

The Role of PETE in Developing and Sustaining Physical Literacy Informed Practitioners

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This study discusses teacher preparation in relation to encouraging and empowering future teachers to appreciate the potential and value of adopting physical literacy as the goal of physical education (PE). The study addresses the issue of the role of schools and teacher training programs in developing the next generation of PE teachers entering PE teacher education with respect to thoughts, feelings, perceptions, and beliefs that underpin the concept of physical literacy, and providing high-quality learning experiences that are crucial to continuing physical activity throughout the life course for all children, not just those who have a natural aptitude in this area. Many advocates for radical change in PE have repeatedly argued that PE curricula around the world are too focused on a traditional, one size fits all, sport technique based, multiactivity form. Others have argued that the traditional curricula have a primary focus on physical competence in running, jumping, and balls skills rather than providing experience in a wide range of physical activities including, inter alia, those with a focus on aesthetic awareness and those related to outdoor adventure.

Keywords: models-based practice, occupational socialization, PE teacher education, preservice teachers

To design appropriate environments to foster physical literacy, prospective teachers of physical education (PE) need a sound theoretical understanding of the learner and of the philosophy of physical literacy and need to appreciate the role of models-based practices in promoting physical literacy. By ensuring that the concept of physical literacy is appreciated and assimilated within their teacher identity and belief system, preservice teachers (PSTs) can become more resistant to the challenges in the organizational phase such as the expectation of adopting a pedagogy of necessity, driven by established school expectations (Tinning, 1988). These future teachers will then have the opportunity to become sustainable practitioners who will employ authentic teaching approaches in line with promoting physical literacy and hopefully also influence the socialization process of future generations.

Lawson (1986) defined occupational socialization as “all of the kinds of socialization that initially influence persons to enter the field of PE and that later are responsible for their perceptions and actions as teacher educators and teachers” (p. 107). Using occupational socialization as an appropriate theoretical framework to examine the socialization of teachers in PE (Stroot & Williamson, 1993), this study aims to discuss the role of schools and physical education teacher education (PETE) providers in developing and sustaining physical literacy informed practitioners. The first section considers the influence and impact of socialization

through the anticipatory phase prior to entering PETE and its effect on PSTs’ beliefs. The second section discusses what should be taught during PETE to move PE away from traditional ideology and support PSTs in developing their own teaching philosophy using the concept of physical literacy. Finally, the third section addresses the pedagogical approaches considered in PETE to promote high-quality learning to foster physical literacy. In conclusion, the study argues that teacher educators need to facilitate the exploration of the anticipatory phase of PSTs to ascertain how prospective teachers establish their identity as well as their underpinning values and beliefs. PETE needs to support PSTs in becoming confident innovators and pioneers of radical reform. They need to be equipped and empowered to break the recycling of the traditional curricula, that may, as Kirk (2013b) fears, lead to the extinction of PE. This should provide a model for future practice in school PE that will become part of the PST belief system and thus be more likely to be sustainable.

In summary, this study will give recommendations for PSTs concerning the acquisition of the skills, beliefs, and the philosophical basis to work toward promoting physical literacy and also enable these teachers to “plant the seed” for their pupils to adopt a physically active life in the future (Gard, 2004).

Physical Literacy and PSTs’ Beliefs

This section considers how, through socialization, PSTs formulate their beliefs surrounding teaching PE before they enter PETE. It also looks at how these beliefs impact on their learning and ultimately on their teaching as sustainable and confident advocates of physical literacy when they graduate. Matanin and Collier (2003) define a belief as a proposition that individuals hold to

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be true. Beliefs, according to Pajares (1992), can be learned implicitly or taught explicitly throughout one's life. An individual's beliefs act as filters for teacher learning and are major determinants of a teacher's practice (Borko & Putnam, 1996; Hodge, 1997; Stran & Curtner-Smith, 2009). Therefore, it is important to have an appreciation of these beliefs to understand the need for value-added components in PETE programs (Dewar & Lawson, 1984) and how these beliefs will have a significant impact on how PSTs respond to their teacher education program (Everley & Flemons, 2015). Investigating the reasons for why PSTs choose to undertake a PETE program can inform teacher educators on how best to define teaching tasks, organize knowledge relevant to student learning, and influence the perceptions of PSTs about teaching and learning (Calderhead, 1987).

Socialization, defined broadly, is the process through which individuals internalize the norms, cultures, and ideologies deemed important within a particular social setting (Billingham, 2007). According to Stroot and Williamson (1993), occupational socialization can be described as an appropriate theoretical framework that can be used to examine the socialization of PE teachers. Lawson (1986) identified 3 distinct phases over time: the anticipatory phase (birth to PETE), the professional phase (during PETE), and the organizational phase (working in the field).

It is during this process that beliefs, attitudes, and teacher ideologies are fostered (Hushman & Napper-Owens, 2012). Lortie (1975/2002) estimated that in the anticipatory phase children spent a total of 13,000 hr in direct contact with teachers, coaches, and administrators within school and club settings prior to entering PETE. PSTs will experience an "apprenticeship of observation" (Lortie, 1975/2002, p. 61) during their formative years at school whereby they become active participants observing their teachers' practices through lived experiences. Interestingly, what PSTs often observe and experience may conflict with their teachers' beliefs. Taylor, Ntoumanis, and Smith (2009) reported that teachers already in the profession were influenced by an emphasis on student assessment and time constraints and were often compelled to use teaching strategies that conflict with their existing beliefs about the most appropriate ways to engage all students. In the United Kingdom, secondary school PE courses are heavily weighted toward theoretical knowledge, and this can take precedence over other aspects of the work. Teachers are under pressure to ensure that students can pass exams by meeting the necessary criteria. Other significant lived experiences include strong interpersonal relationships between PSTs and sports coaches and parents.

Significant others are key in influencing individuals as they prepare to join the profession (Dewar & Lawson, 1984; Ralph & MacPhail, 2014), and many PSTs recall having positive relationships with their PE teachers. There can be a motivation to emulate these teachers or perhaps a wish to try out other approaches. Individuals who did not have positive relationships with their PE teachers but still have a love of working with children and a love of sport may enter PETE, perhaps, in these cases to effect change (Curtner-Smith, 2016). Their own schooling provides PSTs with experiences that will shape their beliefs, values, and assumptions about teaching PE long before entering the profession. Graber, Killian, and Woods (2016) suggest that the anticipatory phase is far more influential than any others throughout teacher socialization. Therefore, it could be argued that PSTs arrive in PETE with already deeply embedded beliefs about what PE is or should be. Stran and Curtner-Smith (2009) identify that this can act as a barrier or a facilitator to accessing and utilizing learning opportunities given within PETE, depending on the beliefs PSTs

hold. Those working in PETE to promote physical literacy as the goal of PE will need to be mindful that PSTs may not have experienced teaching focused on fostering this.

Most commonly, experiences of PE during the anticipatory phase are predominantly driven by traditional curricula that are based on ideology (a system of ideas) rather than a philosophy (a theoretical underpinning that provides a guiding principal for behavior; Green, 2002). This is influenced by intergenerational and interdependent links (Brown, 1999; Green, 2002). Many PSTs encounter learning within a multiactivity, sport-based form that first appeared in government run schools in the 1950s (Kirk, 1992). Kirk (2005) later described this as being characterized by "relatively short units of activity . . . an overwhelming focus on technical development; a lack of accountability for learning and little progression of learning; and the almost exclusive use of a directive teaching style" (p. 246). PSTs stated that their PE classes were structured on a multiactivity model and that there was little emphasis on instruction to promote physical competence in PE (Curtner-Smith, 2001; Hutchinson, 1993; Matanin & Collier, 2003). Evidence from studies conducted by Curtner-Smith (1999) and Penney and Evans (1994) indicated that this traditional form of PE was not meeting the needs of many young people. Fairclough, Stratton, and Baldwin (2002) suggested that there is very little transference of learning from secondary school PE into physical activity in later life. If the purpose of PE is to promote lifelong engagement in physical activity for all children; then as it stands, PE does not always fulfill its potential to fully promote physical literacy. Currently, its focus is dominated by traditional sports and meeting the criteria set by the exam boards.

Those who do flourish in school PE face two separate issues. The first is a possible lack of experiences and encounters with a wide range of activities that make varied demands on movement in response to the changing and challenging environments, particularly if they have experienced a traditional curriculum oriented toward competitive team games. Often the PE ideology will override the concept of physical literacy. Although physical literacy is not described as a philosophy in its own right, its existentialist (Sartre, 1957) and phenomenological positioning within a monist perspective (Whitehead, 2010) can provide a solid foundation for PE to be built upon. Traditional PE ideologies can often mean that other activity areas such as dance, gymnastics, health fitness and well-being, adventurous activities, and aquatics can be overlooked in favor of the more traditional sport-based activities.

The second of the two issues faced by PSTs is that they may hold a particular position concerning their orientation toward teaching, dependent on their experiences (Curtner-Smith, 2016). Given that those who enjoy school PE are more likely to pursue similar activities outside of school at a higher competency level, they will possibly encounter a mastery climate. The longer the individuals spend in a mastery environment for a particular sport, the more likely they will espouse conservative, didactic views of PE (Curtner-Smith, Hastie, & Kinchin, 2008; Lee & Curtner-Smith, 2011; Richards & Templin, 2012). What the PSTs described here is nothing new. Dewar and Lawson (1984) also suggested that these students would hold more custodial, sport activity focused orientation toward learning. Students who had less involvement with sport outside school and perceived themselves as less able may experience more learner-centered lessons, sometimes defined as teacher orientated. More recently, Richards, Templin, and Graber (2014) described PSTs as sitting on a continuum between coach and teacher orientation. Drawing from this idea, the real focus should not be placed on the label coach or teacher, but on the

pedagogical orientation, they may foster. Those with a moderately custodial to teacher orientation are more likely to implement change in PE, whereas those who hold a highly custodial and conservative orientation are more likely to resist any change in the professional phase (during PETE). Graber (1991) believed that the professional phase had the least impact on PSTs. Knowing that many PSTs may enter PETE from a background, the anticipatory phase (MacPhail & Hartley, 2016) socialized through competitive sport can provide further explanation to why PE has continued to produce what Kirk (2013b, p. 2) describes as a “traditional ‘one-size-fits-all’, sport techniques based, multi-activity form.”

Tsangaridou (2006) suggests PSTs’ beliefs shape the professional knowledge acquired through teacher education programs rather than beliefs being established initially in the professional phase. If recruits have no knowledge or understanding of physical literacy prior to starting PETE, this provides a real challenge for teacher educators. It will be essential that PSTs have sufficient time to grasp the concept so that this can play a part in shaping their growing professional knowledge.

Having an appreciation of recruits’ preconceived ideas can ensure PETE programs impact on teacher pedagogy and beliefs (Hutchinson, 1993) and teacher attitudes (OCED, 2006) which influence teacher behavior (Calderhead, 1996). The peregrination of PSTs beliefs was noted by Philpot and Smith (2011). They reported that there was a change between the beginning of the course, when recruits aligned PE with sport, and their views following graduation, where they perceived PE as more than sport. However, PETE graduates felt that the curriculum still needed to be made up of, and heavily influenced by, sport. This is not conducive to a curriculum that focuses on promoting physical literacy in learners. Tinning (1988) suggests that teachers adopted a pedagogy of necessity to survive their first year of teaching and to fit into the department in which they were employed. Sima, Tinning, and Rossi (2010), drawing on the work of Bourdieu (1978), describe the school as the “field” or social setting which is “infused with power struggles and organizing structure” (p. 73) where PSTs and newly qualified teachers in particular continue to form their beliefs and perceptions. The constraints in which they work can influence developing teacher beliefs and can become naturalized therefore cementing historical behaviors into the present.

Although PSTs may start their teacher education with preconceived beliefs and perceptions that will filter their learning (Borko & Putnam, 1996), there is no reason why they cannot be introduced to the concept of physical literacy, its importance and value, and subsequently build the concept into their own teaching of PE. Everley and Flemons (2015) suggest that PSTs need to become reflective and reflexive to critically evaluate their beliefs and the impact that they have on their practice. Beliefs are important when interpreting new information (Siedentop & Tannehill, 2000). PSTs need to examine their existing beliefs and challenge them regularly throughout PETE. Teacher educators can facilitate this through encouraging reflection, reflexion, and action relating to new ideas. An appreciation of their own physical literacy journey can inform PSTs perception about the most appropriate way to work with learners (Everley & Flemons, 2015).

How and What to Teach in PETE to Promote Physical Literacy

This section discusses what should be taught during PETE to support PSTs developing their professional knowledge using

physical literacy as the concept that underpins their own teaching philosophy. As suggested by Green and Leask (2016), teaching is a comprehensive and multifaceted discipline involving a fixed pursuit of identified objectives. The process has interrelated and interdependent stages designed to contribute to the overall goal of supporting long-term individual development. How teachers approach the planning and delivery of their lesson, where their personal values surround their subject, and where the wider educational agendas are situated are important starting points. As discussed in the previous section, encouraging PSTs to reflect on their own past physical literacy journey is an important starting point for PETE providers. This form of reflective practice, underpinned by the philosophical teachings of monism, existentialism, and phenomenology, provide the foundations for the concept of physical literacy as a critical starting point to identify what good pedagogical practice in the teaching of PE looks like and ensures PSTs become practitioners promoting a physically active life for all (Dyson, Griffin, & Hastie, 2004).

While it should be acknowledged that PSTs may still run the risk of adopting a pedagogy of necessity (Tinning, 1998) to fit in and feel accepted into the PE department to which they are attached, challenging PSTs to do more than recycle a traditional curriculum (Green, 2002) is vital. Time and space need to be provided to allow them to examine and reflect on their own past experiences (Fletcher, 2012).

Teacher educators need to facilitate PSTs in understanding and establishing the connections between classroom pedagogy and the concept of physical literacy and develop independent lifelong physical activity habits in children independent of the governance of the school environment (Lawson, 1984; Stran & Curtner-Smith, 2009). PSTs need to be able to understand the distinct difference between PE and sport; sport is based on learning activities, whereas PE underpinned by physical literacy is focused on educating a child through physical movement.

For PSTs to adopt physical literacy as a theoretical concept to teaching PE, there are specific implications for how this knowledge and understanding should be nurtured during their preservice years. First, within PETE, it is accepted that a PST needs to develop different forms of professional knowledge (Shulman, 1986). These forms are noted in Table 1. Green and Leask (2016) suggest that the combined nature of varying types of knowledge married with ones ability to contextualize this knowledge will lead to learning. Furthermore, they believed that simply knowing a lot about your subject does not automatically make you an effective teacher. Second, education practitioners from different fields bring together different aspects of professional knowledge into what Banks, Leach, and Moon (1999) define as one’s personal subject construct. Learning from a range of other people allows PSTs to start forming their own unique teaching philosophy connected to their personal values and assumptions about PE. From a PE perspective, subject content knowledge is much more than knowledge of basic activities (syntactic). It is a deeper understanding of the core knowledge of physical literacy as the underpinning concept (substantive; Banks et al., 1999). This allows the PSTs to start forming their own personal subject construct linked to the concept of physical literacy.

It is of value for PETE courses to include a review of the forms of knowledge presented in Table 1 to identify knowledge in each category that would support the fostering of physical literacy. Within the context of what is taught in a PE curriculum, it is important for PSTs to realize that central to the concept of physical literacy is the process of cultivating interest, engagement, and

Table 1 Forms of Professional Knowledge for Teaching (Green & Leask, 2016)

Form of Professional Knowledge	Description
SCK	The content that is being taught. Schwab (1964) identifies two components of content knowledge: • substantive: core concepts and skills in the subject • syntactic: the way these concepts and skills are structure and organize within the subject.
GPK	Broad principles and strategies of classroom management and organization that apply irrespective of the subject.
PCK	Knowledge of what makes for effective teaching and deep learning, providing the basis for teachers' section, organization, and presentation of lesson content, that is, the integration of subject content and its related pedagogy. Grossman (1990) breaks PCK into components: • knowledge and beliefs about the <i>purposes</i> of teaching a subject at different levels; • knowledge of pupils' understanding, <i>concepts and misconceptions</i> of subject matter; • knowledge of <i>instructional strategies</i> and representations for teaching particular topics.
Curriculum knowledge	Materials and programs that serve as "tools of the trade" for teachers.
Knowledge of learners and their characteristics	This comprises of a variety of issues: how learners develop with age, learners' cognitive development, child development, and knowledge of the needs of particular individuals or groups of learners.
Knowledge of educational contexts	Political, curricular, sociological, cultural, geographical, historical, and psychological factors may all be important here.
Knowledge of education ends (aims) purpose, values and philosophical, and historical influences	Both short and long-term goals of education in general and of particular the subject.

Note. GPK=general pedagogic knowledge; PCK=pedagogical content knowledge; SCK=subject content knowledge; Adapted from "Those Who Understand: Knowledge Growth in Teaching," by L.S. Shulman, 1986, *Educational Researcher*, 15, pp. 4–14; and "Knowledge and Teaching: Foundation of a New Reform," by L.S. Shulman, 1987, *Harvard Educational Review*, 57, pp. 1–23.

reflection (Almond & Whitehead, 2012). Almond and Whitehead believe that the engagement of young people in PE needs to go beyond a range of purposeful physical pursuits. The authors suggest that they need to learn from their engagement to appreciate the value of the different types of activities offer. Furthermore, Almond and Whitehead (2012) stress that individuals need to be able to make informed choices about the activities they pursue, allowing informed and intelligent use of their time and efforts.

There is a general acceptance that due to concerns with child safety and therefore reduced free play (Docherty & Morton, 2008), young people today have fewer opportunities for physical activity with more time being spent on engagement in technology and social media inside the home after school hours (Atkin, Gorely, Biddle, Marshall, & Cameron, 2008). For many children, PE lessons have become the only form of physical activity undertaken. It is also acknowledged that within PE lessons pupils' confidence, motivation to be active, positive attitudes to participation in a range of physical competences, and a commitment to be active can be made or broken by the nature of experiences in school (Rupprich, Lunger, Raue, Jaiger, & Knisel, 2016).

The "how" of any teaching is at the crux of learning, but all too often in PE we see the "what" (subject knowledge and skills) at the center. The way PSTs are trained is critical in both changing practice and developing and sustaining physical literacy informed practitioners. As Whitehead (2015) suggests, the adoption of physical literacy as the underlying aim of PE has a number of implications for the way PE is conducted in schools. These implications relate to sensitive teacher–learner interaction, appropriate differentiated pedagogy, and carefully selected content.

Children need to see PE as a place where they are being educated in a secure environment, and where there is oneness of body and mind as they interact with a wide variety of activity contexts. PSTs need to challenge the traditional curricula by utilizing the concept of physical literacy as a philosophical basis and apply it to their practice through sound pedagogical principles

underpinning the delivery of high-quality PE. Drawing from Smith and Karp's (1996) work, the activities taught can influence marginalization in PE. The authors classified children in a PE class into different categories: the powers (high ability in the activity offered and highly motivated), the others (the "middle" group—at risk of becoming marginalized), and the marginalized (disengaged). Broadening the types of activities offered in PE can create a more even playing field and therefore encourage the engagement of all children. For example, utilizing activities such as, aquatics, dance, gymnastics, and outdoor education activities on a broader scale could potentially support this.

Pedagogical Practice and Physical Literacy in PETE

The question of "what" knowledge, attitudes, behaviors, and skills PSTs should possess has been debated extensively within the literature (Grimmett & MacKinnon, 1992; Rovegno, 2003; Shulman, 1987; Tindall & Enright, 2013; Tinning, Kirk, & Evans, 1993). Yet the realities of what and how to teach in PE differ between academics, practitioners, and national curriculum guidance. This section will focus on the practical knowledge required within PETE courses to ensure future teaching practitioners are equipped to develop both an understanding of physical literacy and their own philosophy of PE. Teachers are active agents within PSTs' socialization; therefore, they can promote change within the field (Curtner-Smith, 2016). The pedagogical approaches used in PETE need to promote high-quality learning underpinned by the concept of physical literacy. This can be used as a tool not only to deliver materials but also to provide live experiences for PSTs to reflect upon. By ensuring that teacher educators are modeling good practice, PSTs "apprenticeship of observation" (Lortie, 1975/2002, p. 61) will continue. Experiencing successful learning through innovative practices may aid PSTs in assimilating these

practices into their belief system, therefore, contributing to the development of sustainable practitioners.

Preservice teachers' socialization experiences can lead to a disconnection between perceived PE curriculum and a curriculum designed to foster physical literacy. A curriculum designed to foster physical literacy must offer a central perspective that PE should be fully inclusive and allow the learner to appreciate a variety of activities on a much deeper level by learning from their engagement and appreciate the value of different activities (Almond & Whitehead, 2012). PETE needs to provide learning experiences that will promote a breadth of learning in the physical domain not limited to an "education-as-sport-as-techniques" approach (Kirk, 2013b, p. 222). Casale-Giannola and Green (2012) refer to this as physical learning, which they describe as an active form of connecting learners to the content through movement, reflection, or discussion, making the learners the center of the learning process as they take the initiative to learn. Physical learning in this definition would seem to align with physical literacy, suggesting that the teacher needs to possess the confidence to allow learners to take responsibility for their own actions, moving away from teacher-led activities. This enables learners to become active practitioners of movement with an understanding that by completing a given task they can feel a sense of accomplishment and satisfaction for a particular activity (Roorda, Koomen, Spilt, & Oort, 2011).

Talbot (2007) had previously acknowledged difficulties associated with the delivery of PE stating that a focus simply on pupil participation and enjoyment was to blame for failings in pupil learning. Turner, Gray, Anderman, Dawson, and Dunderman (2013) recognized that teacher knowledge and confidence are currently an issue within the delivery of PE observing that teaching strategies employed by teachers have a direct bearing on pupil learning and attainment. It also needs to be understood that each pupil has a preferred way of learning, and teachers must ensure that they use a range of teaching methods to give every pupil the opportunity to make progress. It was previously suggested by Knowles (1970) that teacher behavior influences the character of the learning climate more than any other single factor. As different teaching approaches work for different pupils, it is important that teachers ensure that they use a variety of teaching methods (e.g., demonstration, think pair share, reciprocal teaching, self-check, learning teams) to meet the learning needs of individual pupils (Armour, 2011; Capel & Whitehead, 2010; Megay-Nespoli, 2001).

Recent reviews of the current state of PE have indicated that current practices are not fit for purpose in the context of facilitating lifelong participation in physical activity (Kirk, 2013a). The teaching of decontextualized movements such as passing, dribbling, shooting, rather than "thoughtful application" in the context of activities or sports needs to be challenged (Kirk, 2013a). This type of teaching (i.e., decontextualized teaching) may not promote progress in learning (Lounsbury & Coker, 2008) and may result in the repetition of units of work which can blunt motivation (Almond & Whitehead, 2012; Siedentop & Tannehill, 2000). Ideologies and practices such as these are transferred by interdependent and intergenerational links (Brown, 1999; Green, 2002), providing some explanations for the resistance to a transition away from a traditional form of PE. If approaches to PE continue to be recycled, pupils will not be given opportunities to make choices about what they can do physically. According to Tinning (2015), having these opportunities can directly lead to an informed and intelligent use of their physical efforts through activity. To develop and sustain physical literacy informed practitioners, PETE needs to

challenge existing beliefs surrounding how PE can be delivered and advocate the use of a range of approaches rather than perpetuating a teacher directed "education-as-sport-as-techniques" approach (Kirk, 2013b, p. 222). PETE coordinators need to create a meaningful framework to enable PSTs to develop their practice for the delivery of effective PE and strive for excellent pedagogical practice. Effective content delivery will ensure that all learners have the opportunity to move toward a physically active lifestyle (Almond & Whitehead, 2012). PETE should provide opportunities for PSTs to continue their own physical literacy journey and become effective facilitators of others, furthering their pupils' physical literacy journeys (Dyson et al., 2004).

Informed teaching approaches that are underpinned by effective pedagogical practices are critical in achieving Almond and Whitehead's (2012) idea of how teachers should provide opportunities to allow learning to occur. It is important to expose PSTs to different teaching approaches in connection with expectations of good classroom pedagogy early in their training years. This provides a platform for them to start to consider their own teaching philosophy and question the ideologies they would have been exposed to during their anticipatory phase and develop their teacher identity. Among the range of teaching approaches are what are known as instructional models for PE (Dyson et al., 2004; Metzler, 2011). These were created to help teachers to realize particular goals in PE by explicitly focusing on and planning for the affective, social, cognitive, and physical learning domains as opposed to only focusing on the physical. They are intended to be used in specific units of work, as appropriate. Physical literacy is not a pedagogical model but is the overall aim of work in PE. However, some pedagogical models of teaching can be useful in promoting aspects of physical literacy. For example, *sport education* can foster responsibility. *Health-related fitness* can support understanding in this area, and *games for understanding* can help learners to gain a deeper understanding of games activities. A number of pedagogical models can be utilized in the teaching of PE to move the profession away from the teaching of discrete sport techniques. As Kirk (2013a) points out, pedagogical models of practice build on the work of Jewett, Bain, and Ennis (1995); Metzler (2011); and Lund and Tannehill (2005), who advocate the development of autonomy through the development of independent learning. The International Physical Literacy Association's (2017) physical literacy attributes give clear guidance as to how physical literacy can be fostered in PE lessons by explicitly planning for the three essential elements embedded within the concept: affective, cognitive, and physical. Models-based practice promotes the essential elements that are embedded within physical literacy, recognizing their interdependence on each other and founded by the monist principles of physical literacy (Whitehead, 2010). The benchmarks for each model ensure that PSTs adopt pedagogical practices that complement this.

From a PE context, it is vital to consider how teachers can scaffold the learning process to empower and facilitate learning through constructive and informed pedagogies that enable teachers to engage all learners in productive ways. This is important for physical literacy because pedagogies need to be compatible with helping learners to get on the inside of an activity, to learn to appreciate what it can offer, and to make informed decisions about the kind of purposeful physical pursuits that will enrich their lives (Almond & Whitehead, 2012).

Preservice teachers also need practical experiences with bespoke and focused opportunities for reflection to develop their pedagogical skills informed by the concept of physical literacy. The skills needed are highlighted in Table 2.

Table 2 Pedagogical Skills Required of PSTs to Foster a Physical Literacy Environment

Reaching out to learners	Connecting with individual learners	Engaging (enthusiasm and empathy)	Drawing out (challenges and practices that excite, engage interest, and allow the development of confidence)	Stretching their attitudes and abilities, interests in purposeful physical activity and help them to love learning
Developing a trusting learner–teacher relationship	Generating interest through relatedness, structure, and autonomy (SDT theory)	Creating situations where learners can conquer, cope with or suppress negative feelings toward being involved	Listening, observational skills	Questioning—Open and closed (Andersons (2001) revised Taxonomy)
Creating an exciting/attractive learning environment	Involving learners, giving students ownership of their learning	Generating practices to create a positive and supportive environment	Prompting, leading and building up confidence and competence	Increasing complexity (stage not age)
Creating clear routines, structures, and ground rules	Creating appropriate challenges	Student centered teaching and learning	Creating a safe environment where learners are confident to explore new situations	Encouraging them to dare to take risks in their learning and acquisition of abilities
Treating every learner as an individual	Focusing on the individual making personal progress (not measured against others)	Creative appropriate challenges (stage not age)	Allow learners the freedom to voice their ideas	Helping learners to move beyond personal standards by challenging them through a process of refining, sharpening, and challenging their abilities

Note. PST = preservice teachers. Adapted from “Translating Physical Literacy into Practice for All Teachers,” by L. Almond and M. Whitehead, 2012, *Physical Education Matters*, 3, pp. 67–70.

In bringing together the concept of physical literacy and innovative pedagogical practices, PETE can challenge existing practices of sport-technique-based teaching and allow for the development of physical literacy informed practitioners. Two critical elements are needed to facilitate the physical literacy journey: pupil intrinsic motivation and perceived confidence. Evidence suggests that traditional approaches to teaching PE have not always been successful in facilitating intrinsic motivation or developing perceived competence in all pupils (Kirk, 2013a); therefore, PE has not yet reached its potential as a catalyst to promote lifelong physical activity. Drawing from Nyberg and Larsson’s (2012) work, PETE needs to conceptualize PE through a language of learning and knowing rather than developing knowledge of theory and practice of isolated activities or sports.

Table 2 also depicts the skills needed to be instilled in PSTs so that they can promote physical literacy in an environment where there are high levels of support for each individual learner. Realizing a nurturing environment with improved learner–teacher relationships should allow the greatest opportunity for learners to engage within the learning process (Arora, Leseane, & Raisinghani, 2011). Knowing the importance of a positive and nurturing learning environment is a key attribute in securing a physically literate setting. Positive learning experiences for pupils lead to an increase in motivation, physical competence, and participation. Empowering PSTs to develop a PE curriculum enthused by the foundations of the philosophical idea of physical literacy will ensure that all learners can become competent movers in a range of purposeful physical pursuits.

Facilitating a commitment of PSTs to a set of shared determinants will allow pupils to make knowledgeable choices about what to do with their lives. A collaborative understanding about the creation of a positive learning environment will allow pupils to become perceptive movers in their preferred physical activities. The acceptance of appropriate pedagogies will lead to the creation of shared conditions that facilitate learning and the commitment for

all learners to be physically active for life, which lies at the very heart of physical literacy.

Conclusion

There is a need for teacher educators to facilitate the exploration of the anticipatory phase of PSTs. Describing their physical literacy journeys can be used as a means through which they can make sense of life which is crucial to establishing identity (Fivush, Habermas, Waters, & Zaman, 2011). This process should allow PSTs to examine their beliefs and begin to establish their identity as prospective teachers and the values they have that underpin this. By becoming reflective and reflexive practitioners during the professional phase of their socialization will support and consolidate the application of new ideas that challenge their existing beliefs. In turn, by continually questioning their experiences, they will be able to assimilate new beliefs and develop their own personal philosophy for teaching PE, which is underpinned by the concept of physical literacy. PETE needs to facilitate PSTs in becoming confident innovators and pioneers of radical reform. They need to be equipped and empowered to break the recycling of the traditional curricula, that may, as Kirk (2013a) fears, lead to the extinction of PE.

By utilizing a variety of teaching strategies during a single lesson, PSTs will compliment and support the individual pupil in their development of physical competence (Blankenship & Ayers, 2010). This aspect of pedagogical practice was expanded by Capel and Whitehead (2010), with the inclusion of a range of teaching approaches, for example, by an effective questioning and answering technique with the pupil regarding a performed movement. It is also very important to acknowledge that teaching practitioners need to select an approach which will allow children to successfully develop their motivation, confidence, physical competence, and knowledge and understanding with respect to physical activities.

Children must be able to express themselves and learn about their movement, thus gaining an understanding and awareness of the environment and how their actions can influence future successful involvement in physical activity. By reinforcing the learning by directed questions, the teacher can promote thought and discussion (Kucer & Silva, 2013). Promoting physical literacy within PE, if presented confidently and competently, will help the learner to value physical activity and to take responsibility for participation in physical activity for life.

If teachers are positive and adaptable, they can promote a positive relationship between the learner and physical activity, focusing on the determinants of physical literacy. To design appropriate environments for promoting motivation, confidence, and physical competence, physical educators need a sound theoretical understanding of the learner and of the philosophy of physical literacy.

Within the structure of a classroom or practical PE class environment, learners need to perceive the full support of the teacher, which will enhance their learning (Egan & Webster, 2018). For this reason, effective teaching is key for pupil engagement, and teachers need to make their pupils feel that adults in the learning environment care about them. They also need to understand that they can make important decisions and that the work they are doing directly affects their future learning (Doyle, 1986).

For physical literacy to be embedded efficiently, all three phases of occupational socialization will need to be addressed. Ultimately, by examining beliefs and supporting the construction of teacher identity through the development of professional knowledge and learning processes, PSTs should be able to promote “the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life” (Whitehead, 2015) in children within PE. By ensuring physical literacy is a secure element of their teacher identity and belief system, PSTs will become more resistant to the challenges in the organizational phase such as adopting a pedagogy of necessity (Tinning, 1988) and “wash out” (Zeichner & Tabachnick, 1981). Therefore, they will be sustainable practitioners who will advocate physical literacy and also influence the socialization process of future generations.

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