

THE CONTRIBUTION OF PHYSICAL LITERACY FOR THE PROMOTION OF PHYSICAL SELF-EFFICACY IN DEVELOPMENTAL AGE

IL CONTRIBUTO DELLA PHYSICAL LITERACY PER LA PROMOZIONE DELLA PHYSICAL SELF-EFFICACY DELLA IN ETÀ EVOLUTIVA



Double Blind Peer Review

Citation

Ladiana, S., & Annoscia, S. (2025). The contribution of physical literacy for the promotion of physical self-efficacy in developmental age, *Italian Journal of Health Education, Sports and Inclusive Didactics*, 8 (4). <https://doi.org/10.32043/gsd.v8i4.1248>

Doi:

<https://doi.org/10.32043/gsd.v8i4.1248>

Copyright notice:

© 2024 this is an open access, peer-reviewed article published by Open Journal System and distributed under the terms of the Creative Commons Attribution 4.0 International, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

gsdjournal.it

ISSN: 2532-3296

ISBN: 978-88-6022-504-7

ABSTRACT

Physical Literacy (PL) is an integrated educational approach that develops motor skills, motivation, and awareness to foster an active lifestyle. Self-efficacy (SE), the confidence in one's physical abilities, is essential to support motor engagement and skill improvement. Together, PL and SE create a virtuous cycle of learning and motivation, promoting positive experiences that encourage continuous participation and long-term motor development.

La Physical Literacy (PL) è un approccio educativo integrato che sviluppa abilità motorie, motivazione e consapevolezza per favorire uno stile di vita attivo. La self-efficacy (SE), ossia la fiducia nelle proprie capacità fisiche, è fondamentale per sostenere l'impegno motorio e il miglioramento delle competenze. Insieme, PL e SE creano un ciclo virtuoso di apprendimento e motivazione, promuovendo esperienze positive che incentivano una partecipazione continua e lo sviluppo motorio a lungo termine.

KEYWORDS

Physical literacy; self-efficacy; teaching styles.

Alfabetizzazione fisica; autoefficacia; stili di insegnamento.

Received 10/11/2024

Accepted 08/01/2025

Published 13/01/2025

Sara Ladiana
University of Salento - University of Verona
sara.ladiana@unisalento.it



Sabrina Annoscia
University of Cagliari
sabrina.annoscia@unifg.it



1. Physical Literacy: a multifactorial educational model

In recent years, the concept of physical literacy (PL) has been increasingly discussed by researchers, professionals, and policymakers (Bailey, 2020). Physical literacy adopts a holistic approach that integrates various determinants of physical activity, including physical, affective, cognitive, and sometimes social or spiritual factors, depending on the definition used (Keegan et al., 2019; Cairney et al., 2019; Dlugonski et al., 2022).

PL is mentioned in various international documents, such as the World Health Organization's Global Action Plan on Physical Activity 2018–2030, which emphasizes its role in promoting awareness of the benefits of physical activity and improving physical literacy (WHO, 2018). UNESCO's guidelines for physical education also highlight the importance of PL in developing life skills and values (UNESCO, 2015).

According to Whitehead (2010), PL includes four main components: motivation and self-confidence, motor skills, knowledge and awareness, and commitment to engaging in physical activity.

Motor skills alone are not sufficient unless accompanied by the motivation to be active and an understanding of why and how to be active.

Subsequently, the scientific literature has generated numerous definitions and interpretations of PL (Shearer et al., 2018; Martins et al., 2020). The variety of definitions highlights not only the plurality of theoretical approaches but also the importance of considering cultural differences on a global level (Carl et al., 2022; 2024).

Different organizations in various countries, such as the International Physical Literacy Association (IPLA, Australia) and in Canada, define PL as the motivation, self-confidence, and motor skills necessary to engage in physical activities for a lifetime (Tremblay et al., 2018; IPLA, 2017).

The Australian Physical Literacy Framework (APLF) describes it as holistic learning that reflects changes in physical, psychological, social, and cognitive domains (Sport Australia, 2019). More recently, China has added that PL involves the integration of physical, perceptual, and behavioral capacities, promoting an active and healthy lifestyle (Li et al., 2022), while Sport England has defined PL as the ongoing relationship individuals have with movement and physical activity throughout life (Sport England, 2023).

Despite some terminological differences, all definitions of PL reconstruct common philosophical assumptions, such as monism (the idea that all beings can be traced back to a single material or spiritual principle), existentialism (the connection with the environment), and phenomenology (the significance of lived bodily-motor

experiences) (Whitehead, 2013). However, they all highlight a path and an educational process. PL is distinguished from normative or comparative references to external standards of motor or sports performance, promoting an individual-centered approach to inclusive physical activity, contributing to biopsychosocial well-being, and fostering personal growth regardless of motor abilities, age, or physical constitution (Pushkarenko et al., 2020; Rudd et al., 2020; Santos et al., 2022).

The process of designing and implementing physical literacy requires specific skills among practitioners, particularly physical education teachers and coaches (Houser et al., 2023; Paponetti et al., 2023; Hogan et al., 2023). Therefore, PL can contribute to enriching various contexts in which health-oriented physical activity is practiced (Bailey et al., 2023; Dudley et al., 2017; Petrusevski et al., 2022).

However, the adoption of PL presents challenges, such as its limited presence in national and regional guidelines and the difficulty researchers face in maintaining consistency with its philosophical principles (Young et al., 2019). Additionally, practitioners report significant difficulties in applying PL in certain contexts, such as healthcare (Essiet et al., 2022), and interventions often fail to translate PL into appropriate content, with a lack of standardized assessments (Barnett et al., 2023; Young et al., 2020).

Finally, most countries have not yet collected data on the alignment of practices with PL (Whitehead, 2013).

2. Physical Literacy and Self-Efficacy: a positive interdependence

Physical Literacy, defined as the acquisition of skills, motivations, perceived competence, and knowledge to participate in various physical activities, includes perceived self-efficacy, that is, self-confidence in performing specific motor tasks (Whitehead, 2010; Bandura, 1997).

The scientific literature shows that the perception of self-efficacy in motor tasks (physical self-efficacy) significantly influences the level of engagement in physical activities (Bandura, 1997). In fact, individuals with high self-efficacy (SE) tend to perceive challenges as opportunities rather than obstacles, developing greater motivation toward exercise and motor activities in general—one of the central aspects of PL, and crucial for ensuring that individuals can face daily physical challenges and adopt active lifestyles (Whitehead, 2010).

Motor development in children is closely linked to the concept of physical literacy, which enables children to acquire a repertoire of motor skills (Cairney et al., 2019).

This process starts with basic motor patterns and develops according to individual maturation and growth rhythms, also influenced by the opportunities offered by the environment, such as family, school, and community (Colella & Bonasia, 2019). In particular, due to changes in socio-environmental conditions, motor literacy has become one of the main objectives of physical activity. In this context, it can be considered as a precursor to physical activity itself, a circular process that each individual develops through numerous physical-motor experiences, both structured and everyday, leading to an increasing awareness of their own abilities (Colella, 2018).

Physical literacy represents a fundamental element in teaching and learning motor skills. It is not limited to the acquisition of motor skills, improvement of metacognitive abilities, and the creation of interpersonal relationships, but also includes the development of self-efficacy, expressed in a well-defined context (Colella & Bonasia, 2019).

Each child accumulates motor experiences through a variety of interconnected basic skills, which enable them to interact effectively with the surrounding environment, objects, and others (Colella et al., 2010).

This learning process requires and is continually mediated by executive variables (spatial, temporal, quantitative, and qualitative), which, through their interconnections, promote the development of perceptual-coordinative and conditional factors. These factors are crucial during the developmental years and, in a continuous circular process, facilitate the acquisition of increasingly complex and structured motor skills. It is through learning motor skills that the child is able to communicate, process information, and face problem-solving situations, interacting with the environment and progressively integrating their motor repertoire with new responses and adaptations (Gallahue et al., 2012).

Physical literacy can be considered as a pedagogical and methodological framework that adds value and direction to the education of the body through motor experiences, and it is also one of its primary goals. It reflects the level of awareness, autonomy, and responsibility with which an individual chooses, plans, and engages in motor and sports activities, pursuing an understanding of their own well-being and self-care (Whitehead, 2013). Therefore, motor literacy is not only relevant to childhood and adolescence but should extend throughout life, with the aim of improving quality of life through personalized and enjoyable motor experiences that help increase the perception of competence, or the belief in one's ability to successfully master one or more motor tasks.

Physical literacy is a learning process that enables children to acquire a broad and complex motor vocabulary, starting with basic motor skills to promote healthy

lifestyles and develop transferable technical and sports skills for both daily life and sports disciplines. This process is strongly influenced by the learning opportunities provided by the external environment, as well as by individual maturation timelines, especially during growth (Whitehead, 2013; Colella, 2018). Additionally, motor literacy integrates with other forms of disciplinary literacy, contributing to the overall educational development of the individual. Just as reading and mathematics develop a literary or numerical vocabulary, motor literacy builds a vocabulary of movement, composed of basic motor skills, miming gestures, and increasingly advanced technical and sports abilities (Monacis & Colella, 2019).

The interaction between physical literacy and self-efficacy is particularly evident in educational and sports contexts. According to Whitehead (2013), the ability to be physically literate involves not only the acquisition of motor skills but also self-awareness, elements that can enhance a sense of self-efficacy. Individuals who develop fundamental motor skills from childhood are more likely to engage in physical activities even in adulthood because they perceive themselves as having the necessary skills to take on new or more complex activities. Awareness of the level of development of one's motor skills is an essential factor in sustaining a high level of perceived self-efficacy (Robinson & Goodway, 2009).

Perceived self-efficacy is therefore influenced by positive experiences in learning motor skills, as long as these experiences are well-supported methodologically and experienced in educational contexts (Fig. 1).

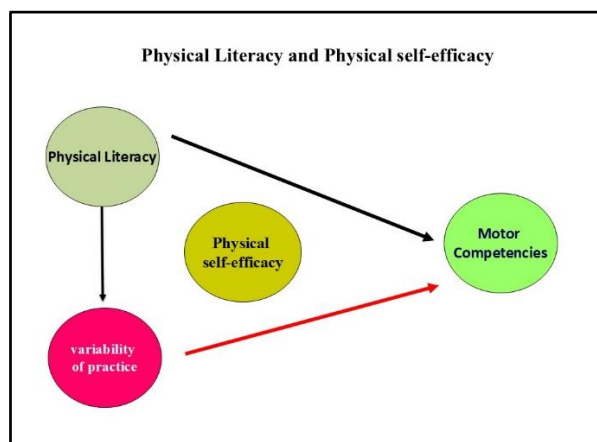


Figure 1 (Physical Literacy and Physical self-efficacy)

Several studies highlight that teaching aimed at promoting success, which encourages the use of positive feedback and the recognition of individual progress, strengthens students' self-efficacy, fostering their engagement in future physical

activities (Cairney et al., 2019). Such approaches not only enhance motor skills but also increase the perception of personal value, laying the foundation for the positive development of physical literacy (Lundvall, 2015).

It is evident that physical literacy and perceived self-efficacy are interdependent concepts that, when developed in parallel, can promote active and sustained participation in physical activities. Encouraging an education that focuses not only on motor skills but also supports the perception of self-efficacy is essential for building active and healthy lifestyle habits (Bailey et al., 2013).

The literature suggests that a motor learning process supported by systematic experiences of success (through methodology) increases the likelihood of long-term adherence to sports and physical exercise, contributing to the overall positive development of individuals (Stodden et al., 2008). An essential and inescapable factor of physical literacy, therefore, is its connection to self-efficacy, or an individual's belief in their ability to perform specific tasks, as described by Bandura (1997).

Physical literacy develops through numerous and varied motor experiences, which promote awareness of one's own motor repertoire (Barnett et al., 2009).

The process of acquiring motor skills is influenced by the individual's perception of their own abilities, and physical self-efficacy plays a key role: greater confidence in one's motor skills can lead to increased participation in motor activities, generating a circular process of learning, improvement, and new learning (Colella et al., 2010).

Self-efficacy not only influences motivation and participation but also has a direct impact on motor performance. Bandura (1997) argues that people with high self-efficacy tend to set more challenging goals, face difficulties with greater resilience, and remain motivated even in the face of setbacks. This behavior is particularly evident in childhood, where confidence in one's motor abilities can encourage children to try new skills, thus contributing to balanced and comprehensive motor development (Rudd et al., 2016).

Self-efficacy, based on Bandura's (1997) social cognitive theory, highlights how personal beliefs significantly influence behavior, guiding not only the level of engagement in a task but also persistence in the face of challenges.

In the context of motor development, children who believe in their motor abilities tend to be more motivated, try new activities, and practice with greater intensity (Feltz & Lirgg, 2001).

The concept of physical literacy, as mentioned earlier, is fundamental in motor development, involving not only motor skills but also motivations, self-confidence, and knowledge to engage meaningfully in physical activity throughout life

(Whitehead, 2010). On the other hand, self-efficacy plays a crucial role in motivating individuals to engage in physical activities. Examining the relationship between these two constructs and their impact on motor development provides valuable insights for interventions and educational practices, as physical literacy is a multidimensional concept that goes beyond learning motor skills, involving the individual in their entirety.

For example, a child who develops fundamental motor abilities but lacks confidence in their skills may not be motivated to actively participate in motor activities. They may tend to avoid motor tasks of varying difficulty, which can have a negative impact on overall motor development (Giblin et al., 2014).

In fact, research has shown that children and adolescents with a high level of physical literacy are more likely to engage in regular sports and physical activities, promoting more harmonious and lasting motor development (Barnett et al., 2016). Furthermore, the concept of physical literacy also implies a positive feedback loop: when an individual succeeds in an activity, it boosts their confidence, which in turn leads to more active participation, further improving motor skills (Stodden et al., 2008).

The development of an individual's motor repertoire, through a variety of experiences in different contexts, fosters perceived self-efficacy through the expression of one's motor skills (Bandura, 1997). Self-efficacy plays a crucial role in regulating learning processes and influencing motor control, accelerating or slowing down the cognitive, motivational, and emotional processes that underlie each individual's behavior (Colella & Bonasia, 2019).

A significant example of the interaction between physical literacy and self-efficacy can be observed in educational programs aimed at improving the latter through positive motor experiences and social support. It has been shown that providing children with opportunities for success in structured environments promotes a sense of personal efficacy, positively influencing their motor behavior and long-term participation (Di Battista & Vivaldo, 2015). On the other hand, low levels of self-efficacy can inhibit participation, limiting exposure to a variety of motor experiences and, consequently, restricting overall development (Colella et al., 2010).

The relationship between PL and SE is complex and mutually reinforcing. Motor skills, components of physical literacy, can directly influence self-efficacy: when individuals perceive improvements in their skills, their belief in their own capabilities grows (Robinson et al., 2015). Consequently, greater self-efficacy

further motivates engagement in physical activity, creating a virtuous cycle that enhances motor development (Di Battista & Vivaldo, 2015).

According to the study by Lubans et al. (2008), school programs that emphasize both motor learning and support for intrinsic motivation can have positive effects on both constructs. Interventions that integrate fun and challenging physical activities with opportunities for success improve self-efficacy and, at the same time, significantly promote physical literacy. This highlights how educational design can optimize motor development through a balanced approach (Di Battista & Vivaldo, 2015).

The integration of physical literacy and self-efficacy has direct implications for motor development, especially during childhood and adolescence. Physical education teachers and coaches must adopt strategies that promote positive experiences and the multilateral learning of motor skills, stimulating both motivation and the perception of self-efficacy. Additionally, it is important to create an environment where mistakes are seen as learning opportunities, helping young people to develop confidence and persistence (Gallahue & Ozmun, 2006).

The relationship between physical literacy and self-efficacy is interactive: the acquisition of motor skills helps promote self-efficacy, while strong self-efficacy encourages further attempts and practice, thereby fueling physical literacy. This synergy is particularly important during growth phases, where positive motor experiences can strengthen confidence and stimulate an active lifestyle (Di Battista & Vivaldo, 2015).

3. Teaching Styles: how to guide motor learning for the development of perceived self-efficacy

The effects of motor activities on motor learning processes and the understanding of the meanings underlying motor experiences do not arise solely from practice, but also from the mediation of teacher behaviors and the intentionality behind the proposed content (Colella & Bonasia, 2019).

Research on the organizational methods of content should be accompanied by reflection on the interaction between teacher and students: this implies a review of educational communication methods, focusing not only on the selection of content, but also on strategies for effectively transmitting it (not just *what* to propose, but *how* to propose it), in order to ensure quality teaching.

The interactions between the cognitive, motor, emotional, and social dimensions—varying in degree, intensity, and timing according to individual needs and the context of application—are influenced by the mediating effects created through the activities conducted and the relational dynamics between teacher and students (Colella, 2016).

In physical education, every body-motor experience, along with activities for assessing motor skills and abilities, contributes to the development of motor self-efficacy, especially during the developmental years. The relationship between teaching and motor learning thus acquires an educational and formative function, influencing the personal growth of the student. In addition to developing motor skills and knowledge, it provides an opportunity to reflect on the learning process, assessing progress and intermediate results in achieving educational goals (Colella et al., 2010).

In the context of movement education, especially at the school level, various teaching strategies can be adopted to promote an increase in perceived self-efficacy, including:

- a) setting appropriate, challenging but realistic learning objectives;
- b) providing gradual experiences of success;
- c) gradually reducing the amount of external assistance;
- d) offering positive feedback, encouragement, and verbal reinforcement;
- e) using peer demonstrations not as a comparison, but to highlight specific motor aspects to observe;
- f) creating a supportive learning environment that fosters acceptance of individual differences (Bortoli & Robazza, 1993; Di Battista & Vivaldo, 2015).

In line with the above, the Spectrum Teaching Styles model by Mosston and Ashworth (2008) serves as a key reference for addressing the complexity of motor competencies and the dynamics between teacher and class.

The Spectrum represents a methodological framework that integrates both quantitative aspects (daily physical activity) and qualitative aspects (content, experiences, and relational dynamics), forming a progressive structure in which teaching control gradually shifts from the teacher (*reproduction styles*) to the student (*production styles*), fostering students' sense of self-efficacy.

There is no "best" style; rather, it is the right balance between *reproduction* styles and *production* styles in the educational communication of each lesson and learning unit that generates meaningful and lasting learning, stimulating different

modes of learning that can be personalized (Goldberger et al., 2012; Monacis et al., 2023).

The sense of physical self-efficacy is built through direct experiences and by taking responsibility for one's actions (Di Battista & Vivaldo, 2015); in this context, the gradual involvement of the student in didactic decisions, as proposed in the Spectrum, allows students to develop confidence in their decision-making and motor abilities.

In particular, structured motor activities performed daily, combined with the opportunity to explore and adapt content and experiences, promote not only the learning of motor skills but also students' perception that they are capable of influencing their progress and achieving set goals.

Furthermore, as the student's responsibility increases, this approach strengthens their confidence in self-regulation and the ability to manage their physical performance, which are fundamental elements for self-efficacy in the motor domain (Bandura, 1997; Di Battista & Vivaldo, 2015). The ability to compare oneself in the motor context primarily concerns the relationship with oneself rather than with others. Consequently, greater importance is placed on individual progress, emphasizing a development path based on personal expectations and goals (Colella et al., 2010).

In particular, the reciprocal and self-checking styles (Table 1) (Mosston & Ashworth, 2008) prove to be particularly effective in promoting educational goals related to the interconnection between physical literacy and physical self-efficacy (Table 2).

Both styles not only support the development of motor competencies and critical abilities but also foster autonomy and confidence in one's skills while engaging in the motor experience. In this case, the student (and the teacher) is one of the sources of physical self-efficacy (Bandura, 1977).

The reciprocity style is characterized by a collaborative social interaction in which the learning process takes place between classmates (peer education). Students work in pairs: one performs a motor task, while the other observes and provides immediate feedback; the teacher supervises. This feedback is structured based on specific criteria pre-established by the teacher, who takes on a guiding role rather than a direct evaluator.

The teacher's role in the preparatory and organizational phase is as follows:

1. Present the motor task and objectives, so that students understand what task they need to perform and the execution methods.
2. Establish evaluation criteria by selecting skills and execution variations that students need to focus on (for example, posture or rhythm).
3. Organize the activity by forming pairs or groups and defining the operational space.
4. Teach students how to communicate feedback constructively, to improve the partner's performance and maintain a positive learning environment.

The interaction between students, based on immediate feedback, develops critical observation skills, communication, and responsibility, as students not only perform the task but also take

responsibility for monitoring and guiding the performance of their peers. This approach promotes greater awareness of movement and encourages cooperation, while the teacher supervises (Mosston & Ashworth, 2008; Colella, 2016).

Table 1 (Reciprocity Style Oriented Towards Perceived Self-Efficacy)

The self-check style stimulates the metacognitive process and encourages a more autonomous form of learning, in which the student reflects on the skills performed and compares the required performance with the performance actually executed.

In this style, the teacher defines the motor tasks and provides the evaluation criteria, but leaves the responsibility for assessing their own performance to the student.

Thus, the teacher acts as a guide, but the majority of the evaluation process is conducted by the student themselves.

Self-assessment occurs through the following phases:

1. Definition of the task and objectives by the teacher, who clearly explains what is expected from the students and which motor skills or key points of the action should be considered.
2. Communication of the self-assessment criteria, which include specific elements of movement, technique, or sequence that should be observed.
3. Observation and independent assessment: the student performs the task and critically reflects on how they executed the various phases, evaluating themselves according to the pre-established criteria.
4. Reflective feedback: through practice and reflection, the student is encouraged to improve their performance consciously and independently.

This style promotes learning based on metacognition, which is essential for developing self-assessment and independent improvement abilities. It allows students to become aware of their strengths and areas for improvement, increasing their sense of responsibility for their own learning journey.

(Mosston & Ashworth, 2008; Colella, 2016).

Table 2 (Self-Check Style Oriented Towards Perceived Self-Efficacy)

Through the *reciprocity style* and peer feedback communication, the teacher not only facilitates the improvement of motor skills but also contributes to structuring a system of mutual information that enhances the sources of perceived self-efficacy (the peers), an essential factor for the growth of self-efficacy itself and the development of physical literacy.

By taking on the responsibility of observing and assessing a peer according to established criteria, students develop the ability to recognize and evaluate motor skills both in themselves and in others, consolidating the awareness and confidence necessary for self-improvement.

Similarly, the *self-check style* aligns perfectly with the goal of fostering self-aware and autonomous students. In this context, self-efficacy is strengthened by the opportunity to self-assess against defined criteria: students learn to identify their progress and pinpoint areas for improvement, reinforcing their confidence in mastering increasingly complex motor skills. This practice promotes greater

awareness, key principles of physical literacy, and enables students to be active participants in their own growth journey.

Through these styles, Mosston and Ashworth (2008) emphasize the teacher's role as a facilitator and mediator of learning, who, while setting goals and evaluation criteria, allows space for students to acquire skills and knowledge and develop increasing control over their performance.

In this way, students not only refine their motor skills but also build a growth-oriented mindset and a commitment to continuous improvement—pedagogical foundations of physical literacy and self-efficacy.

Both styles highlight the responsibility and active engagement of students, but in different ways:

- In the *reciprocity style*, assessment is guided by a peer, fostering a collaborative atmosphere through the recognition of one's own and others' strengths and limitations.

- In the *self-check style*, the student fully takes responsibility for their own learning, with an emphasis on reflection-metacognition and the ability to critically judge their own performance.

These two approaches allow the teacher to differentiate instruction to respond to individual students' needs and group dynamics, thereby contributing to the development of motor and social abilities, as well as critical and reflective abilities that are essential in the overall educational process of students (Mosston & Ashworth, 2008).

Conclusions

Physical literacy is a concept that encompasses not only motor skills but also the motivation required to actively participate in physical activities, within which self-efficacy can be developed through experiences of success, reflection, and self-assessment.

This process allows individuals to gain confidence in their abilities, tackle challenges with greater determination, and adopt active and sustainable lifestyles over the long term.

Physical literacy and self-efficacy are interconnected and play a crucial role in motor development. Promoting adequate physical literacy from a young age, alongside targeted interventions to enhance self-efficacy, can significantly contribute to a healthy and active future.

The synergy between PL and SE represents a powerful tool for supporting motor development.

Educators, parents, and policymakers must understand the importance of these constructs and collaborate to generate educational antecedents and opportunities that inspire children and young people to remain physically active, promoting a healthy and fulfilling life.

It would be crucial to standardize the definitions of physical literacy in order to create international consensus and alignment across different countries, providing a foundation for sharing methodological guidelines. A shared approach would help ensure a common understanding of the meaning and interpretation, facilitating the implementation of consistent educational policies and practices globally, and promoting the development of motor and physical competencies in a uniform manner.

Physical literacy is a concept that encompasses not only motor skills but also the motivation required to actively participate in physical activities, within which self-efficacy can be developed through experiences of success, reflection, and self-assessment.

This process allows individuals to gain confidence in their abilities, tackle challenges with greater determination, and adopt active and sustainable lifestyles over the long term.

Physical literacy and self-efficacy are interconnected and play a crucial role in motor development. Promoting adequate physical literacy from a young age, alongside targeted interventions to enhance self-efficacy, can significantly contribute to a healthy and active future.

The synergy between PL and SE represents a powerful tool for supporting motor development.

Educators, parents, and policymakers must understand the importance of these constructs and collaborate to generate educational antecedents and opportunities that inspire children and young people to remain physically active, promoting a healthy and fulfilling life.

It would be crucial to standardize the definitions of physical literacy in order to create international consensus and alignment across different countries, providing a foundation for sharing methodological guidelines. A shared approach would help ensure a common understanding of the meaning and interpretation, facilitating the implementation of consistent educational policies and practices globally, and promoting the development of motor and physical competencies in a uniform manner.

References

- Bailey, R. (2020). Defining physical literacy: making sense of a promiscuous concept. *Sport in Society*, 25(1), 163–180. <https://doi.org/10.1080/17430437.2020.1777104>
- Bailey, R., Glibo, I., Koenen, K., & Samsudin, N. (2023). What is physical literacy? An international review and analysis of definitions. *Kinesiology Review*, 1–14. <https://doi.org/10.1123/kr.2023-0003>
- Bailey, R., Hillman, C., Arent, S., & Petitpas, A. (2013). Physical activity: an underestimated investment in human capital?. *Journal of physical activity & health*, 10(3), 289–308. <https://doi.org/10.1123/jpah.10.3.289>
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.
- Barnett, L. M., Jerebine, A., Keegan, R., Watson-Mackie, K., Arundell, L., Ridgers, N. D., Salmon, J., & Dudley, D. (2023). Validity, Reliability, and Feasibility of Physical Literacy Assessments Designed for School Children: A Systematic Review. *Sports medicine (Auckland, N.Z.)*, 53(10), 1905–1929. <https://doi.org/10.1007/s40279-023-01867-4>
- Barnett, L. M., Lai, S. K., Veldman, S. L. C., Hardy, L. L., Cliff, D. P., Morgan, P. J., Zask, A., Lubans, D. R., Shultz, S. P., Ridgers, N. D., Rush, E., Brown, H. L., & Okely, A. D. (2016). Correlates of Gross Motor Competence in Children and Adolescents: A Systematic Review and Meta-Analysis. *Sports medicine (Auckland, N.Z.)*, 46(11), 1663–1688. <https://doi.org/10.1007/s40279-016-0495-z>
- Barnett, L. M., van Beurden, E., Morgan, P. J., Brooks, L. O., & Beard, J. R. (2009). Childhood motor skill proficiency as a predictor of adolescent physical activity. *The Journal of adolescent health: official publication of the Society for Adolescent Medicine*, 44(3), 252–259. <https://doi.org/10.1016/j.jadohealth.2008.07.004>
- Bortoli, L., & Robazza, C. (1993). Le aspettative personali di efficacia nell'apprendimento motorio e nella prestazione. *Didattica del movimento*, 86, 48–56.
- Cairney, J., Dudley, D., Kwan, M., Bulten, R., & Kriellaars, D. (2019). Physical Literacy, Physical Activity and Health: Toward an Evidence-Informed Conceptual Model. *Sports medicine (Auckland, N.Z.)*, 49(3), 371–383. <https://doi.org/10.1007/s40279-019-01063-3>
- Carl, J., Bryant, A. S., Edwards, L. C., Bartle, G., Birch, J. E., Christodoulides, E., Emeljanovas, A., Fröberg, A., Gandrieau, J., Gilic, B., Van Hilvoorde, I., Holler, P., Ionomescu, T. M., Jaunig, J., Laudanska-Krzeminska, I., Lundvall, S., De Martelaer, K., Martins, J., Mieziene, B., . . . Elsborg, P. (2022). Physical literacy in Europe: The current state of implementation in research, practice, and policy. *Journal of Exercise Science & Fitness*, 21(1), 165–176. <https://doi.org/10.1016/j.jesf.2022.12.003>

Carl, J., Mazzoli, E., Mouton, A., Sum, R. K., Singh, A., Niederberger, M., Martins, J., Kriellaars, D., Green, N., Elsborg, P., Dudley, D. A., Cairney, J., Barratt, J., & Barnett, L. M. (2024). Development of a Global Physical Literacy (GloPL) Action Framework: Study protocol for a consensus process. *PLoS ONE*, 19(8), e0307000. <https://doi.org/10.1371/journal.pone.0307000>

Colella, D. (2016). Teaching styles, motor learning and educational process. *Formazione & Insegnamento*, 14(1 Suppl.), 25–34. Retrieved from <https://ojs.pensamultimedia.it/index.php/siref/article/view/1874>

Colella, D. (2018). Alfabetizzazione fisica e stili di insegnamento. Riorientare l'educazione fisica a scuola. *Formazione & Insegnamento*, 16 (1 Suppl.), 33–42.

Colella, D., & Bonasia, M. (2019). Teaching styles, physical literacy and Perceived Physical Self-Efficacy. Results of a learning unit in primary school. *Turkish Journal of Sports Medicine*, 54(Suppl1), 1–7. <https://doi.org/10.5152/tjism.2019.145>

Colella, D., Sirressi, A., & Morano, M. (2010). Prestazione motoria e percezione di sé. Sviluppo motorio, autoefficacia e pratica sportiva in età evolutiva. *SDS. SCUOLA DELLO SPORT*, 55-63.

Di Battista, R., Vivaldo, D. (2015). La percezione di efficacia in educazione fisica. *Giornale Italiano di Psicologia dello Sport*, 23, 3-8.

Dlugonski, D., Gadd, N., McKay, C., Kleis, R. R., & Hoch, J. M. (2022). Physical Literacy and Physical Activity across the Life Span: A Systematic review. *Translational Journal of the American College of Sports Medicine*, 7(3). <https://doi.org/10.1249/tjx.0000000000000201>

Dudley, D., Cairney, J., Wainwright, N., Kriellaars, D., & Mitchell, D. (2017). Critical considerations for physical literacy policy in public health, recreation, sport, and education agencies. *Quest*, 69(4), 436–452. <https://doi.org/10.1080/00336297.2016.1268967>

Essiet, I. A., Warner, E., Lander, N. J., Salmon, J., Duncan, M. J., Eyre, E. L. J., & Barnett, L. M. (2022). Exploring Australian teachers' perceptions of physical literacy: a mixed-methods study. *Physical Education and Sport Pedagogy*, 29(1), 18–37. <https://doi.org/10.1080/17408989.2022.2028760>

Feltz, D. L., & Lirgg, C. D. (2001). Self-efficacy beliefs of athletes, teams, and coaches. *Handbook of Sport Psychology*, 2, 340-361.

Gallahue, D. L., & Ozmun, J. C. (2006). Understanding motor development: Infants, children, adolescents, and adults (7th ed.). McGraw-Hill.

Gallahue, DL, Ozmun, JC, & Goodway, J. (2012). *Understanding Motor Development: Infants, Children, Adolescents and Adults* (7a ed.). New York, Londra: McGraw-Hill.

Giblin, S., Collins, D., & Button, C. (2014). Physical literacy: importance, assessment and future directions. *Sports medicine* (Auckland, N.Z.), 44(9), 1177–1184. <https://doi.org/10.1007/s40279-014-0205-7>

Goldberger, M., Ashworth, S., & Byra, M. (2012). Spectrum of Teaching Styles Retrospective 2012. *Quest*, 64(4), 268–282. <https://doi.org/10.1080/00336297.2012.706883>

Hogan, J., Penney, D., O'Hara, E., & Scott, J. (2023). Stakeholder perceptions of the feasibility of e-portfolio-based assessment of physical literacy in primary health and physical education. *Physical Education and Sport Pedagogy*, 1–17. <https://doi.org/10.1080/17408989.2023.2287523>

Houser, N., & Kriellaars, D. (2023). "Where was this when I was in Physical Education?" Physical literacy enriched pedagogy in a quality physical education context. *Frontiers in sports and active living*, 5, 1185680. <https://doi.org/10.3389/fspor.2023.1185680>

IPLA. International Physical Literacy Association. (2017). <https://www.physical-literacy.org.uk/>

Keegan, R. J., Barnett, L. M., Dudley, D. A., Telford, R. D., Lubans, D. R., Bryant, A. S., Roberts, W. M., Morgan, P. J., Schranz, N. K., Weissensteiner, J. R., Vella, S. A., Salmon, J., Ziviani, J., Okely, A. D., Wainwright, N., & Evans, J. R. (2019). Defining Physical Literacy for Application in Australia: A Modified Delphi method. *Journal of Teaching in Physical Education*, 38(2), 105–118. <https://doi.org/10.1123/jtpe.2018-0264>

Li, M. H., Whitehead, M., Green, N., Ren, H., Cheng, C., Lin, L. L., Lin, C., Liu, Y., Wen, X., Lei, S. M., Li, H., Shy, D., Tang, Y., Choi, S. M., Huang, Y., Ma, R., Wang, F. J., Chen, S., & Sum, R. K. (2022). Operationally defining physical literacy in Chinese culture: Results of a meta-narrative synthesis and the Panel's recommendations. *Journal of Exercise Science & Fitness*, 20(3), 236–248. <https://doi.org/10.1016/j.jesf.2022.04.003>

Lubans, D. R., Foster, C., & Biddle, S. J. (2008). A review of mediators of behavior in interventions to promote physical activity among children and adolescents. *Preventive medicine*, 47(5), 463–470. <https://doi.org/10.1016/j.ypmed.2008.07.011>

Lundvall, S. (2015). Physical literacy in the field of physical education – A challenge and a possibility. *Journal of Sport and Health Science*, 4(2), 113-118. <https://doi.org/10.1016/j.jshs.2015.02.001>

Martins, J., Onofre, M., Mota, J., Murphy, C., Repond, R., Vost, H., Cremonini, B., Svrdlim, A., Markovic, M., & Dudley, D. (2020). International approaches to the definition, philosophical tenets, and core elements of physical literacy: A scoping review. *Prospects*, 50(1–2), 13–30. <https://doi.org/10.1007/s11125-020-09466-1>

Monacis, D., Annoscia, S., Limone, P., & Colella, D. (2023). Examining the effects of reproductive and productive teaching styles interventions on primary schoolchildren. What implications for physical education teachers? *Physical Education Theory and Methodology*, 23(6), 839–849. <https://doi.org/10.17309/tmfv.2023.6.05>

Monacis, D., Colella, D. (2019). Il contributo delle tecnologie per l'apprendimento e lo sviluppo di competenze motorie in età evolutiva. *Giornale Italiano della Ricerca Educativa – Italian Journal of Educational Research* - Pensa MultiMedia Editore srl – ISSN 2038-9744- DOI10.7346/SIRD-012019-P31

Mosston, M., & Ashworth, S. (2008). Teaching physical education.

Paponetti, M. K., Zwolski, C., Porter, R., & Paterno, M. V. (2022). Leveraging the construct of physical literacy to promote physical activity for youth with obesity - A qualitative analysis of physical therapists' perceptions. *Obesity pillars*, 5, 100054. <https://doi.org/10.1016/j.obpill.2022.100054>

Petrusevski, C., Morgan, A., MacDermid, J., Wilson, M., & Richardson, J. (2022). Framing physical literacy for aging adults: an integrative review. *Disability and rehabilitation*, 44(26), 8149–8160. <https://doi.org/10.1080/09638288.2021.2012841>

Pushkarenko, K., Dunn, J. C., & Wohlers, B. (2020). Physical literacy and inclusion: A scoping review of the physical literacy literature inclusive of individuals experiencing disability. *Prospects*, 50(1–2), 107–126. <https://doi.org/10.1007/s11125-020-09497-8>

Robinson, L. E., & Goodway, J. D. (2009). Instructional climates in preschool children who are at-risk. Part I: object-control skill development. *Research quarterly for exercise and sport*, 80(3), 533–542. <https://doi.org/10.1080/02701367.2009.10599591>

Robinson, L. E., Stodden, D. F., Barnett, L. M., Lopes, V. P., Logan, S. W., Rodrigues, L. P., & D'Hondt, E. (2015). Motor Competence and its Effect on Positive Developmental Trajectories of Health. *Sports medicine (Auckland, N.Z.)*, 45(9), 1273–1284. <https://doi.org/10.1007/s40279-015-0351-6>

Rudd, J. R., O'Connor, J., & Wormald, M. (2016). The importance of physical literacy in the development of children's self-efficacy in sports. *Physical Education and Sport Pedagogy*, 21(3), 291-307.

Rudd, J. R., Pesce, C., Strafford, B. W., & Davids, K. (2020). Physical Literacy - A Journey of Individual Enrichment: An Ecological Dynamics Rationale for Enhancing Performance and Physical Activity in All. *Frontiers in psychology*, 11, 1904. <https://doi.org/10.3389/fpsyg.2020.01904>

Santos, F., Newman, T. J., Aytur, S., & Farias, C. (2022). Aligning Physical Literacy With Critical Positive Youth Development and Student-Centered Pedagogy: Implications for Today's Youth. *Frontiers in sports and active living*, 4, 845827. <https://doi.org/10.3389/fspor.2022.845827>

Shearer, C., Goss, H. R., Edwards, L. C., Keegan, R. J., Knowles, Z. R., Boddy, L. M., Durden-Myers, E. J., & Fowweather, L. (2018). How is physical literacy defined? A contemporary update. *Journal of Teaching in Physical Education*, 37(3), 237–245. <https://doi.org/10.1123/jtpe.2018-0136>

Sport Australia. (2019). The Australian Physical Literacy Framework. <https://www.pescholar.com/research/the-australian-physical-literacy-framework/>

Sport England. (2023) Physical Literacy Consensus Statement for England. [updated 2023-09-28.

Stodden, D. F., Goodway, J. D., Langendorfer, S. J., Roberton, M. A., Rudisill, M. E., Garcia, C., & Garcia, L. E. (2008). A developmental perspective on the role of motor skill competence in physical activity: An emergent relationship. *Quest*, 60(2), 290-306. <https://doi.org/10.1080/00336297.2008.10483582>

Tremblay, M. S., Costas-Bradstreet, C., Barnes, J. D., Bartlett, B., Dampier, D., Lalonde, C., Leidl, R., Longmuir, P., McKee, M., Patton, R., Way, R., & Yessis, J. (2018). Canada's Physical Literacy Consensus Statement: process and outcome. *BMC public health*, 18(Suppl 2), 1034. <https://doi.org/10.1186/s12889-018-5903-x>

UNESCO. (2015) Quality Physical Education (QPE): Guidelines for Policy-makers. Paris. <https://unesdoc.unesco.org/ark:/48223/pf0000231101>

Whitehead, M. (2010). *Physical Literacy: Throughout the Lifecourse*. London: Routledge.

Whitehead, M. (2013). Definition of physical literacy and clarification of related issues. ICSSPE Bulletin: *Journal of Sport Science and Physical Education*, 65, 28-32.

World Health Organization. (2018). *More active people for a healthier world: Global action plan on physical activity 2018–2030*. Geneva: World Health Organization. 101 p.

Young, L., O'Connor, J., & Alfrey, L. (2019). Physical literacy: a concept analysis. *Sport Education and Society*, 25(8), 946–959. <https://doi.org/10.1080/13573322.2019.1677586>

Young, L., O'Connor, J., Alfrey, L., & Penney, D. (2020). Assessing physical literacy in health and physical education. *Curriculum Studies in Health and Physical Education*, 12(2), 156–179. <https://doi.org/10.1080/25742981.2020.1810582>