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# Physical Literacy (Mis)understandings: What do Leading Physical Education Teachers Know About Physical Literacy?

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Physical literacy is a term and concept that has, in recent years, been gaining in both usage and popularity in many physical education (PE) contexts. However, discussion, writing, and understanding of physical literacy have been marked by uncertainty, confusion, or resistance. Since physical literacy can be found in several curricular documents and outcome statements, it would certainly be ideal for PE teachers to share a common understanding. This article reports on a qualitative case study in which 12 lead PE teachers from four Canadian provinces were interviewed, the purpose of which was to acquire knowledge about PE teachers' understanding of physical literacy. Results suggest that these leaders are largely unable to articulate conceptions of physical literacy that are in line with contemporary perspectives. In light of these findings, a discussion about these physical literacy (mis)understandings is also offered.

**Keywords:** case study, curriculum, teacher education

## Physical Literacy: Origins and Conceptions

The term physical literacy was first introduced into the physical education (PE) literature almost 80 years ago. At that time, the United States' National Physical Education Service of the National Recreation Association (1938) introduced an expression that was, until then, never shared—at least not openly within a peer-reviewed PE forum. In the years that immediately and subsequently followed this introduction, physical literacy failed to gain traction within the PE community and consequently also failed to generate any serious attention, action, or influence. Fast forward well over half a century from that 1938 publication and Whitehead (2001) reintroduced the term, offering a much more persuasive and comprehensive account of what physical literacy might come to mean and offer.

## What is Physical Literacy?

Initially, Whitehead (2001) identified four principal influences that motivated her for the development of the concept of physical literacy: the existential and phenomenological writings suggesting the fundamental centrality of embodiment in human existence, the

displacement of a focus on movement development in children, the developing widespread unease related to the inactivity of the general population, and a growing dissatisfaction with school-based PE programs. One of the first times Whitehead (1993) used the term physical literacy, she described the concept as “the development of an articulate liaison with the world” (p. 6). In the ensuing years, Whitehead offered several updated explanations of physical literacy (Hyndman & Pill, 2017; Whitehead, 2005, 2007, 2010a, 2013a). For example, one of Whitehead's (2010a) subsequent definitions of physical literacy was as follows: “As appropriate to each individual's endowment, physical literacy can be described as the motivation, confidence, physical competence, knowledge and understanding to maintain physical activity throughout the lifecourse” (p. 5).

Most recently, Whitehead (2016) championed the International Physical Literacy Association (IPLA) definition: “physical literacy is the motivation, confidence, physical competence, knowledge, and understanding to value and take responsibility for engagement in physical activities for life” (ParticipACTION et al., 2015, para. 3). It is also especially noteworthy, particularly to those within Canada, that this most recent definition has been adopted by those who coauthored Canada's Physical Literacy Consensus Statement (ParticipACTION et al., 2015). With this most up-to-date conception, Whitehead further suggested favorable outcomes made possible by a physical literacy orientation. These are related to identifying the intrinsic value of physical activity, overcoming the need to justify physical activity as a means to an end, and justifying the notion that physical activity is for all abilities. Canada's application of this new definition also includes four essential and intertwined elements: affective (motivation and

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confidence), behavioral (engagement in physical activities), cognitive (knowledge and understanding), and physical (physical competence). In presenting the four elements, it should be noted that Whitehead does not recognize behavioral as a fourth element.

## Can There be One Definition Understood by All?

Whitehead (2010a) is certainly aware of others' varying interpretations of the term physical literacy (e.g., see Edwards, Bryant, Keegan, Morgan, & Jones, 2017; Jurbala, 2015). In fact, she has responded to this observation by emphasizing, "each of these interpretations of physical literacy is of value in that each picks out an element of the concept; however, none encompasses the totality of the meaning of being physically literate" (p. 7). Herein it is suggested, however, that without attention to and an understanding of physical literacy's foundations in monism, existentialism, and phenomenology, the sum of these parts does not necessarily capture the whole of what Whitehead imagines.

Physical literacy was founded upon a commitment to the belief in monism and the acceptance that one's embodiment can be expressed both instrumentally (as an object) and as lived (Robinson & Randall, 2017; Whitehead, 2001, 2005). Whitehead (2010b), in the wake of still deeply-rooted dualistic views of the human condition, noted the need for further clarification of a monist perspective on human existence:

A monist position rejects dualism with its contention that a person comprises two separable parts: the "body" and the mind, with the "body" viewed as an object inferior to the mind. Furthermore, dualism sees little value in "bodily" activity per se, other than sustaining existence and thereby prolonging the life of the mind ... Designating our embodiment as purely an object or a machine is unacceptable and insensitive, disregarding and trivialising a key dimension of ourselves ... the person is first and foremost one entity and descriptions of different aspects of a person are isolating specific characteristics of human beings which, in fact, are not "free-standing" but are part of an intricately integrated entity. (p. 22)

Embodiment as lived is a human dimension and, as such, affects and is affected by all other dimensions of humanness. Both Whitehead (especially in her earlier works) and the IPLA (especially where and as it complements Whitehead) have taken a view of physical literacy that embraces some of these foundational complexities. However, these foundational complexities are not always recognized and/or understood by others. For example, though Whitehead begins with foundational monistic beliefs related to physical literacy, others have designed and/or implemented physical literacy assessments that focus almost exclusively upon psychomotor skills, in an entirely dualistic manner (Giblin, Collins, & Button, 2014). Similarly, while Whitehead acknowledges that developing physical competence (among other things) is an aspect of physical literacy, others have fixed their gazes almost exclusively upon movement competence and have consequently labeled some as incompetent in the process (i.e., an evaluation mechanism that categorizes some as competent necessarily also categorizes some as incompetent; McCaffery & Singleton, 2013). Moreover, many of these assessments seem to be narrowly focused upon fundamental movement skills (FMS) rather than upon movement competence.

So, is there one definition understood by all? Certainly not. Can one definition be understood by all? Possibly. Should all PE teachers be familiarizing themselves with Whitehead's and the IPLA's "brand" of physical literacy? Certainly.

## Relevant Literature Related to Understanding Physical Literacy

Recent physical literacy scholarship across international and national jurisdictions has been primarily directed toward the exploration and refinement of various understandings and interpretations of the concept (e.g., ICSSPE Bulletin No. 65, October 2013), the development and testing of valid and reliable measures (Longmuir, 2013; Lounsbery & McKenzie, 2015), and adding to the growing body of researcher commentary (Jurbala, 2015; Tremblay & Lloyd, 2010) and critique (McCaffery & Singleton, 2013; Robinson & Randall, 2017). In many ways, these efforts have served to fuel a complex and controversial discourse, all of which underpin a field of study that is observably in its infancy (Longmuir & Tremblay, 2016; Lounsbery & McKenzie, 2015).

While researchers and theorists continue to concretize the concept, PE teachers have, in many cases, relied upon policy-makers' interpretations of physical literacy. Dudley (2015) noted that many Organization for Economic Co-operation and Development nations make specific reference to physical literacy development in relation to the use of PE-focused curriculum models. This may have further confounded teachers' efforts to understand the concept as the use of "any one of these models alone cannot support the multidimensional ... and interactive nature of the physical literacy construct, which has yet to be effectively articulated in a manner that has facilitated its application for effective pedagogical or assessment purposes" (Dudley, 2015, p. 237). Indeed, physical literacy is not a curriculum model.

Others have directed attention toward a review of the emerging body of physical literacy research. Lundvall (2015), having conducted an explorative literature review of peer-reviewed publications with a focus on physical literacy, highlighted findings that suggested developing a common understanding is important. Shaping this new understanding in K-12 students will require teachers and teacher candidates to have clear understandings of the concept. Lundvall drew attention to the need for reforms to Physical Education Teacher Education (PETE) to ensure PE teachers are prepared for the concrete planning that will be necessary to meet the emerging learning outcomes associated with physical literacy.

The emerging body of physical literacy scholarship has shaped a theoretical foundation upon which conceptualizations and discourses are based. Whitehead (2013a) has continued her efforts to clarify the concept while acknowledging the confusion that exists around the relationship between PE and physical literacy:

There is some confusion concerning the relationship between physical literacy and physical education. However, physical literacy is not an alternative to physical education nor is it in competition with physical education. Physical education is a subject area in the school curriculum while physical literacy is the goal of physical education, a goal that can be articulated and defended with confidence to reveal the intrinsic value of physical activity. (p. 32)

In the Canadian context, where the concept has taken root across a variety of sectors (e.g., education, recreation, and sport), early policy-based interpretations of physical literacy led to misapplied and simplified understandings of Whitehead's conceptualizations. As noted by Jurbala (2015),

In Canadian policy, definitions appear to be drawn from ones popularized by CS4L or Physical and Health Education Canada . . . Policy statements are typically aspirational and use a justification logic emphasizing the instrumental benefits of enhanced PL without providing a detailed understanding of how or why PL-supportive programs are different. This may leave the impression that PL is a term interchangeable with “physical activity” or “physical fitness.” (p. 373)

It is also important to note that while a Canadian consensus has been (somewhat) achieved, this occurred well after curricular and institutional policies were founded upon earlier conceptions of physical literacy, conceptions that when introduced blurred PE teachers' understandings of both physical literacy and PE. Indeed, many physical literacy resources, initiatives, and programs were introduced to PE teachers well before the IPLA consensus definition was achieved (as well as before others provided their own interpretations of it).

In Corbin's (2016) commentary on physical literacy for research and practice, he highlighted the advanced progress made by many Canadian organizations as a potential way forward to clarify understandings associated with characteristics of the concept contextualized to particular jurisdictions. While congruency across international jurisdictions has yet to be achieved, future forward, a shared single definition in the Canadian context may provide the impetus for more researchers to further examine the impact of this localized consensus on PE teachers' understanding of the concept and its associated role and benefits across education, sport, and recreation sectors.

Still, and despite its influence as an emerging concept in PE, little is known of PE teachers' understandings of physical literacy. This is due, in part, to a paucity of research examining teachers' and/or teacher candidates' understandings of physical literacy and/or how such understandings of the concept agree with emerging and/or established PE pedagogical practices. To some whose work focuses upon preparing PE teachers, possessing a clear understanding of physical literacy has been positioned as crucial in helping teacher candidates become better teachers of PE (Taplin, 2013). Likewise, some PETE program revision efforts have situated the concept early and often throughout teacher education training (Newton & Bassett, 2013).

After noting the uncertainty and confusion that exists in the literature around various terms associated with PE (e.g., PE, health and PE, physical literacy, and health literacy), Lynch and Soukup (2016) investigated whether this confusion also exists among teachers. Using SHAPE America's Exchange online platform, they posted the following question to their open discussion board: “Can we promote HPE [health and physical education] as a strong combination or will it be at the expense of either health or PE?” In their responses, participants provided answers suggesting that they saw physical literacy as a view of PE (rather than a separate concept). They also demonstrated unclear understandings of physical literacy by, for example, adopting the term while also seemingly ascribing to a body-as-object (dualist) philosophy. In their summary, Lynch and Soukup indicated that “the data suggest that practitioners are confused” (p. 18) and “immediate clarity is needed” (p. 19).

Stoddart and Humbert (2017) also looked closely at teachers' understanding of physical literacy. Working with generalist teachers (rather than PE specialists), they found that teachers were confused, and their physical literacy understandings were simplistic or misguided. They concluded that additional attention is needed to address the physical literacy confusion among generalist teachers if they are to help their students develop physical literacy across their life span.

Finally, in response to one Canadian provincial education authority's early adoption and inclusion of physical literacy into newly revised curricular policy documents, Tristani (2014) sought to examine teacher candidates' understanding of physical literacy. In Tristani's study, it was found that new teachers possessed a poor understanding of the concept. This poor understanding was attributed, in part, to a lack of clarity in the definition and explanation of the concept within PE curricular policy documents. Moreover, evidence gleaned from this study highlighted curricular tensions and time constraints as factors impacting the depth and breadth of PETE explorations of physical literacy in teacher training.

Given physical literacy's burgeoning popularity and a belief about the importance of Whitehead's, the IPLA's, and Canada's conceptions of physical literacy being understood by PE teachers, provincial lead PE teachers were invited to participate in a qualitative case study in which they were interviewed about their understanding of physical literacy. This initial exploratory investigation allowed for a consideration of what lead PE teachers think and know about a concept that has become increasingly central to their work. The primary research question was as follows: “How do Canadian provincial PE leaders define and understand physical literacy?”

Though previous studies tell us something about teachers' physical literacy understanding, these findings are either (a) from an online forum rather than from a research process; (b) related to generalist teachers only (rather than to PE specialists or PE teacher leaders); or (c) related to preservice PE teachers (i.e., teacher candidates). In light of these observations, this research has the potential to tell us more about teachers' (specifically, PE teachers' and PE teacher leaders') understanding of physical literacy. Lead PE teachers are most likely to mentor new and beginning PE teachers just as they are more likely to offer professional development within their provinces (e.g., through their own required involvement in annual professional development days). They have the potential to influence large numbers of their peer PE teachers. Thus, it becomes especially important that we know what they understand about physical literacy. Such information is particularly important to those who hope to see physical literacy become normalized in such a way that it becomes more central to the teaching and learning of PE.

## Methods

This research employed a qualitative case study design, whereby data were gathered to enable a “description and analysis of a bounded system” (Merriam, 2009, p. 40). Stake (1995) has suggested that qualitative case studies enable researchers to more deeply understand a case while also appreciating that a case is unique and embedded in context. In this case study, the aim was to be especially mindful of these two points—uniqueness and contextual embeddedness. So, rather than aiming for statements of generalizability, from the outset, it was recognized that the research results would largely be specific to, and dependent upon, the unique Canadian context.

## Participants

A total of 22 potential participants (all current executive members of four provinces' PE specialist councils) were invited to participate in this research. Of these 22, 10 current executive members volunteered to participate; an additional two former executive members also volunteered to participate. These 12 participants were quite evenly distributed across the four provinces (i.e., 4, 3, 3, and 2). This purposeful sampling (Creswell, 2005) would be described as critical sampling (Patton, 2002); participants who might best be able to illustrate the provincial situation were chosen. That is, these 12 participants were all current or past executive members from four provincial professional PE teacher associations. In this sense, they have been identified as lead PE teachers within their provinces. With respect to this leader label being given to these participants, note the following: they are elected by their own specialist councils' members (i.e., their peers who also teach PE), they organize and offer province-wide professional development, and they represent all PE teachers in their provinces (e.g., at national PE meetings). In all, there were six presidents or past presidents, three current or former vice presidents, and three other current or former executive members. All participants were, at the time of the research, PE teachers or PE instructional leaders (e.g., department heads or consultants).

## Focus Group Interviews

Barbour (2005) contends that focus groups give participants the sense that they can effect change as their voice is fully heard and developed in the group. The intent of bringing people together was so that they could build upon one another's knowledge and experience (Merriam, 2009). Indeed, the purpose was "to get high-quality data in a social context where people can consider their own views in the context of the view of the others" (Patton, 2002, p. 386).

Eight online focus group interviews were conducted. More specifically, four separate focus groups each participated in two online group discussions. The length of each of these eight interviews ranged from 62 min to 133 min. Four focus groups, interviewed twice each, allowed for the gathering of "a variety of perspectives and increase[d] confidence in whatever patterns emerge[d]" (Patton, 2002, p. 385). Two sessions were conducted (rather than one) so as to be respectful of the participants' time. Also, topics were purposely not revisited at the second session.

Focus groups are not used to develop consensus but, rather, provide a forum for shared discussion around a topic. Since focus group interviews provide a nonthreatening environment where different views can be shared and where "interactions among participants enhance data quality" (Patton, 2002, p. 386), the small focused discussions provided a comfortable space where participants could share and respond to others' ideas, openly admit confusion if and/or where it existed, and clarify and expand upon their own understanding and experiences after hearing the responses of others.

To participate in the focus groups, participants were provided with a link to a private course shell in a learning management system (Collaborate). The online discussion provided audio capabilities only. Online focus groups can be limiting in that it may be easy for certain voices to be silenced by the dominance of another or if the participant feels her or his contribution runs contrary to the discussion. To combat this limitation, and as suggested by Patton (2002), two researchers were present during all discussions, moderating the discussion and inviting comments on all questions from each participant.

Examples of the physical literacy-related guiding questions for the online focus group interviews include: (a) Are you aware of the term "physical literacy" and if so what is your understanding of the term/concept?; (b) What do you see as the difference, if any, between being physically educated and being physically literate?; (c) Since Physical and Health Education Canada adopted the notion of becoming physically literate as opposed to physically educated, has your program changed at all? If so, how?

## Data Analysis

The online focus group interviews were transcribed verbatim. Searching for commonalities, original insights, and patterns, participants' responses were read multiple times while elements were coded into categories by the primary investigator. Once confident with these initial codes and categories, and to ensure trustworthiness, all applicable statements were then coded by a second researcher to determine the degree of agreement. These two researchers engaged in several conversations about different coding results until a 100% agreement on all coded statements was achieved. This process required a small number of coded statements to be discarded or combined. By coding and categorizing the data per methods and processes outlined by Creswell (2012) and Miles and Huberman (1994), dominant themes were identified and developed, allowing for subsequent analysis and interpretation.

## Results and Specific Discussion

The analysis of the collected data yielded four themes that best describe these PE leaders' understandings of physical literacy. Below, these themes are presented with supporting evidence taken directly from the interview transcripts. These themes have been categorized as: (a) physically literate means (almost) the same thing as physically educated, (b) physical literacy means moving in many ways and places, (c) physical literacy means knowing the language of movement, and (d) physical literacy means FMS.

### Physically Literate Means (Almost) the Same Thing as Physically Educated

There is widespread confusion concerning the relationship and/or differences between PE and physical literacy in the research literature (see Almond, 2016; Corbin, 2016; Lounsbury & McKenzie, 2015; Lynch, 2016; Lynch & Soukup, 2016; Whitehead, 2013a). As Corbin (2016) observed, the lines of demarcation that distinguish being physically literate from being physically educated are blurred. Physical literacy is used as an outcome of PE and a justification for PE (Tremblay & Lloyd, 2010), a term for gaining academic credibility for PE, and an apparent synonym for PE.

Given these observations, it should not be surprising that there is such confusion among lead PE teachers as well. The following four quotes support this observation: "Sometimes in my cynical way of thinking, [I] thought it was almost like the rebranding of physical education by using the term physical literacy or being physically literate. I struggle with this sometimes" (Participant 1A) and "Yeah I don't see a major difference between the two terms. More so on being physically literate is being on the end of more understanding of the skills or activity or sport but they almost go

hand and hand with being physically literate and being physically educated” (Participant 2D). Two other participants offered the following responses:

I don’t see a major difference [between physically literate and physically educated]. If you are physically educated you should be physically literate. I think physical literacy is a new way of introducing new terms or highlighting a certain aspect of the physical education I am guessing. That is the main difference. Often you had to be physically literate to be physically active and not so much but I guess you can have a little understanding with the students, you need that but, in general, sometime I guess it just happens. (Participant 2A)

I am not sure if there is a difference between them but based on what [Participant 2B] said and got my mind going, maybe if somebody who was physically educated is maybe going to do things a little better than what somebody would be who is maybe physically literate? I am not sure if that would be a difference between the two of them. I am taking a stab at it. If there is a difference I am not really sure. (Participant 2C)

The participants quoted above clearly see no difference between physical literacy and PE. This is hugely disturbing and potentially harmful. If PE teachers cannot distinguish between the terms, they risk the allure of justifying their subject area simply by changing its name to include an aspect of the curriculum that is traditionally more valued—namely literacy. Indeed, Whitehead (2013b) has addressed this very issue:

The adoption of the notion of “literacy” in the field of physical activity is not designed to give academic respectability or credibility to this human capability, but rather to highlight its educational validity as part of a liberal education that recognizes all our human capabilities and potentials as of equal importance and value. (p. 26)

Moreover, to combat this reductionist thinking, Whitehead has also repeatedly presented and published papers in which she attempted to clarify the differences between the two terms. The concept of physical literacy, as described and developed by Whitehead, provides justification for the crucial role that movement plays in helping all humans reach their full potential. People develop as unique individuals, and become who they are, as a result of the interactions they have with the world and the ways in which each interaction is interpreted. There are several ways to interact with the world and the embodied dimension is one very powerful way. Human potential is developed and enriched through the provision and experiences of movement within the world. The quantity and quality of movement experiences can thus contribute to a person realizing her or his potential and living a full and rich life. The concept of physical literacy essentially justifies why PE should be considered an important part of all children’s lives, not an afterthought in the curriculum or something that is done when there is extra time in the school day. PE teachers need to understand this important aspect of physical literacy and be able to distinguish it from PE.

Physical literacy is not only different than PE but also presents no threat to PE. Physical education is a specific course of study within the school curriculum. It is the name of a designated area of learning—the name of a subject area. Physical literacy is a goal of PE. The role of the PE teacher in promoting students’ physical literacy is to provide a wide variety of appropriately structured

activities across a variety of environments and varying movement domains that meet the needs of all. When done in a way that caters to each learner’s individual development and personal abilities, students come to value and enjoy moving. They become enabled to develop a favorable disposition toward activity and value the contribution movement makes to enhancing their lives (not just their overall health) and, as such, willingly choose to engage in various activities throughout the lifecourse.

## Physical Literacy Means Moving in Many Ways and Places

The original abridged definition of physical literacy put forth by Physical and Health Education Canada stated, “individuals who are physically literate move with competence *in a wide variety of physical activities* [emphasis added] that benefit the development of the whole child” (Mandigo, Francis, Lodewyk, & Lopez, 2009, p. 28). Early writing, presentations, documents, and websites repeated phrases such as “demonstrate a variety of movements . . . across a wide range of health-related physical activities” (Physical and Health Education Canada, n.d., p. 1) and “children should learn fundamental movement skills in and around water, on ice or snow, and they should learn to control their movements in the air, typically when jumping” (Coaching Association of Canada, 2011, p. 2). This understanding and promotion of varying environments are both inaccurate and incomplete, and unfortunately were loud and popular enough to have resonated with the participants. The quotes below demonstrate the impact of these early messages on PE teachers’ understanding of physical literacy.

Physical literacy for me would mean, it is just providing the students with the opportunity to experience as many different ways to move, as many different environments indoors or outdoors, ice or snow all of that stuff and . . . where students in a way where they are doing skills that are developmentally appropriate for their age and not rushing them ahead and not trying to specialize in anything. (Participant 1B)

I think I am a little bit more aware, I don’t know if aware is the right word but try to provide all different kinds of opportunities for the kids to explore games either indoors or outdoors. Certainly, there are other areas that are more difficult to go in the water, physical education programs. It has made me aware of the philosophy, taking the kids and see how that looks as well. I think that is a big part of my program now. (Participant 1A)

Early writing and presentations stressed variety in both the acquisition of various movements and movement across a variety of environments (e.g., water, snow, ice, and air). Although an incomplete understanding of physical literacy is presented by the participants above, it is encouraging that these PE leaders are, at least, hearing or reading about physical literacy and attempting to respond with appropriate programming. The participants’ responses suggest that they have made changes to their program by offering more variety, being more aware of developmentally appropriate activities, and expanding the environments in which they teach (indoors and outdoors).

Varying environments provide different challenges for students to develop movement competence. Developing physical competence requires that students experience a broad and balanced range of movement capacities and movement patterns. As students

learn and begin to effectively use various movement patterns and combinations of movement patterns, the patterns become more entrenched and eventually can be executed automatically. As the availability of a repertoire of movement patterns grows, students can readily and increasingly respond to new challenges with confidence. For this to occur, it becomes essential that students be provided with experiences in a wide range of physical activities, so their movement patterns can be practiced, developed, combined, refined, challenged, and expanded. The range of potential activities students could be exposed to is too vast for all to be included in the school curriculum, but a broad and balanced range of activities is essential.

Still, introducing students to varying environments goes much deeper than simply identifying a location (like outdoors or on ice) and a corresponding activity to be completed in that location (Murdoch & Whitehead, 2010). To ensure students experience breadth and a balanced range of activities, Murdoch and Whitehead (2010, 2013) categorize movement into six forms, each possessing a different essence or defining characteristic, and each differing with respect to the physical environment in which the activity takes place and the relationships that occur (see Table 1).

Using swimming as an example, Murdoch and Whitehead (2010, 2013) demonstrate how one activity can belong to many different movement forms depending upon how it is presented. If a PE teacher was to focus on teaching the specific movement patterns and relevant movement capacities of swimming, it would belong to the athletic form. If the focus was to outperform other students, it would be classified as belonging to the competitive form. If the swimming unit focused on synchronized swimming, it would belong to the aesthetic and expressive form. Finally, if swimming was used to develop stamina and endurance, it would fall within the fitness and health form. Classifying the experience as belonging to one form or another is secondary to being clear about the focus of why the content is being taught and ensuring that students experience activities that exemplify the essence of all movement forms. Experiencing “activities that together exemplify *all* Movement Forms ... will ensure a comprehensive coverage of a range of movement patterns and challenges in a wide variety of situations and environments” (Murdoch & Whitehead, 2013, p. 61).

## Physical Literacy Means Knowing the Language of Movement

The term literacy is often narrowly understood and interpreted to refer to one’s ability to read and write and may seem, to some, to be out of place when placed alongside the word physical. As noted above, the term literacy was not adopted “to give academic respectability or creditability to this human capability” but rather was adopted because, at its core, literacy refers to “‘fluent and productive’ interaction with the world” (Whitehead, 2013a, p. 26; see also UNESCO, 2006). Fluid and productive interaction with the world can occur in and through various mediums, with movement being one of them. In the responses/understandings provided by the participants, they appear to be attempting to equate their knowledge of traditional understandings of literacy (e.g., word recognition and understanding, spelling, reading, and writing) with the physical domain. For example, one participant stated, “I think physical literacy is kind of like knowing how to do certain things, and knowing certain terms and not only knowing the terms but knowing the ways of movement and stuff like that” (Participant 2C). Two other participants offered the following comments:

I don’t have too much more to add other than just ensuring our students have the competency to understand those words and use those words around physical education and understanding physical literacy themselves and what it is and carrying that through home or to outside clubs and things like that especially listening to their bodies. For a kid to know that they have been running around the gym and think they are going to choke and actually know the words that it is just an elevated heart rate and that is what is happening, just that comprehension I guess and being able to put the terms to it as well. (Participant 1B)

Even in your phys ed classes when you are teaching a certain topic, you obviously have your children learn physical skills you are trying to teach them but also educating them on the basic on the new language they can possibly learn. When children come to your class and do not even know what a locomotion skill or movement is so just repeating those words so they are aware of the physical terminology that is associated with being physically active. (Participant 2D)

**Table 1** Presentation and Description of the Various Movement Forms

| Movement Form            | Possible Examples                 | Environment                                     | Essence, Defining Characteristics, Type of Experience Derived                                                         |
|--------------------------|-----------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Adventure                | Orienteering, skiing              | The natural and often unpredictable environment | Meeting risk and managing challenge                                                                                   |
| Aesthetic and expressive | Dance, rhythmic gymnastics        | A creative, aesthetic, or artistic context      | Embodied dimension being used as an expressive instrument                                                             |
| Athletic                 | Gymnastics, track and field       | Competitive and controlled environments         | Reaching one’s personal maximum/optimal power, distance, speed, and accuracy                                          |
| Competitive              | Hockey, netball, volleyball, golf | Challenging and changing contexts               | Achievement of predetermined goals through outwitting of opponents while managing a variety of implements and objects |
| Fitness and health       | Aerobics, yoga running, pilates   | Regular, repetitive participation               | Gradually improving the function of the body both qualitatively and quantitatively                                    |
| Interactional/relational | Country, line, and social dance   | Gathering together in a social context          | Recognition and appreciation of empathy between people and groups                                                     |

*Note.* Adapted from *Physical literacy: Throughout the lifecourse* (pp. 175–188), by E. Murdoch and M. Whitehead, 2010, Abingdon, UK: Routledge. Copyright 2010 by Routledge; *Debates in physical education* (pp. 55–73), by E. Murdoch and M. Whitehead, 2013, New York, NY: Routledge. Copyright 2013 by Routledge.

This is not altogether surprising. Consider, for example, that some physical literacy presentations have suggested that just as literacy has its ABCs, words, and sentences, physical literacy has a movement vocabulary, sequences, and tasks (Kreillars, 2017). Notwithstanding the observation that this is a misinterpretation and oversimplification of language literacy development, this parallel example has become commonplace among many who are introduced to physical literacy in Canada and the United States (e.g., this very example was given at a large keynote address at the most recent SHAPE America National Convention). In addition, the improvement of literacy programs (and student achievement in literacy) has been a priority for provincial Ministries of Education (in Canada) for the past number of years. Provinces have invested millions of dollars in literacy by extending literacy resources, supports, and training into public school programs. Teachers across the country have been inundated with programs and policies aimed at improving literacy. In response to this, many teachers, including PE teachers, have been mandated to contribute to students' literacy development. Suggestions for how to accomplish this within PE include specifically planning for and including academic language in daily PE lessons (Constantinou, 2015). Consider, for example, one Canadian province's late addition of a literacy outcome (as, now, one of 10) to the elementary PE curriculum: "students will apply literacy learning in Physical Education by engaging in listening and speaking, reading and viewing, writing, and other ways of representing" (Government of Nova Scotia, n.d., p. 9).

Without a thorough understanding of physical literacy, and noting the push for all teachers to help improve student literacy levels, the responses provided above are not that surprising. These sorts of understandings, in which physical literacy means using and understanding PE words (as noted in the quotes above) very clearly miss the mark and have absolutely nothing to do with physical literacy. Looked upon this way, these PE teachers believe that teaching literacy within a PE domain or environment somehow amounts to teaching for physical literacy.

Recently, other researchers in Canada (Stoddart & Humbert, 2017) found that specialist and generalist teachers harbored this same misunderstanding. That is, their research participants believed physical literacy to be related to "traditional 'literacy'" (p. 6) in an altogether erroneous manner. Consider, for example, the following illustrative example from Stoddart and Humbert:

Physical literacy means working on academics, such as Math or Reading, while moving the body by balancing, or moving in various other ways at the same time. A student can walk a balance beam while looking at sight words or letters as he/she is walking and trying to balance at the same time. (p. 6)

Herein lay two plainly obvious concerns. First, other researchers have been finding the same entirely incorrect understanding of physical literacy. Second, PE specialists have been shown to have this same misunderstanding as do generalist teachers. While one might be forgiven for assuming the lead PE teachers in this study would know more than regular generalist teachers, Stoddart and Humbert's (2017) research suggests this may not be the case. Moreover, these understandings of physical literacy are so out of line with any real physical literacy conceptions (from any source), that these accounts really amount to little more than a shot in the dark guess—one that illustrates ignorance more than any misremembered knowledge.

## Physical Literacy Means Fundamental Movement Skills

As physical literacy has gained in popularity, various organizations have adopted the term and (re)/(mis)interpreted the definitions to suit their own purposes. Others have adopted components of physical literacy to champion their own objectives (Corbin, 2016; Roetert & MacDonald, 2015). In Canada, some groups that publicize and run programs aimed at developing or improving the physical literacy of youth (e.g., provincial physical literacy consultants) use physical literacy synonymously with FMS. In fact, the focus on their programs tends to be direct instruction in FMS. Relatedly, some of the assessment instruments used and promoted in community-based programs (e.g., The PLAY series tools) focus heavily on the ability to demonstrate the mature form of a variety of FMS (such a focus on FMS when assessing physical literacy has also already been critiqued and labeled as misplaced and misunderstood by others). As the quotes below demonstrate, participants in the focus groups were aware of the rhetoric surrounding the importance of FMS and have made (mis)directed programmatic changes as a result.

I would say definitely it has changed my teaching. I think I might have been a little heavy earlier in my teaching on more of just doing play and not looking at the importance of the fundamental movements behind some of that game play. I would take both approaches because I would do my work with stations working on fundamental movement skills or doing some exploration work through the gym. (Participant 1A)

I don't know if we even called them fundamental movement skills when we first started my degree, I am trying to think of what the term was that we used. I know that we did that but maybe there are so many more resources and having this FMS with physical literacy and LTAD and seeing how important it is for kids to have their ABCs and 123s that maybe it is before they go on. (Participant 1B)

Almond (2013) has noted that groups within Canada, Australia, New Zealand, and Ireland not only promote mastering FMS as a necessary foundation to developing physical literacy, but do so while never questioning the assumed connection between the two. As Almond has explained, one of the problems with this assumption (i.e., that FMS will promote or lead to physical literacy) is that it is unproven (Jurbala, 2015). Moreover, it reduces and restricts the early years curriculum to a defined set of skills that are often presented in isolation and taught using more direct teaching methods. This does not amount to quality PE (Almond, 2013).

The quotes above indicate that these PE teacher leaders have altered their programs to focus more on FMS. This is interesting because FMS have been a part of elementary curricular content across the country for decades. That is, including FMS into an elementary curriculum should have already been occurring. Furthermore, structured play experiences are vitally important for younger students as these experiences can begin to foster a love of, and motivation for, more movement experiences. Whitehead (2010a, 2013a) has repeatedly stated that the motivation to move (i.e., a desire to be active) along with confidence in one's ability are at the heart of physical literacy. Reducing playful experiences to focus on the acquisition of FMS reinforces Almond's previous concern and is, we believe, counterproductive to fostering the joy of movement.

While one may concede that movement competency is an important aspect of physical literacy, it is only part of the concept.

That is, “movement competency” on its own does not constitute physical literacy” (Whitehead, 2013a, p. 30). Whitehead’s ideas pertaining to movement competence are far broader than the acquisition of FMS. Movement competencies are not meant to be viewed as a list of abilities that must be mastered to be(come) physically literate. When students are provided opportunities to experience a broad range of the suggested content in varying environments with enough time to acquire a degree of competence with the content, motivation and confidence are more likely to accompany the development of competence.

Movement competence, in relation to developing physical literacy, is comprised of four components, namely the learner’s movement vocabulary, movement capacities, general and refined movement patterns, and specific movement patterns contextually designed for a particular activity setting. In the early years, through structured and unstructured play experiences and the process of maturation, individuals begin to develop a movement vocabulary. This vocabulary includes, but is not limited to balance actions such as walking and rocking, locomotor actions such as galloping and crawling, flight actions such as jumping, and nonverbal communication actions such as clapping and waving (see Maude, 2010 for a fuller description of a child’s developing movement vocabulary). Through repetitive use, the individual’s movement vocabulary will be retained and refined. One’s movement vocabulary can be enhanced when movement capacities are further applied. Murdoch and Whitehead (2010) explain that “movement capacities are the constituent abilities of the articulate mover. It is the acquisition of capacities that make it possible for an individual to move with increasing effectiveness and to improve and develop their physical competence” (pp. 176–177). Movement capacities are categorized as simple (balance, coordination, and flexibility); combined (poise, which combines the simple capacities of balance and core stability; agility, which combines the simple capacities of flexibility, balance, and coordination); and complex capacities, which result from combining both simple and combined capacities (hand-eye coordination, bilateral coordination; Murdoch & Whitehead, 2010). As movement vocabulary and movement capacities are acquired and combined, movement patterns emerge.

Of the four elements, movement patterns (general, refined, and specific) form the foundation upon which movement competence can be built (Murdoch & Whitehead, 2010). General patterns develop from one’s movement vocabulary. Examples of general movement patterns are running, jumping, sending, and rotating. Refined movements are derived from general movement patterns and often require the application of movement capacities. Using one of the previous examples, the refined movement patterns of throwing, bowling, and shooting arise from the generic movement pattern of sending. Specific movement patterns are developed when refined movements are required to be used in contextually relevant ways. Continuing with the sending example, bowling becomes the overarm bowl in cricket, or javelin in athletics.

For competence to develop, individuals must be presented with, practice, and acquire refined and specific movement patterns in broad and progressively challenging situations, and in varying environments (environments with fixed objects like in gymnastics; environments where both others and objects are moving like in netball or lacrosse). Although movement patterns are critical to developing competence, according to Whitehead (2001), movement patterns are not the end goal. Rather, their acquisition simply enables students to engage in a wide variety of activities.

When physical literacy is reduced to movement competence and movement competence is further reduced and becomes

synonymous with FMS, as it often is (and as can be seen in the quotes above), the focus of PE begins to center around the content of the discipline, and not the learner. The result is that the intended meaning of physical literacy is lost, and thus, confusion and misunderstanding are inevitable. As Barnett et al. (2016) have reminded others, “FMS do not equal physical literacy” (p. 223).

## General Discussion and Importance

Canada’s Physical Literacy Consensus Statement identifies four elements that comprise physical literacy (ParticipACTION et al., 2015). These are motivation and confidence (affective), physical competence (physical), knowledge and understanding (cognitive), and lifetime engagement in movement (behavioral). This interpretation of Whitehead’s and the IPLA’s conception of physical literacy is not without disagreement (e.g., Whitehead, herself, does not agree with this behavioral domain being placed alongside these other three). Still, participants appear to be very aware of the physical aspect of physical literacy and, to a lesser extent, the affective and behavioral components. This is not surprising given that many of the available resources, writings, and assessments focus heavily upon the physical aspect (more specifically, upon the acquisition of skills in a variety of settings). Those who purport to introduce the concept of physical literacy in university coursework or at conferences and teacher in services should take note of the findings here and work to ensure that a more holistic understanding of the concept is presented and understood.

Just as Whitehead (2010a) recognized that some others (e.g., academics, resources, programs, etc.) captured only a part of the totality of physical literacy, the participants, at best, recognized and understood parts of physical literacy. This may be due to several reasons. First, when the participants were in preservice and/or inservice PE teacher education programs, physical literacy was in many ways in its infancy. That is, their introduction to physical literacy occurred well before the establishment of Canada’s Physical Literacy Consensus Statement (as well as Whitehead’s and the IPLA’s definition). Second, resources and programs made available to them (both then and now) do not always truly reflect Whitehead’s and the IPLA’s vision. That is, some are oversimplified versions of physical literacy—provided, for example, without any mention of how monism, existentialism, and phenomenology relate to physical literacy.

More alarming is the realization that some of the participants had completely incorrect and incompatible understandings about physical literacy. The equating of FMS with physical literacy—rather than the identification of FMS as one (still, somewhat problematic) part of physical literacy—is one of the most potentially damaging misunderstandings of the concept. It is somewhat encouraging to see some others share this same concern for this confusion about FMS as it relates to physical literacy (e.g., Almond, 2014; McCaffery & Singleton, 2013). For example, and as Almond (2014) has observed, “self-directed learning, independence and responsibility do not appear to be part of the FMS framework” (p. 60). Almost equally disconcerting was the realization that the “literacy” label caused significant confusion and misunderstanding, whereby participants believed that being able to read and write “PE-type” words was somehow related to physical literacy. Clearly, the privileged place of literacy within today’s school communities and cultures is influencing what PE teachers come to believe about what physical literacy might mean in practice.

Upon consideration of the results, it was obvious that the participants had an incomplete understanding of the concept of

physical literacy. Noting these participants were purposefully selected because they were considered leaders in the field of PE, this finding is troublesome. Note, too, that the 12 who volunteered to participate possibly did so because they felt that they were especially knowledgeable compared with the other 10 who did not volunteer to participate. As lead PE teachers, some of these participants regularly plan, lead, and present at their respective provincial PE conferences; some have presented at the national Physical and Health Education Canada conference. If they possess an inaccurate and/or incomplete understanding of physical literacy, it is likely that others do as well.

The search for the justification of movement's contribution to the development of all humans resulted in the development of the concept of physical literacy. When Whitehead (2001) first introduced the term physical literacy, she understood she was not the first person to coin the phrase. However, she was the first person to offer a detailed conceptual framework with supporting literature along with it. She provided an in-depth description of the meaning behind the concept, and she justified and rationalized why the terms physical and literacy were selected over other possibilities (Whitehead, 2013a, 2013c, 2010c). Essentially, what Whitehead (2013a, 2013b, 2010c) provided with the introduction and detailed explanation of the concept of physical literacy was justification for the inclusion of PE/movement experiences as a valued aspect of education because of movement's contribution to helping all individuals reach their full human potential.

In the past number of years, various sport-based organizations, governments agencies, and education groups have adopted the physical literacy concept and have, in turn, (re)interpreted and modified its meaning. Indeed, some have seemingly adopted some components of the term to suit their own needs or purposes (Corbin, 2016). In so doing, the essential intended elements and meaning of the concept have been lost or, if not lost, then at the least greatly distorted. This research has highlighted this very happening. For these PE teachers and others like them, this is truly a great loss.

All prospective and practicing PE teachers ought to have a basic understanding of the philosophical foundations upon which physical literacy was developed. Without such a foundation, it is simply too easy to oversimplify physical literacy and, consequently, to also miss out on physical literacy's greatest potential. To remedy the current disconnect between prospective and practicing teachers' understandings of the relationship between physical literacy and its foundations, this needs to be addressed in both preservice and inservice PETE settings. All prospective teachers and practicing teachers need to appreciate and understand the contribution movement plays in helping children and youth reach their full potential. This necessitates some attention be drawn upon the existential and phenomenological aspects of physical literacy. At no time during any of the interviews did any of the participants mention or refer to any philosophical foundations. Once again, this is not surprising; many physical literacy resources accessible to PE teachers ignore this aspect altogether. Almond (2016) has suggested the existing debates "are operating at the surface level only and never penetrate the complexity of the issue" (para. 12), and he reminds others that the conceptual framework that underpins physical literacy is rarely considered or addressed.

Nonetheless, mapping out how this might best be achieved is easier said than done. No clear suggestions for this are offered here. Still, something has to happen, and it is hoped that others within the academe who also recognize this to be true will share in the responsibility. At the same time, it has been encouraging to see

the work of some Canadian colleagues who have clearly taken some leadership here and have begun to make these foundational underpinnings more explicit in their applications and interpretations of physical literacy (e.g., Lloyd, 2011, 2016; McCaffery & Singleton, 2013).

For many years, dualism has permeated much of PE and sport science. Physical literacy has the potential to offer something new, something greater. Its foundations require PE teachers to look at their work and world differently. It seems that without acknowledging or working from the philosophical foundations of physical literacy, it begins to look very similar to PE (or as some might describe it, old wine in a new bottle). Indeed, when one observes physical literacy in practice (e.g., consider PE teachers or conference presenters who proclaim a physical literacy orientation), it is oftentimes difficult to spot a difference.

Focused efforts toward the achievement of consensus are necessary given the existence and adoption of varied physical literacy definitions. The lack of consensus made possible actualities where various interpretations could gain traction in PE practice. All must welcome the ongoing discourse and action toward a consensus definition that would guide PE teachers' understandings of the concept of physical literacy. In the movement toward consensus, all ought to also remain mindful of the various positions and comments of those who convincingly question and challenge the definition, and its use, in guiding PE practice and policy decisions. Establishing a consensus is certainly important. Following that establishment, it will be important to also establish how physical literacy is enacted in practice. This operationalization in practice will only be achievable once the totality of physical literacy—particularly as it is offered by its pioneer and its truest adherents—is embraced.

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