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Motor play: inclusive value, strategies for learning

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Riassunto:
La scuola primaria ha come obiettivo l'"alfabetizzazione" degli alunni in diversi linguaggi, inclusa quella motoria. L'obiettivo dell'alfabetizzazione motoria è quello di sviluppare in modo completo ed efficace le competenze motorie fondamentali, permettendo a tutti i bambini di acquisire un repertorio linguistico-motorio in base ai loro ritmi di crescita individuali e alle opportunità offerte dall'ambiente circostante. Questo processo di apprendimento avviene mediante l'utilizzo di schemi motori e con il gioco motorio. Durante la fase che va dalla scuola dell'infanzia ai primi anni di scuola primaria, i bambini acquisiscono competenze motorie di base che permettono loro di interagire efficacemente con gli altri, con l'ambiente e con gli oggetti. Questo processo è influenzato da variazioni spaziali, temporali, quantitative e qualitative, così come dalle relazioni reciproche che favoriscono lo sviluppo motorio (Varalda, 2017). Vi è la necessità da parte degli insegnanti di orientare la loro azione didattica verso la physical literacy tenendo in considerazione l'acquisizione di capabilities adeguate alle proprie possibilità, volgendo un attento sguardo agli alunni con disabilità ed alle nuove tecnologie.

Parole chiave: Alfabetizzazione motoria, gioco motorio, gioco inclusivo, tecnologie inclusive, competenze motorie.

Abstract:
The primary school aims to "literacy" pupils in different languages, including motor literacy. The aim of motor literacy is to develop fundamental motor skills in a comprehensive and effective manner, enabling all children to acquire a motor-linguistic repertoire according to their individual growth rates and the opportunities offered by their environment. This learning process takes place through the use of motor schemes and motor play. During the phase from pre-school to the first years of primary school, children acquire basic motor skills that enable them to interact effectively with others, the environment and objects. This process is influenced by spatial, temporal, quantitative and qualitative variations, as well as reciprocal relationships that foster motor development (Varalda, 2017). There is a need for teachers to orient their didactic action towards physical literacy, taking into consideration the acquisition of capabilities appropriate to one's own possibilities, turning an attentive eye to pupils with disabilities and new technologies.

Keywords: Key words: Physical literacy, motor play, inclusive play, inclusive technologies, motor skills.

Introduction

According to guidelines published by the WHO on physical activity and sedentary behaviour, if the world population were more active, more than 5 million deaths per year could be prevented. They emphasise that anyone can be physically active, regardless of age and ability, and that all kinds of movement are important.

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In the period between 2001 and 2016, this percentage also increased in high-income countries, leading to an increased mortality risk for those who are not sufficiently active. In particular, the risk of death increases from 20 to 30 per cent in people who do not engage in sufficient physical activity compared to those who do. To counteract the high degree of sedentariness, the WHO has developed recommendations for all age groups:

CHILDREN 1-2 years:

-At least 180 minutes of physical activity of any intensity during the day is recommended;

- It is important to avoid sitting for too long and to limit the use of screens for 1-year-olds, while for 2-year-olds it is recommended not to exceed one hour a day of screen time;

- During rest periods, reading stories is encouraged;

- In addition, a sleeping time of 11-14 hours, including regular naps, is recommended.

CHILDREN aged 3-4 years:

- must perform at least 180 minutes of physical activity per day, of any type and intensity, with at least one hour at moderate or vigorous intensity;

- They should not sit for more than one hour consecutively in prams or chairs, and spending more than one hour a day in front of screens is not recommended;

- It is recommended that they get 10-13 hours of good quality sleep, including naps and with constant and regular wake-up times (Casolo, Musaro, Nosari 2019).

CHILDREN AND ADOLESCENTS 5-17 years:

-should perform at least 60 minutes a day of moderate to vigorous intensity physical activity, especially aerobic, throughout the week;

-It is also recommended to supplement physical activity with intense aerobic exercises at least three times a week, along with exercises that strengthen muscles and bones;

- Time spent idle, especially in front of the screen, must be limited.

- It is important to limit the amount of time spent sedentary and try to do as much physical activity as possible, even while sitting or lying down, to reduce the harmful effects on health (Baumgartner, 2022).

We can state that the WHO recommends at least 60 minutes of moderate/vigorous physical activity per day to foster the full development of children. This not only improves physical health, but also promotes the development of interpersonal, cognitive, moral and self-control skills. In fact, already in primary school, it is important to organise school space and time appropriately to provide opportunities for children to exercise.

In Italian schools, two hours per week are currently dedicated to teaching physical activity. The ministerial indications for the primary school curriculum establish four specific movement learning objectives: the body; body language; play and sport; health and well-being. If used effectively for at least 20 weeks, these guidelines can lead to an average annual increase of 6% in children's motor skills, together with improved motor skill development and a slightly modified lifestyle.

In the school context, physical activity can be promoted during lessons by combining the theoretical with the practical approach (Alberici, 2002). By using the gymnasium as a setting, topics from different disciplines such as mathematics, geography and languages can be taught, allowing students to experience real-life situations. This

approach encourages integrated learning and physical activity throughout the school day. Physical literacy is a fundamental and valuable human capacity, which can be described as a required disposition of human individuals that includes motivation, conviction, physical competence, knowledge and understanding that establish physical goals as an integral part of their lifestyle (Withehead's 2013a).
The fundamental and significant aspects of physical literacy are:
- Everyone's path to physical literacy is unique
- physical literacy is relevant and valuable at all stages and ages of life
- the concept encompasses much more than physical competence
- At the heart of the concept is the motivation and commitment to be active.
- a physically literate individual appreciates and takes responsibility for maintaining physical goals throughout life.

The principle that our body is as important to life as our intellect is at the core of the concept of physical literacy. In order to develop physical literacy, children must learn fundamental movement and sports skills in each of the four basic environments:
1. On the ground: as the basis for most games, sports, dance and physical activities.
2. In the water: as a basis for all water activities.
3. On snow and ice: as a basis for all winter sliding activities.
4. In the air: base for gymnastics, diving and other aerial activities.

(Balyi, Via, Norris, Cardinal & Higgs, 2005; Higgs, Balyi, Way, 2005)

1. Inclusive value of play

Play is a tool through which it is possible to promote the development of transversal skills such as problem-solving, collaboration and planning. It is absolutely important to try to highlight how play becomes determinant in children's education and to affirm that it is important not only for the learning stages, but above all as a driving force for a transformation and evolution of the didactics that is done at school.Through play children express themselves, in an almost instinctive manner, and through play they grow, are formed and develop not only physical and motor skills but also cognitive ones. It is through play that they begin to learn about the first dynamics of group relations, face their first emotions and thus the world around them. On their delicate evolutionary journey, children learn dynamics, knowledge, skills and in a completely natural way, as play itself is, they gain experiences that are determined not only for their physical but also emotional and social growth. It is through their bodies, discovering gestures, skills, ways of doing and moving, that children experience play and develop senses, muscles, intellect. When children play in groups, the rules become decisive and represent a moment of sharing within a phase in which conflicts may also be generated, but also methodologies and tools that seek to resolve such moments of conflict; this allows the relational and sharing aspect to be known and becomes decisive in guiding children to develop empathy, languages, the discovery of the other. In the context of play, all children experience how to settle clashes, learning how to mediate in order to resolve the issues that arise, and understand how to use rules to modify the mode and duration of play. Play then can become the picklock, the flywheel for a future and imminent change in the school, using new forms of learning that include the playful aspect within lessons, experimenting with the construction of specific objects according to the subject taught, using natural elements, discovering the world around us through

the use of objects and materials. There are certain forms of play that are recurrent and universal: tonic-functional play, sense-motor play and symbolic play. Tonic-functional play, which is also suitable in the first months of life, consists of forms of play that help relieve tensions by stimulating relaxation, bring harmony in body to body with another person or object, and are called deep reassurance games. Symbolic play allows the simulation of roles and rules, they offer the possibility of escaping from reality and recreating a fantasy world, creating occasions in which one can experiment and experience oneself and the world, and one is trained in the social dimension. They are games that reactivate sensory perceptions through the senses, the body and the objects present. In sense-motor play, the entire body is involved, acquiring full knowledge of the bodily self, through careful mediation between one's own desires and abilities and the external world characterised by the obstacles to be overcome. With spontaneity and gradualness, using sense-motor play experiences, the children experience the body starting with purely physical actions such as running and jumping and then beginning to add emotion games, experimenting with new postures and skills, getting to know their own strength and endurance. Games help to refine praxic skills, for the formation of the child's body identity, the perception of one's body placed in a space and time; it helps to increase skills and the development of motor patterns. Motor play represents a medium for spontaneous activity with a strong educational significance, because it utilises natural and spontaneous movement through pleasant and stimulating activities. Play, considered in this context, is not just a leisure activity, but a powerful learning tool. During playtime, children learn naturally, without the pressure of school formality or the obligation to achieve a specific result. This type of learning, often referred to as “informal learning” or “learning through play”, allows children to develop a wide range of skills in a safe and stimulating environment. Learning through play is integrated and holistic. As children play, they are not simply learning one thing at a time; rather, they are simultaneously developing a range of interconnected skills. This process is driven by the child's interest and curiosity, making learning more meaningful and lasting. Play, in this case, can also be used as an inclusive and integrative tool within a social and school context. In this perspective, play, for children with special educational needs, becomes a moment of experience, in which the child accepts himself, in which he develops his sociality, his affectivity. In short, play restores to the child with special educational needs an experience that is dominated by fears and difficulties. Play plays a fundamental role in the inclusion of students with Special Educational Needs (SEN), as it provides a natural and stimulating context for learning and socialisation. Inclusive experiences through play can be particularly effective in promoting interaction between students with and without SEN, fostering an inclusive and welcoming learning environment. Play, particularly in its cooperative forms, is an excellent tool for promoting collaboration among students. Activities such as group games or creative projects that require teamwork help develop social and communication skills. In this context, students with NES have the opportunity to interact with their peers in a non-competitive and more informal environment where differences can be appreciated and valued. During a joint project-building activity, students have to work together to achieve a goal. Game activities can be adapted to meet the specific needs of students with NES. Customising game activities allows all pupils to participate meaningfully and feel included. It is essential to modify teaching methods and educational materials to

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make them more accessible and engaging for all learners. Adaptations may include the use of multimedia resources, changes in the way tests are administered, and the inclusion of activities that stimulate students' interest and active participation. Targeted interventions, such as tutoring, psychological and therapeutic support, and the use of assistive technology, are essential to respond to students' specific difficulties. These interventions must be designed to address individual problems and to support the child in overcoming his or her educational challenges.

Some of the new teaching strategies derive from enactivism, which argues that the cognitive structures of the mind emerge from the sensorimotor dynamics between the agent and the natural environment, allowing the action to be perceptually guided. Conscious experience is thus naturally linked to sensorimotor interactions between subject and external environment. This means that conscious experience depends not only on neural activity, but also on the way it is embedded in sensorimotor dynamics involving the subject and the environment. Consciousness develops through the interaction between brain, body and natural environment, according to the theories of "Learning by doing" and "Embodied Cognition". These theories argue that engaging students in experiences that emphasise corporeality is fundamental to the learning process. Much of the literature has focused on the use of "active breaks" at school to counteract moments of inactivity with short physical activities, which can also improve academic skills. These breaks, lasting 10 minutes and carried out every hour, include stretching exercises, walking on the spot, breathing control, joint mobilisation, dance steps or aerobic gymnastics and chair gymnastics (Ferretti, 2017).Movement forms in the school context offer several advantages, such as: they can also be performed in the classroom due to their limited space; they are easy to perform and can be proposed by teachers, specialists or the children themselves; they have a short time duration and can be repeated throughout the day, adapting to the needs of school teaching. They also help to divert and relax children's minds after cognitively demanding activities (Cunti, 2010). Another consideration to be made regarding the possibility of implementing motor activities for children concerns the issue of mobility "to" and "from" school. Repeated trips twice a day would encourage children to adopt active forms of locomotion and parents to be more confident and autonomous with regard to travel outside the family environment.Statistics show that Italy ranks fourteenth in Europe in terms of independent child mobility. Italian parents give their children permission to move independently three to four years later than in other countries. Below is the table showing what has just been stated:

	Individuals who consider the influence of physical activity on health important	Individuals practising physical activity in a typical week	Individuals who think they should do more physical activity than they already do

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Finland	44%	92%	35%
France	13%	65%	44%
Germany	20%	70%	57%
Greece	9%	60%	38%
Italy	9%	62%	30%
Portugal	11%	40%	55%
Spain	15%	63%	49%
United Kingdom	25%	77%	47%

Edited by the authors from: http://www.who.int/world-health-day/fact_sheets4.en.shtml

The lack of adequate equipment in Italian public elementary schools is a common problem, but it is crucial to facilitate learning skills. If the school building were surrounded by a natural environment, outdoor spaces could be transformed into an outdoor gymnasium, providing an opportunity to introduce children to respect for nature. It is important to explore all possibilities for satisfying children's desire for direct contact with nature (Calcerano, Casolo, 2003). Protective factors related to outdoor physical activity appear to include exposure to bright light, daylight colour and increased vitamin D levels. Activities that can be proposed include the development of motor patterns such as walking, running, jumping, climbing, balancing, pushing, pulling, lifting, carrying, throwing, attacking and defending, as well as the practice of coordinated movements, dances and games that require large spaces. If carried out correctly, these activities produce positive results by improving cardio-circulatory and respiratory functions, developing the skeleton, muscles and joints in a harmonious manner, and improving conditional and coordinative motor skills. Outdoor spaces in schools can be equipped to provide a safe and engaging environment for physical activity (Alberici, 2002).Today, it would be ideal to increase physical activity in primary and secondary schools by providing safe and equipped spaces for motor activity. It is advisable to carry out outdoor activities whenever possible, so that children can come into contact with nature. Between lessons, it is suggested to take active breaks of about 10 minutes and, when available, use protected and safe cycle paths to walk or cycle to school. During free time from school, it is good to enrol children in sports courses, as they promote motor development. It is important to be careful when choosing sports activities, taking into consideration the qualification of the coaches, the policy of the sports association and the environmental context. These experiences must be balanced to avoid early specialisation that penalises less talented children, and must offer personalised attention that favours their individual growth. The importance of the family plays a fundamental role in educating their children to and through movement (Bellantonio, 2022).
Statistics reveal that parents are spending less and less time with their children and, even when they are together, the use of devices such as mobile phones and television compromises communication and relationships. In addition, time spent together is of

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lower quality and less effective in raising children. In early childhood, it is crucial to create a safe and familiar environment for the child to explore without risk. Parents should choose the right toys and equipment for the child's free play. It is preferable to favour toys that stimulate spontaneous movement and the development of basic motor skills, such as balls, ropes, skittles, scooters and bicycles. During and up to the end of childhood, parents must make decisions that foster motor development and environmental adaptation for their children. These decisions include swimming lessons, excursions to the plains and mountains, and free playtime in safe environments. In addition, children should have early experiences of athletic games and gymnastics, as they have the right to move and play with their bodies (Isidori, 2013).A significant part of motor activity, which promotes energy consumption and creates important opportunities for relationships and socialisation, is represented by movement games spontaneously organised among peers when appropriate spaces (such as oratories, courtyards, parks) and free time are available. Motor games are a common type of motor activity in the evolving human species. Moreover, the games themselves are played in adaptable, unstructured environments and involve flexible, agreed-upon rules. They are considered important for promoting children's physical, motor, intellectual and social growth in a spontaneous and enjoyable way (Barbieri, 2002). Today's children spend a lot of time with electronic games, as they no longer have time for traditional games. This phenomenon has led to the emergence of the so-called 'hypokinetic illness' in children. In recent years, we have been able to witness the inclusion of various projects within educational institutions, starting with the “Pilot Project” in 2009-2010, moving on to the “Motor Literacy” project where the figure of the motor science expert flanked the class teacher in frontal lessons; we then moved on to the lesson by the School Sports Centre under the supervision of the class teacher in the “Class Sports” projects, to end currently with the inclusion of the specialised motor science teacher in the primary school but not yet in all classes. The arrival of the specialised teacher has enabled the dissemination of specific learning methodologies such as *cooperative learning*, *tutoring*, *interdisciplinary*, *problem-based learning*. Motor play in schools, by specialised teachers, could also be based heavily on psychomotricity and music therapy, since in addition to its experiential nature, which undoubtedly helps the attainment of scholastic and growth objectives, it should also turn its gaze to its therapeutic function from an inclusive perspective. The learning environment to be effective and inclusive should allow each student to follow the activities in the classroom where a positive climate must be provided. In the classroom, pupils will be able to feel part of the group even if not oriented towards common goals but accompanied towards personal goals. In order to meet individual needs, support is necessarily needed in the form of practices and teaching methods that are study-oriented but can be developed together with the class.

Inclusive technologies

Assistive technologies such as software and hardware through the use of PCs make it possible to participate in classroom activities while respecting the personal time and learning styles of each individual. In the case of motor games, one could refer to e-sports for motor learning; new technologies offer enormous potential to support the

implementation of Physical Literacy in schools, enriching and diversifying motor learning experiences and making them more engaging for students. *Exergames* are video games that combine physical and digital activity, turning exercise into a playful experience. There are also monitoring applications that allow physical activity and progress to be tracked and personalised goals to be set. More and more space is being given to *Virtual and Augmented Reality*, through simulations of sports environments, through which sports can be played safely and different disciplines can be experienced. To support teachers, both sensors and wearable devices are used, useful for measuring physiological parameters such as heart rate, calories burned, distance covered, for immediate and personalised feedback, as well as tools for analysing movement that provide precise data on performance and allow training to be adapted to individual characteristics. Through *educational robotics* with Collaborative Robots, coordination, balance and strength exercises can be performed. It is also possible to design movement sequences with which to develop problem solving and computational thinking skills. The use of technological aids makes physical activity more fun and engaging and allows learning to be personalised, tailoring programmes to individual needs and interests, enabling students to monitor their progress and correct mistakes. In addition to motor skills, we observe a development of digital skills. It is important to select the most suitable tools and to use them in a balanced way, and here the teacher plays a key role in guiding learning and promoting socialisation. Group games included in the motor science discipline play an important role in children's learning processes to support inclusion. In fact, numerous needs are satisfied in the group, both the personal needs of each member and those of the group itself: identity, esteem and self-esteem, security, contribution, belonging and cohesion, uniformity and differentiation. (Loos, Vittori, 2005).

Conclusion

In order for there to be a change in educational contexts, it is necessary for the scientific community to share languages, possible teaching strategies within the community of practice, it would be useful to create a bridge with the training paths of specialised teachers, who, in turn, can return the results of classroom experiences and arrive at viable paths based on the common objectives of *Physical Literacy*. With regard to the strategies implemented by the Italian state, we would like to point out that the Italian government has launched a project to measure the economic value of sport and its impact on society. This project will allow Italy to align itself with European standards and make more informed political decisions on sport. The Department of Sport, the National Institute of Statistics and the Istituto per il Credito Sportivo signed a Convention for the development of a Satellite Account of Sport. The creation of the Sports Satellite Account brings Italy into line with European countries that have begun to quantify the economic value of the sports sector, and its annual trendis of considerable importance in understanding the impact of sport on the economy, the income generated, and the social and health benefits for the Italian state. The goal is to develop more effective sports policies to improve the health and well-being of citizens and as a stimulus to the country's economy. More economic resources will also translate into additional opportunities for schools, which have always promoted physical activity

and play for children. New technologies represent a valuable tool for promoting Physical Literacy in schools, but it is essential to integrate them into a broader educational approach that values physical activity as a fundamental element for the integral development of the person.

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