorporated physical

* Corresponding author.

E-mail address: proetert@shapeamerica.org (E.P. Roetert)

Peer review under responsibility of Shanghai University of Sport.

literacy into its national standards and grade level outcomes for K-12 PE.⁹ This resource references the definition put forth by Mandigo et al.,¹⁰ stating that physical literacy is “the ability to move with competence and confidence in a wide variety of physical activities in multiple environments that benefit the healthy development of the whole person”.

This definition is very much in line with the United Nations Educational, Scientific and Cultural Organization’s (UNESCO) statement that the outcome of PE is a physically literate young person, who has the skills, confidence, and understanding to continue physical activity throughout the lifespan.¹¹ Whitehead subsequently expanded UNESCO’s definition by describing physical literacy as “the ability to identify, understand, interpret, create, respond effectively and communicate, using the embodied human dimension, within a wide-range of situations and contexts. Physical literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society.”⁴ In Whitehead’s work, physical literacy is a lifelong process — a disposition that allows all individuals to pursue meaningful physical activity throughout their lives, regardless of physical endowment.⁶

3. The role of physical literacy in PE

Several researchers have considered the relationship between physical literacy and PE. Roetert and Jefferies,¹² in reviewing definitions of physical literacy, concluded that PE develops physical competence so that all children can move efficiently, effectively, and safely and understand what they are doing. The outcome, physical literacy, is an essential basis for children’s full development. Whitehead recognized that there may be some confusion concerning the relationship between physical literacy and PE and stated that physical literacy is not an alternative to PE, nor is it in competition with PE. PE is a subject area in the school curriculum while physical literacy is the goal of PE, a goal that can be articulated and defended with confidence to reveal the intrinsic value of physical activity.⁵

Margaret Talbot,¹³ in a presentation at the SHAPE America National Convention and Expo, reinforced this perspective, stating the outcome of PE is a physically literate young person, who has the skills, confidence and understanding to continue participation in physical activity throughout the lifespan ... PE should be recognized as the basis of an inclusive civic participation continuum over the full lifespan.

These researchers identify and acknowledge that physical literacy is the goal of PE. As such, it serves as the target of instruction for teachers and contributes a critical aspect to educating the whole child.⁵ Furthermore, the philosophical grounding (monist) of physical literacy validates embodiment as an important subject of study, with PE being the only content within schools that provides a structure for students to learn about this significant human dimension.⁶ From a practical standpoint, the concept of physical literacy helps teachers articulate to learners and the general public what PE is trying

to accomplish. It also places PE on a more level playing field with other subject areas such as health, math, and music, which have adopted the term literacy.

4. The content of physical literacy in PE

Whitehead has given considerable thought to the difficult task of determining what content should be taught in PE to help students become physically literate.¹⁴ She identifies the following elements as critical to developing students’ physical literacy in PE programs (p. 56):

1. A positive attitude toward physical activity through having experienced a sense of achievement and enjoyment in the subject;
2. The motivation and confidence to continue active participation in physical activity;
3. Movement competence, commensurate with their physical potential;
4. Experience of a range of movement activities;
5. Realistic self-knowledge and self-awareness enabling them to set appropriate personal goals in respect of physical activity;
6. An understanding of the nature of movement and of the importance and value of physical activity as contributing to a physically active lifestyle;
7. An understanding of how to access physical activity beyond the school.

Whitehead places special emphasis on the importance of movement competency for physical literacy, especially in the basic (or fundamental) movement patterns which are the foundation for more specific movement skills.¹⁴

Teachers have a multitude of physical activities to realize these goals. Murdoch and Whitehead¹⁴ acknowledge the difficulty in making appropriate selections and suggest using groupings of activities with common characteristics, such as “adventure, esthetic and expressive, athletic, competitive, fitness and health, and interactional/relational”. It is likely that some physical activities could belong in more than one grouping, depending on their focus, but that is not really consequential. The essential consideration is for students to engage in activities from all the groupings, providing a breadth of experiences in movement. These groupings provide both structure and flexibility in curriculum offerings, allowing for cultural and geographical relevance in PE programs.

5. Operationalizing physical literacy in PE

SHAPE America, the largest organization of professionals involved in school-based health, PE, and physical activity in the US, has found the arguments for physical literacy compelling. During the recent revision of its national standards and the development of grade-level outcomes, the organization adopted physical literacy as the goal of PE. In previous sets of standards, the goal was “to develop physically educated individuals who have the knowledge, skills, and

To pursue a lifetime of healthful physical activity, a physically literate individual:

- Has learned the skills necessary to participate in a variety of physical activities.*
- Knows the implications and the benefits of involvement in various types of physical activities.*
- Participates regularly in physical activity.*

Fig. 1. Definition of a physically literate individual from the SHAPE America 2014 national standards for K-12 physical education.⁹

confidence to enjoy a lifetime of healthful physical activity”.¹⁵ This decision was made because physical literacy encompasses all the aspects of a physically educated person, with the additional benefits of providing parallel language with other school subjects, a common purpose and strong rationale for PE (Fig. 1).⁹ In addition, it can also be argued that “physically educated” implies a finished product, while physically literate connotes a level of development that can be extended, an ongoing process according to an individual’s interests and capabilities.⁶ This is a noteworthy distinction for a profession that seeks to foster physically active lifestyles throughout the lifespan.

With physical literacy as the goal of PE, SHAPE America revised its national standards to align with the key elements of the new goal (Fig. 2). Since standards are written broadly to

describe competencies at the end of PE, grade-level outcomes were also developed to provide more specific targets for learning throughout the educational process. Fig. 3 is an example of the grade-level outcomes. The grade-level outcomes were grounded in recent scholarly literature in motor development, skill competency, motor learning, physical activity, and student engagement and motivation. Taken together, the goal of physical literacy, the five national standards, and the grade-level outcomes are intended to operationalize the concept of physical literacy and to provide a framework for teachers to use in developing curricula and lesson plans. This framework, which describes a comprehensive scope and sequence, was published in 2014 as the *National Standards and Grade-Level Outcomes for K-12 Physical Education*.⁹ It defines the critical competencies that support the development of physically literate individuals.

The competencies selected for the outcomes for each grade span (elementary, middle school, and high school) reflect their associated stages of motor development (emerging, application, and lifelong utilization, respectively).¹⁶ At the elementary school (grades K–5), the emphasis is on foundational skills, knowledge, and values. Of utmost importance are the fundamental motor skills, which form the basis for competence in movement patterns. Activities at the elementary level focus on motor skills and combinations, dance, gymnastics, and small-sided practice tasks. At middle school (grades 6–8), the emphasis is on application of foundational skills, knowledge, and values acquired in elementary school, with particular attention to developmental changes associated with puberty (e.g., enhanced capability for abstract thought, increasing importance of peer relationships with peers, and physical differences related to gender). The middle school outcomes take advantage of these changes by applying

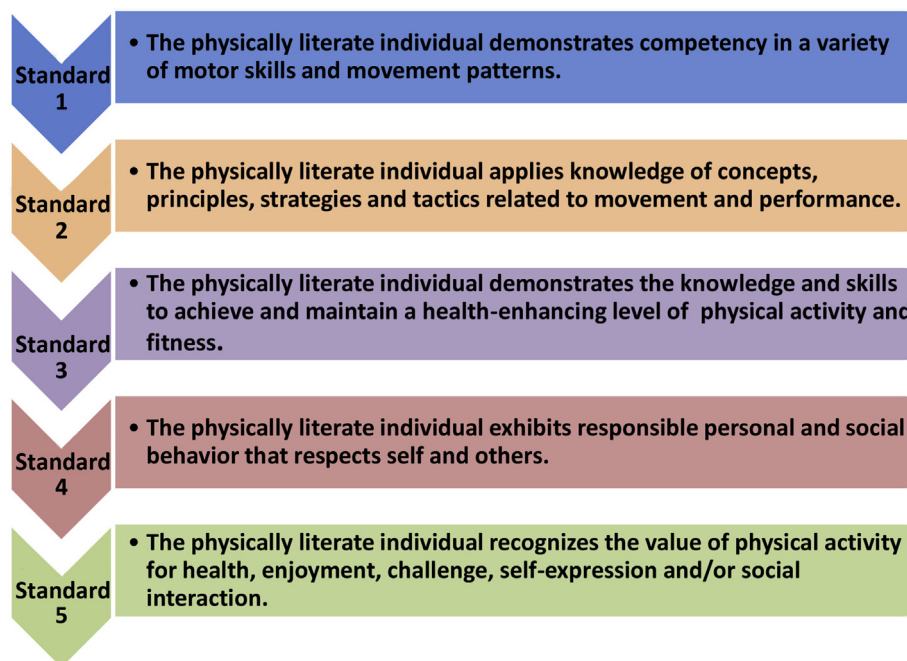


Fig. 2. 2014 national standards for K-12 physical education.⁹

Standard 2	Grade 6	Grade 7	Grade 8
S2.M8 <i>Net/Wall games</i> <i>Using tactics/shots</i>	Reduces offensive options for opponents by returning to mid-court position (S2.M8.6)	Selects offensive shot based on opponent's location (hit where opponent is not) (S2.M8.7)	Varies placement, force, and timing of return to prevent anticipation by opponent (S2.M8.8)
S2.M9 <i>Target games</i> <i>Shot selection</i>	Selects appropriate shot/club based on the location of the object in relation to the target (S2.M9.6)	Varies the speed and/or trajectory of the shot based on location of object in relation to the target (S2.M9.7)	Varies the speed, force and trajectory of the shot based on location of object in relation to the target (S2.M9.8)
S2.M10 <i>Fielding/Striking games</i> <i>Offensive strategies</i>	Identifies open spaces and attempts to strike object into that space (S2.M10.6)	Uses a variety of shots to hit to open space (slap & run, bunt, line drive, high arc, etc.) (S2.M10.7)	Identifies sacrifice situations and attempt to advance a teammate (S2.M10.8)
S2.M11 <i>Fielding/Striking games</i> <i>Reducing space</i>	Identifies the correct defensive play based on the situation (e.g., number of outs) (S2.M11.6)	Selects the correct defensive play based on the situation (e.g., number of outs) (S2.M11.7)	Reduces open spaces in the field by working with teammates to maximize coverage (S2.M11.8)
S2.M12 <i>Individual performance activities, dance and rhythms</i> <i>Movement concepts</i>	Varies application of force during dance or gymnastic activities (S2.M12.6)	Identifies and applies Newton's Laws of Motion to various dance or movement activities (S2.M12.7)	Describes and applies mechanical advantage(s) for a variety of movement patterns (S2.M12.8)
S2.M13 <i>Outdoor pursuits</i> <i>Movement concepts</i>	Makes appropriate decisions based on the weather, level of difficulty due the conditions, or ability to ensure safety of self and others (S2.M13.6)	Analyzes the situation and makes adjustments to ensure the safety of self and others (S2.M13.7)	Implements safe protocols in a self-selected outdoor activities (S2.M13.8)

Fig. 3. Sample of middle school grade-level outcomes for standard.⁹

concepts, tactics, strategies, and responsible personal and social behaviors (as well as skills) in modified games and sports, fitness, and other physical activity groupings (outdoor pursuits, individual performance activities, dance and rhythms, and lifetime activities).

The high school outcomes center on lifetime physical activities, knowledge, and values. Lifetime activities include the same groupings as middle school, but with fewer selections in games and sports. Specifically, invasion games are not part of the high school outcomes due to their limitations as lifetime activities while fielding/striking games are left out because they lack sufficient levels of moderate-to-vigorous physical activity. In the high school outcomes, special emphasis is placed on fitness and physical activity program planning as well as self-management skills to prepare students for participation in adulthood.⁹

The structure of the SHAPE America curriculum framework is very much aligned with the guidance offered by

Murdoch and Whitehead.¹⁴ The framework adopts physical literacy as its goal, establishes broad aims (or standards) to support that goal, and organizes the instructional content used to meet that goal into movement categories. However, the SHAPE America framework has taken an additional step in establishing grade-level outcomes in order to provide more details to teachers. Finally, the framework makes clear through the grade-level outcomes that the development of skill competency is of the highest priority to further students' progress toward physical literacy, echoing the words of Whitehead.^{9,14}

6. Ramifications for K-12 teachers and learners

There are many potential ramifications for teachers and learners in adopting physical literacy as the goal of PE. For teachers, it should not come as a surprise that actualizing physical literacy means implementing highly effective instructional strategies. For example, in order to help students

fulfill their embodied potential, teachers will need to foster a mastery-oriented climate in their classrooms. A mastery-oriented climate includes:

- Creating deliberate practice tasks that challenge and engage students;
- Maximizing the number of practice opportunities by using modified and small-sided practice tasks/games, limiting competition, and scoring tasks/games based on success in the learning objectives;
- Spending sufficient time in deliberate practice to ensure acquisition of skill;
- Differentiating instruction by ability grouping, planning for task extensions and refinements, modifying space and/or equipment, and teaching by invitation;
- Including systematic assessment to track individual student learning.

These practices facilitate the development of movement competency, are inclusive of all students, and reduce the likelihood of disengagement in PE.⁹

Teachers may also need to alter the content they teach, particularly if they are currently using a competitive sport model as their curriculum for secondary level students. Physical literacy necessitates teaching a broad spectrum of movement activities from multiple categories and not relying on a team sport model that appeals to only the highly skilled and competitive students. The content should minimize opportunities for social comparisons among students, which are potentially embarrassing, by decreasing competition and focusing on individual effort and progress. It should also help move students toward independent participation in physical activity throughout the lifespan. In the early grades, the curriculum should be focused on fundamental movement skills and combinations that are applied in specific games, sports, and physical activities in later years.^{6,9}

Learners are also impacted by a shift to physical literacy in PE. Whitehead⁶ sees the primary change as a different relationship between learners and teachers that can be summarized as respect for the learner. Teachers must respect the individual interests, capabilities, and progress of each student as they move along the lifelong path of physical literacy. This respect can be seen when teachers implement responsive instructional strategies such as those listed above; avoid putting students “on display” or in situations where students are compared with one another; and when teachers show genuine caring for individual student’s circumstances. With physical literacy as the focus, students will learn more about numerous aspects of their embodiment and become competent in meaningful movement activities.

7. Conclusion

The adoption of physical literacy as the goal of PE presents a powerful opportunity for the profession. It allows us to unify behind a vision of who we are and what we do. In the past,

PE’s message has been fractured by disparate conceptions of its purpose and meaning. The vision, physical literacy, upholds the value of studying embodiment in schools as an essential element of being human; provides support for a holistic education; and allows us to educate others about our mission with greater clarity. Physical literacy allows for an integration of a sound philosophical position with current scholarship from the sub-disciplines in our field and best practices in teaching. Perhaps most importantly, it addresses the needs of all learners in the dimension of embodiment.

PE has been remarkably resistant to change over the years. Despite the best efforts of many professionals and university teacher education programs, many PE programs seem unaffected by developments in the field.¹⁷ Far too many programs are stuck in a model that does not support genuine learning or the needs of most students. “Unpacking” physical literacy helps us define what learners really need to master and may help the profession achieve the coherence and rigor needed to be relevant in schools.

References

1. Spengler JO. *Physical literacy global environmental scan*. Aspen Institute paper. 2014.
2. Higgs C. Physical Literacy: two approaches, one concept. *Phy Health Educ* 2010(Spring).p.6–7.
3. Whitehead M. The concept of physical literacy. *Eur J Phy Educ* 2001;6:127–38.
4. Whitehead M. The history and development of physical literacy. *ICSSPE Bull* 2013;65:21–7.
5. Whitehead M. Definition of physical literacy and clarification of related issues. *ICSSPE Bull* 2013;65:28–42.
6. Whitehead M. What is physical literacy and how does it impact on physical education? In: Capel S, Whitehead M, editors. *Debates in physical education*. London: Routledge; 2013.p.37–52.
7. Whitehead M. Meaningful existence, embodiment and physical education. *J Philos Educ* 1990;24:3–14.
8. Whitehead M. Physical literacy. In: *AIESEP Conference*; October 26, 2010. <http://physicalliteracy.org.uk/whitehead-spain-2010.php>.
9. Society of Health and Physical Educators. *National standards and grade-level outcomes for K-12 physical education*. Champaign, IL: Human Kinetics; 2014.
10. Mandigo J, Francis N, Lodewyk K, Lopez R. Physical literacy for educators. *Phys Educ Health J* 2012;75:27–30.
11. UNESCO. *The plurality of literacy and its implications for policies and programmes*. Position paper. Paris, France: UNESCO Education Sector; 2004. <http://unesdoc.unesco.org/images/0013/001362/136246e.pdf>.
12. Roetert EP, Jefferies SC. Embracing physical literacy. *J Phy Educ Recreat Dance* 2014;85:38–40.
13. Talbot M. In: *Physical literacy symposium*. Presented at the AAHPERD National Convention, St. Louis, MO; April 3, 2014.
14. Murdoch E, Whitehead M. What should pupils learn in physical education? In: Capel S, Whitehead M, editors. *Debates in physical education*. London: Routledge; 2013.p.55–73.
15. National Association for Sport and Physical Education. *Moving into the future: national standards for physical education*. 2nd ed. Reston, VA: National Association for Sport and Physical Education; 2004.
16. Gallahue D, Ozmun J, Goodway J. *Understanding motor development: infants, children, adolescents, adults*. New York: McGraw-Hill; 2012.
17. Capel S, Whitehead M. What is physical education? In: Capel S, Whitehead M, editors. *Debates in physical education*. London: Routledge; 2013.p.3–21.