PHYSICAL LITERACY AND SPORTS PRACTICE. WHICH MODELS OF EDUCATIONAL INTERVENTION?

PHYSICAL LITERACY E PRATICA SPORTIVA. QUALI MODELLI D'INTERVENTO EDUCATIVO?

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ABSTRACT

Sports practice holds significant meaning within the educational process of each individual, and through intentional educational approaches, it allows for the concrete development of Physical Literacy (PL). The aim of this contribution is to address PL as the foundation of both methodological and cultural aspects for sports practice across various levels of competitive qualification, examining the key international models that place PL at the heart of both sports and educational development.

La pratica sportiva assume un significato rilevante all'interno del processo educativo di ogni individuo, e attraverso l'intenzionalità educativa permette lo sviluppo concreto della Physical Literacy. (PL). Obiettivo del contributo è affrontare la PL come costituzione di una base metodologica e culturale per la pratica sportiva secondo vari livelli di qualificazione agonistica, osservando i principali modelli internazionali che pongono la PL al centro dello sviluppo sportivo e scolastico

KEYWORDS
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Introduction

The lack of physical activity is one of the main public health challenges of the 21st century, as most young people do not meet WHO guidelines (Moxley et al., 2022), and this deficiency is reflected in low physical fitness among children and adolescents (Zwinkels et al., 2018).

Given the high global incidence of physical inactivity, various studies have investigated the factors influencing youth participation in physical activity. It has been found that learning motor skills can have a significant and unavoidable impact on physical activity; however, the literature highlights a relationship involving multiple factors beyond mere physical mastery.

From early childhood through various stages of growth, children begin to develop attitudes, knowledge, skills, and habits that can influence long-term engagement in physical activity (Schmutz et al., 2018).

One of the key theoretical elements for promoting lasting participation in physical activity is *Physical Literacy (PL),* a concept that goes beyond motor skills, representing a true educational process that encourages active and conscious engagement in physical activities. Although its origins trace back to the first half of the twentieth century, the concept of PL has only become central in the past two decades, finding applications in fields such as sports, health, and education (Bailey, 2020),

Nowadays, the term *PL* is used by educational and sports organizations to promote holistic development in young people, encompassing the psychomotor, cognitive, and affective domains of learning.

Alongside growing scientific and methodological attention, the value of PL as an educational process has been increasingly recognized in public policy.

The *Global Action Plan on Physical Activity 2018–2030 (GAPPA)*, for example, considers PL an essential tool for addressing low levels of physical activity within the population. Similarly, UNESCO (2017) incorporated the promotion of PL into its guidelines for Quality Physical Education (QPE), aimed at policymakers with the objective of systematically implementing it in educational settings.

The United Nations has also identified PL as a potential target within the Sustainable Development Goals (SDGs) (2030), further underscoring its importance in sustainable development (Dudley et al., 2020).

From an evolutionary perspective, PL is an inclusive and interconnected concept that develops over time, supporting participation in physical activity throughout the lifespan (Faigenbaum, 2018). Various definitions have been proposed to describe PL, adapting to the languages and specific goals of different organizations.

Whitehead (2010) defines PL as the interaction of the motivation, confidence, physical competence, knowledge and understanding to maintain physical activity throughout the life course.
Despite differences in definitions, there is a consensus on the need to understand PL as an educational process that values the relationships among cognitive, physical, emotional, and social factors across various ages. Physically literate youth recognize the value of physical activity, demonstrating competence and confidence in a range of motor skills, approaching activities with enthusiasm and creativity, and adapting to physical and sports challenges (Faigenbaum, 2018).
The journey of PL across different ages can be seen as a continuum, positively or negatively influenced by experiences and interactions with the environment. An individual's PL is not a fixed trait but a framework of related experiences and meanings that requires ongoing development and maintenance.
Children and adolescents can progress or regress along this continuum depending on physical, psychosocial, and environmental factors (Faigenbaum, 2018).

PL as an educational process can be applied in various activities across numerous contexts; primary and secondary schools, as well as the practice of sports, are the areas where the need to clarify methodologies, motor tasks, teaching strategies, and organizational options is most strongly felt, to define educational outcomes and value-based implications.
Specifically, sport is defined as any form of physical activity that, through organized or informal participation, aims to improve physical and mental condition, develop social relationships, or achieve results in competitions at various levels. It encompasses a wide range of activities performed according to defined rules, both recreational and competitive, typically supported by an institutional framework such as a sports agency (WHO, 2008). Furthermore, sports are institutionalized competitive activities that involve intense physical effort or the execution of relatively complex motor skills by individuals motivated by both intrinsic and extrinsic factors (Hsu, 2005).

1. Physical Literacy and Sport Practice

According to philosophical, psychological, and pedagogical models and interpretations, the person is an indivisible whole, composed of organic, cognitive, emotional, and social factors, and shaped by their interconnections (Berthoz, 2006). Therefore, promoting physical literacy (PL) requires the interaction of motor skills, knowledge, and attitudes based on an individual's abilities. PL challenges the

dualistic view that often considers the body and mind as separate entities. By promoting the interconnection between physical and mental dimensions, PL offers an integrated perspective on human development and well-being (Fang et al., 2024).
PL is closely linked to the ability to actively participate in motor activities: children who learn motor skills tend to be more active, while those who are sedentary are often less motivated and less willing to engage in interpersonal relationships through practical activities.
In the process of motor learning, basic motor patterns associated with the use of executive variants represent essential movements for most sports; their lack of acquisition can impair sports performance and consequently reduce enjoyment and self-efficacy.
In this context, sports participation represents an essential opportunity for children to acquire fundamental motor skills such as running, throwing, and kicking, that not only promote future engagement in physical and sports activities but also strengthen confidence and motivation to be physically active.

However, the decline in youth sports participation suggests that current sports practices do not always achieve these goals. Many sports activities, in fact, prematurely emphasize the repetition of specific gestures, limiting the development of a broad motor repertoire and hindering progress in the psychological, emotional, and behavioral domains related to PL (Bell et al., 2019). It has been observed that early sport specialization reduces the opportunities to experience different motor patterns, thus limiting the overall growth of the athlete. Structured motor activities can be organized with different approaches. In a directive and analytical teaching approach, the coach/teacher sets goals, motor tasks, duration, intensity, and execution methods, taking a central role in the learning process and aiming for adherence to ideal movement patterns.
In a non-directive and productive teaching approach, on the other hand, the student explores and experiments, seeking their own solutions, encouraging autonomy and the discovery of motor solutions according to degrees of freedom and personal strategies. This approach is particularly suitable for "open skills" disciplines, where the ability to perceive and solve problems is fundamental (Sannicandro, 2023).
The development of PL can be supported by quality physical education and the adoption of teaching strategies that go beyond increasing the volume of physical activity, including carefully selected activities and targeted methodological choices. Indeed, experiences carried out through the body and movement simultaneously

promote the development of skills, knowledge, and motivations in individuals, in varying degrees and relationships, depending on the activities proposed and the role of the teacher (Colella, 2016).

The cultural framework of reference is that of Sport Pedagogy, which forms the foundation of the teaching-learning process in physical education and youth sports. This field defines the ways in which children and young people can be supported in learning specific sports skills and, most importantly, examines how these skills can translate into personal and social benefits (Annoscia et al., 2024).
Sport Pedagogy focuses on the educational aspects of physical activity, based on two complementary concepts: one oriented toward sports performance, and the other toward personal growth, encompassing biological, psychological, and social dimensions. The latter highlights the possibility of transferring behaviors acquired through sport to other areas of life (Cagical, 1990; Annoscia et al.,2024).
The *Spectrum of Teaching Styles* proposed by Mosston and Ashworth (2008) provides a valuable framework for addressing the complexity of PL and understanding the interactions between teacher and students, the level of autonomy granted, and teaching choices (Colella, 2018). Reproduction teaching styles focus on the imitation of execution models and are useful in complex activities and situations with high emotional involvement, as well as in contexts that require organization and control to ensure safety and success. However, such methodological approaches may limit the expression of individual characteristics of the learner. Nevertheless, some reproduction teaching styles (such as reciprocity and inclusion) promote the development of perceived self-efficacy and metacognitive processes, which are important factors that support and guide motivation to engage in practice.
According to productive and active teaching approaches, such as guided discovery, students are involved in decision-making, thus fostering engagement, participation, and motivation through original and creative motor responses. The problem-solving style encourages exploration and the execution of original responses, promoting autonomous learning. The combination of different teaching styles, each with its own characteristics, proves to be ideal for promoting PL with positive outcomes for healthy lifestyles (Invernizzi et al., 2020).

2. Physical Literacy as the Prerequisite for Sports Practice

Physical Literacy represents not only a key means of increasing participation in physical activity (Higgs, 2010) but also a crucial factor for health, directly influencing

levels of physical activity. PL, in fact, goes beyond mere physical health improvement, positioning itself as a central element in the overall development of the individual, contributing to cognitive growth, emotional well-being, and social integration (Kirk, 2013). It is essential to promote PL in schools, sports activities, and extracurricular experiences to help children and adolescents recognize the value of physical practice for both physical and mental health. This approach supports the development of an active and lasting lifestyle. Furthermore, it is essential for young people to understand the benefits that physical activity brings to their well-being, acquiring knowledge of the principles of holistic health and developing a critical awareness of the importance of physical activity for health and well-being. PL promotes a balance between physical and mental well-being, a balanced and harmonious lifestyle, open to both new challenges and the consolidation of healthy habits (Fang et al., 2024).

An increase in physical activity and sports generates positive *physiological adaptations*: the body responds to stress by improving overall health, including increases in strength and cardiorespiratory capacity, which promote the release of neurotransmitters such as serotonin (Rhodes et al., 2017). In this context, Cairney et al. (2019) explored one of the first models linking PL to health, considering PL a key determinant of health. According to their model, PL influences health through physical activity, the physiological adaptations resulting from regular exercise, and various moderating effects at the individual, social, and environmental levels. Other studies have highlighted relationships between PL and health variables such as body composition, blood pressure, and health-related quality of life (Caldwell et al., 2020).

Childhood obesity, one of the most pressing health issues in developed countries, is closely linked to sedentary lifestyles and is often referred to as the "disease of the 21st century." Obesity has been identified as a factor that negatively affects PL levels (Murphy, 2022). For this reason, Canada has included PL as one of the main initiatives against childhood obesity and physical inactivity since 2010. Moreover, a direct correlation has been demonstrated between body composition and PL levels, highlighting the central role of PL in obesity prevention (Caldwell et al., 2020).

The literature emphasizes that participation in physical activity is strongly influenced by cognitive, emotional/affective, and social domains (Edwards et al., 2017).

The affective domain includes motivation and self-efficacy towards physical activities: individuals with low self-confidence and motivation are less likely to participate (Edwards et al., 2017). For example, a child who has not developed

motor competence tends to avoid physical activity, perceiving a lack of confidence in their abilities and showing little motivation for structured activities (Tremblay et al., 2018).

Motivation is a key element in maintaining consistent engagement, and it can vary along a continuum, ranging from a lack of motivation, where the individual does not perceive a connection between physical activity and its benefits, to intrinsic motivation, where the person engages because they find the activity enjoyable and rewarding. Fun and positive emotions, regardless of the context (physical education, sports, or exercise), are among the main predictors of physically active behaviors.

The cognitive domain includes knowledge and awareness of physical activities, as well as the values of healthy lifestyles for one's health. A deep understanding of activities, their rules, traditions, and values is essential for an individual with high PL. Furthermore, a solid understanding of health and the benefit of an active lifestyle helps to build a cognitive foundation and awareness that emphasize the importance of leading a physically active life.

3. Physical Literacy Models

As previously mentioned, physical literacy has gained significant importance not only in scientific fields but also in international health promotion policies and in curricular contexts. Its value has been highlighted by institutions such as the United Nations (UN) and UNESCO. At the national level, several organizations and associations have aligned their initiatives by assigning a central role to PL.

Among these, notable examples include Canada, with the Sport for Life initiative and the *Long Term Athlete Development (LTAD)* model, which has promoted collaborations between education, recreation, sports, and health; Great Britain, where *Sport England* developed a consensus statement on PL; *SHAPE America*, which has set this concept as a standard for students; and finally, *Sport Australia*, supported by the Australian government, which has highlighted the benefits of PL by defining it specifically for the Australian context.

These initiatives, along with various national organizations, have conceptualized PL in a similar way, albeit with some differences in details, influenced by the language or cultural context of each institution. However, as Bailey (2020) notes, the variations in definitions are not disruptive, but rather serve as inspiring and culturally adapted functions.

Canada was one of the pioneering countries in promoting PL, involving numerous institutions, organizations, researchers, and professionals (Robinson & Randall,

2017). Two government-funded groups, Sport for Life and Physical and Health Education, developed a consensus statement containing an official definition of PL, along with educational programs and assessment tools such as the Canadian Assessment of PL (CAPL). In 2015, the definition from the International PL Association (IPLA) was formally adopted with the goal of enhancing PL, promoting a shared definition, and coordinating the development of educational tools (Sport for Life, 2015). The definition of PL outlines a process in which children, youth, and adults acquire the knowledge, skills, and attitudes to participate in a wide range of physical activities, making healthy choices while respecting the environment and others.

In Canada, many sectors, including sport, education, and public health, have adopted PL as a central priority. Organizations such as *Sport for Life, PL for Life, Physical & Health Education Canada, and the Ontario Society of Physical Activity Promoters in Public Health* have promoted programs that have encouraged cross-sector partnerships, particularly between sport and public health (Trambay et al., 2018).
The key Canadian model is the *Long Term Athletic Development (LTAD),* which places PL at the heart of youth education. This framework supports the harmonious development of young athletes, promoting the achievement of long-term goals rather than immediate successes (Balyi et al., 2015). The model, structured into nine stages, dedicates the first three to the development of PL, aiming to engage young people in physical and sporting activities throughout life, allowing them to become active and confident adults.
The three main objectives of the LTAD are:

1. To create learning pathways tailored to individual needs.
2. To promote an integrated and coordinated sports system between educational agencies and sports programs.
3. To define a shared educational system among professionals in the sports, recreational, health, and educational sectors for the well-being of the community.

In *Australia*, a significant investment in research and initiatives to promote youth participation in sports has led to the development of the *Australian Physical Literacy Framework* (APLF). This framework aims to establish a "common language and a consistent understanding" of physical literacy and how it can be developed. Schools and educators are seen as the primary contexts for promoting PL.

In the Australian framework, PL is defined as "a continuous, holistic learning process, acquired and applied in movement and physical activity contexts. It reflects ongoing changes that integrate physical, psychological, social, and cognitive abilities, and is essential for leading healthy and fulfilling lives through movement". The framework categorizes PL into four main domains: physical, psychological, social, and cognitive. Each domain includes various elements corresponding to specific competencies. Overall, the framework contains 30 elements, with 12 in the physical domain, 7 in each of the psychological and cognitive domains, and 4 in the social domain. Designed for use throughout the lifespan, the APLF divides the PL process into five developmental stages: (a) pre-foundational, (b) foundation and exploration, (c) acquisition and accumulation, (d) consolidation and mastery, and (e) transfer and empowerment. These stages are not linear but represent an evolutionary path in the growth of PL across the lifespan (Sport Australia, 2019).
The APLF helps to identify an individual's abilities across all four domains and provides a common language for effective development, adapting to the full range of skills, ages, and backgrounds. Intended for a wide audience, including parents, children, coaches, and educators, the framework analyzes each developmental stage within every domain, outlining the elements and developmental stages.

While presenting both similarities and differences, the Canadian and Australian models both share an integrated vision of motor and personal development, treating PL as a holistic process that goes beyond simple physical skills. Both aim to build the foundations for positively influencing mental, emotional, and cognitive growth and maturation, while also developing self-efficacy and motivation. Although the Canadian approach is more systematic in its age-based division, both models recognize the need to adapt activities and goals according to the individual's stage of development.

A significant difference between the two approaches is that the Australian framework primarily emphasizes the importance of a positive attitude toward physical activity, while the Canadian model focuses more on the transition from play to sport. The latter model also highlights a final phase of "activity for life," a phase that is not specifically addressed by educators in the Australian framework, although it is still considered essential.
Despite the differences in details, both models complement each other in promoting a culture of health and movement, supporting the physical, psychological, and social development of individuals through movement.

Other countries have developed national consensus statements to promote and encourage PL. In the *United Kingdom*, a declaration was created with the aim of developing a shared understanding among professionals in the fields of sport, education, physical activity, recreation, play, health, and youth activities (Carl et al., 2023). According to Sport England (2023), PL is about the ongoing and evolving relationship with movement, influenced by thoughts, feelings, and experiences. The consensus is based on five key principles, which emphasize the importance of a personal connection with physical activity, commitment to an active lifestyle, and the impact of social and cultural experiences. PL is a right for all, and this is why several institutions have come together to contribute to unifying perspectives on the subject. The key points of the English consensus statement are:

1. *Understanding physic*: PL refers to the degree to which a positive and meaningful relationship with movement and physical activity is developed. It is a complex and ongoing relationship that reflects engagement in movement, influenced by factors such as thoughts, emotions, commitment, and experiences.
2. *Importance of PL*: The quality of the relationship with movement and physical activity profoundly influences the decision to be active. Having a positive relationship with physical activity increases the likelihood of staying active, with benefits for health, well-being, and quality of life.
3. *Supporting PL*: The way we move and think during physical activity plays a decisive role in shaping PL. Enjoyable activities add value, deepening the connection to physical activity and promoting sustained engagement in an active lifestyle.
4. *Experiences influence PL*: The people we interact with, the communities we belong to, the culture we experience, and the places where we move strongly influence PL. These influences can be either positive or negative. Positive experiences, which meet needs and support development, encourage future physical activity.
5. *PL is personal*: Everyone has their own strengths, needs, circumstances, and past experiences that influence their relationship with movement. Therefore, PL is unique and develops throughout life.

In 2014, SHAPE *America* published the *National Standards & Grade-Level Outcomes for K-12 Physical Education*, introducing PL as the central goal of physical education. The proposed definition is: "*Physical literacy is the ability to move competently and confidently in a variety of physical activities that promote healthy development*" (Mandigo et al., 2012). In contrast to the Australian definition, this one place less

emphasis on the permanent nature of PL. Including PL in the standards provides an educational framework to train individuals to be competent in physical activities, encouraging a healthy lifestyle.

In 2015, SHAPE America participated in the Aspen Institute's working group to develop a national strategy for PL. The group defined PL as "the ability, confidence, and desire to be physically active for life." Meanwhile, in 2024, the revision of the national physical education standards emphasized that PL is an ongoing and dynamic process, accompanying students throughout their educational journey, from kindergarten to high school and beyond, promoting individual development that integrates what is learned in physical education.

Conclusions

In the concept of PL, it is essential that children and adolescents recognize the value of physical activity and develop a responsibility toward a long-term active lifestyle. In this process, teachers, coaches, physical activity professionals, and parents play a crucial role by providing young people with opportunities to develop their physical abilities and thus improve the quality of their lives.

To support PL, the physical education and sports curriculum should take a long-term perspective, with planned interventions and continuity between school and extracurricular activities. Models from other countries highlight the importance of adapting PL to cultural and national specificities, while also training teachers and coaches, as some studies indicate that the concept is not yet fully understood among professionals (Belton et al., 2022).

Promoting PL means going beyond the mere selection of content; it is necessary to create environments that foster integrated physical, social, cognitive, and psychological growth. An effective curriculum should be based on evidence-based teaching practices aimed at promoting the holistic development of the individual, inclusive relationships, and open and creative learning.

The focus, therefore, shifts from mere knowledge to methodologies, which must be diverse and personalized to stimulate differentiated learning. Building PL requires structured and synergistic interventions at multiple levels, where the quality of teaching becomes the foundation for a solid PL for future generations.

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