

OUTDOOR EDUCATION FOR THE DEVELOPMENT OF CHILDREN'S COGNITIVE AND RELATIONAL SKILLS

L'OUTDOOR EDUCATION PER LO SVILUPPO DELLE ABILITÀ COGNITIVE E RELAZIONALI DEI BAMBINI

Maria Luisa Boninelli
Educational Science Department
University of Catania
marialuisa.boninelli@unict.it

Double Blind Peer Review

Citazione

Boninelli M.L., (2023) Outdoor education for the development of children's cognitive and relation skills, *Giornale Italiano di Educazione alla Salute, Sport e Didattica Inclusiva - Italian Journal of Health Education, Sports and Inclusive Didactics*. Anno 7, V 3. Edizioni Universitarie Romane

Doi: <https://doi.org/10.32043/gsd.v7i3.981>

Copyright notice:

© 2023 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: 978-88-6022-483-5

ABSTRACT

The word 'Outdoor Education' (OE) encompasses a wide variety of pedagogical experiences characterised by active teaching that takes place in environments outside the school and is tailored to the characteristics of the territory and the socio-cultural context in which the school is located.

Originating in northern European countries and widespread there, in recent years outdoor education is also seeing a rapid spread in the Italian context.

The experience of outdoor schooling presents different challenges from those of traditional education, and children necessarily enhance creativity, collaboration and problem solving to deal with them (Brügge et al., 2018). OE is proposed as an alternative not only to traditional schooling, but also to the prevailing lifestyle of today's generation.

Il termine "Outdoor Education" (OE) racchiude un'ampia varietà di esperienze pedagogiche caratterizzate da una didattica attiva che si svolge in ambienti esterni alla scuola ed è adattata alle caratteristiche del territorio e del contesto socio-culturale in cui la scuola è inserita. Nata nei Paesi del Nord Europa e ivi diffusa, negli ultimi anni l'outdoor education sta vedendo una rapida diffusione anche nel contesto italiano.

L'esperienza dell'outdoor schooling presenta sfide diverse da quelle dell'educazione tradizionale e i bambini per affrontarle devono necessariamente potenziare la creatività, la collaborazione e il problem solving (Brügge et al., 2018). L'OE si propone come alternativa non solo alla scuola tradizionale, ma anche allo stile di vita prevalente della generazione odierna.

KEYWORDS

Outdoor education, children, skills, learning, nature
Scuola all'aperto, bambini, abilità, apprendimento, natura.

Received 20/09/2023

Accepted 18/10/2023

Published 07/12/2023

Introduction

In the international panorama, the term Outdoor Education (OE) brings together a variety of educational proposals, activities and projects, which can be subdivided into two macro areas: the first Outdoor Learning represented by the formal sphere, i.e. outdoor educational courses that aim to carry out curricular programmes in the school sector; the second, Outdoor Adventure Education, is an educational offer in the non-formal, extracurricular sphere. OE includes educational courses in natural settings that support a direct, authentic relationship with the real world by fully involving the person cognitively, physically and affectively-relatively (Giunti et al., 2021). These experiences in outdoor spaces do not have merely recreational purposes, but aim to produce original teaching and learning processes. It is a very complex change of pedagogical perspective that entails overcoming conceptions that are rather ingrained in our school system, which hinder the conduct of 'serious' didactic processes in settings other than the classroom.

This pedagogical approach invites to consider the resources offered by the outdoor environment as interesting educational opportunities, because they are able to produce transversal and interdisciplinary knowledge, in an engaging and inclusive way (Bortolotti, 2019). Since it is a pedagogical approach, Outdoor Education does not set out to establish activities and objectives to be achieved, these will inevitably have different meanings and modalities depending on the age of the trainees, the educational context and the teachers' choices, although they share some identity traits (Giunti et al., 2021).

OE gives the learner a central role in his or her learning and the teacher becomes the facilitator and director of the cognitive processes taking place, within an active didactic model. It represents, therefore, a complementary alternative to the traditionally transmissive school model, which sees the teacher at the centre of the educational action, assigning a fundamental role to students' direct experience, reality tasks and peer collaboration activities (Farné et al., 2018).

Within the OE, students live concrete experiences. To achieve this, it becomes necessary to reduce the frontal didactic lesson characterised by a rigid setting of desks, in order to make room for lessons that take place between indoor and outdoor settings in which textbook content is integrated.

However well-organised and equipped classrooms, corridors, laboratories and other spaces may be, they are still artificial places or determined systems; in OE, on the other hand, the learning process opens up to multiple fields of experience and a variety of environments, where the learner, confronted with the

real context, develops his or her autonomy and way of acting in a collaborative social context (Giunti et al., 2021).

The 'outside' is not merely a setting for active teaching activities, but constitutes a characteristic element that stimulates the teacher to a didactic design that takes into account the context, the prior knowledge that can be used and the competencies (understood as the students' goal), fostering peer relations and scaffolding, allowing students to put themselves to the test, actively participating in the construction of the curriculum.

The active and participatory role of the student in the construction of his or her own learning pathway is linked to the theme of well-being, not only in the broad and common sense of 'being well in the open air', which certainly stimulated OE in times of health emergencies, but also with reference to psycho-pedagogical theories (D'Ascenzo, 2018).

In this didactic approach, motivation, a sense of self-efficacy and self-regulation (Bandura, 1996) are decisive in the learning journey even in cases of special educational needs and disabilities.

The need to collaborate, to 'team up', pushes the learner to create bonds with peers or to strengthen existing ones; being called upon to contribute and confrontation with different points of view helps the understanding of the others from oneself and structures socialisation.

1. Theoretical frame of reference.

OE is an educational methodology that is fundamentally based on the idea that a pedagogy built around sensory and active experiences can result in more meaningful learning (Carpenter, Pryor & Townsend, 2005). The concept advocated by John Dewey of Learning by Doing (Dewey, 2014) represents a fundamental creed of the theoretical assumptions of OE, from which the realisation of concrete experiences in real situations is promoted, which are then transformed into profound learning through reflective work on what has been experienced.

Dealing with the Italian translation of the definition OE helps to grasp another fundamental aspect of the methodology. In Italian, the term could be translated as 'open-air education' or more succinctly 'outdoor education', thus underlining the belief that education is not a process inextricably linked to a closed classroom, but that it can also occur outdoors, in spaces outside the classroom, in society and in the natural environment (Crudeli, La Serra & Monti, 2012, p. 13).

It is possible to identify two of the most relevant characteristics attributed to outdoor learning: the first concerns direct contact with the object of study, where the place of learning itself becomes the object of learning; the second concerns the immediate interaction with nature, which allows a greater

authenticity to the teaching situation in which the learner is prompted to learn, resulting in more in-depth skills.

Direct contact with natural, cultural or social phenomena enables learning and exposure to certain stimuli that are more appropriate to the subject's cognitive growth. The human being is a multisensory animal, who integrates all the sensory components with which he is endowed into the learning experience (Szczepanski, 2006, p. 10). This actually leads to overcoming the prevalence that sight and hearing have assumed over time in traditional lessons. The peculiarities just described of this educational methodology contribute to increased motivation, the development of meaningful learning and the stimulation of creativity (Szczepanski, 2009, p. 83).

With regard to the vocabulary used by English-speaking authors to designate this field, designations are ambiguous: some texts Outdoor Education, some- use Outdoor Learning, and others refer to Outdoor Teaching. In the work written by Higgins and Beames, the authors decide to adopt the term Outdoor Learning, as it is as opposed to the more specific Outdoor Education, which would indicate *"something that occurs predominantly at residential centres or on expeditions"* (Beames, Higgins & Nicol, 2011, p. 5). In this contribution, it was decided to use both terms Outdoor Education and Outdoor Learning with the same meaning, as is the case in many of the studies on the subject.

This choice also responds to a practical necessity, as otherwise it would have become chaotic to report references and quotations from the scientific literature, in which indeed several terms are alternated. Even with regard to its definition, the texts devoted to OE do not show univocity, although in almost all of them the same fundamental aspects are found, expressed with different ~~orders~~ sequences and emphasis. We decided to quote the definition elaborated by the National Centre for Environmental and Outdoor Education, found several times in the writings read for the drafting of the work, as it is considered among the most complete: *'Outdoor Education is an approach that aims to provide learning in interplay between experience and reflection based on concrete experience in authentic situations. Outdoor learning is also an interdisciplinary research and education field, which involves, among other things: the learning space being moved out into life in society, the natural and cultural environment; the interplay between sensory experience and book-learning being emphasised; the importance of place being underlined'* (National Centre for Outdoor Education, n.d.). The reason for the existence of multiple definitions lies in the fact that Outdoor Learning is an educational construct and as such is applied in different ways in different cultural realities. However, the European Institute for Outdoor Adventure Education and Experiential Learning has established three basic components of Outdoor Learning, namely outdoor activities, environmental education and

personal & social development, as summarised by the following conceptual model developed by Crowther, Higging and Loynes (1997, p. 6):



Figura 1 The Structure of the Outdoor Learning

Environmental education is a device that enables the cultivation of education for sustainable development as it allows pupils to relate directly to the natural environment, to observe it and experience it in the immediate environment, reinforcing a sense of belonging, protection and care for the natural environment. In outdoor activities, the focus is on the development of kinaesthetic skills, where the student learns by doing or associating learning with some action.

Personal and social development of learners is the last component contemplated by OE practices that focuses on personal development, the promotion of learning new disciplinary knowledge, overcoming physical or emotional barriers facilitated by the external environment and participation during group work, etc. (Szczepanski, 2009, p. 87).

Outdoor schooling greatly stimulates the students' personal sphere, allowing them to become aware of their own mind and that of others, and thus to build and strengthen self-awareness, self-esteem and self-efficacy (Giunti et al., 2021). In transforming the transmissive model, OE fosters students' psychophysical well-being, autonomy, and the attainment of self-awareness, as well as hindering forms of passivity and sedentariness by promoting being well at school (Farné et al., 2018).

Motor activity and active, hands-on experience for at least one hour a day have been shown to contribute unequivocally to learning reading, writing, mathematical skills and concentration; thus, outdoor activity is an invaluable

resource for teaching (Ericsson, 2008). As a matter of fact the practice encourages the development of gross and fine motor skills through bodily experiences that are difficult to replicate in enclosed spaces, diversified and rewarding, enabling students to develop self-confidence and the ability to handle even difficult situations, relying on their own potential.

Being outdoors has certainly stimulated OE in times of health emergencies, just think of the outdoor schools set up in the late 19th and early 20th century to combat tuberculosis or the more recent COVID-19 pandemic, following which OE experiences have been more successful in Italy as well (Giunti et al., 2021).

2.The natural environment as a mediator of learning and the development of social relationships.

The evident effects of climate change make it all the more necessary today to teach students respect for our ecosystem: direct contact with the world around them enables them to fully understand natural phenomena and engage in resource conservation and the promotion of sustainable lifestyles (Giunti et al., 2021). Sustainability and environmental protection can only take place if taken up by the community, which is why it is crucial to instill in students a sense of participation, civic responsibility and care for the world around them (Mortari, 2018).

The environment is also a fundamental point in the thought of John Dewey (1859) who, starting from the dualistic concept of mind-body, developed his entire pedagogical reflection by keeping man as a psycho-physical unit at the centre. Body and mind, according to the author, are interdependent and constantly condition each other in the formation of an individual. On the one hand we have the mind that acts on the body and is conditioned by it, on the other hand the body is in turn influenced by thinking and the environmental conditions in which it moves.

Here, when learning takes place outside the classroom, one of the differences is that multisensory perception expands. It is difficult to grasp the different learning stories, to understand where one begins and another ends. To record the flow of experience in which the children are immersed outdoors. Being in the woods required a very strong and necessary sensory immersion from everyone.

For this reason, it is of fundamental importance that educational environments take on a pedagogical value and can influence children effectively. Natural environments are dynamic, complex, unpredictable, and it is precisely this seemingly disordered and undefined, yet harmonious aspect of them that encourages exploration, promotes children's curiosity and keeps their concentration high.

Children increasingly need nature, open spaces where they can have unique, precious, indelible experiences. They learn with their senses, search for and collect natural materials, invent new games, discover silence, long periods and instinctively venture out to discover the world. For a child, nature is truly irresistible, in all its nuances and different seasons. Of all natural environments, the forest is an unstructured place that is constantly changing and offers many relationships and interconnections.

It is an unlimited playground, without boundaries, a place where there are no structured toys, the children use the many natural materials with ease, it offers a lot of possibilities of interpretation and imagination, free fantasy and creativity, but also communication between the children who agree day by day on the different meanings of things (Miklitz, 2001). By playing, children look for possible solutions to the difficulties they gradually encounter, discover their own limits and help each other, strengthen their autonomy and self-esteem and have a greater capacity for socialisation and organisation in groups.

Frequenting open spaces makes children more dynamic and active, it is about physical and mental agility at the same time.

By being in the forest, children build a deep connection with nature in an autonomous and entirely personal way and include this important relationship in their lives, a relationship that runs through the ages and is reflected in adulthood, when they become aware of the importance of nature protection and can decide to adopt lifestyles that are more in harmony with the environment (Louv, 2006).

The children move fluidly from one group to the next. They decide for themselves when and how to stop playing and try something new. In this way they experiment with different activities, discover their tastes and talents and sometimes deep friendships develop between the children and new friends feel as if they have known each other forever. Immersing oneself in a natural environment means that time becomes longer.

There is not only time to do things, but also time to do them again or to do them differently. From an evolutionary perspective, as Peter Gray (2015) explains, play is nature's way of ensuring that human and some animal young learn what they need to survive and thrive. Growing up outdoors in contact with nature influences the way children experience the world. Contact with the natural elements, relationships with living things and feelings of happiness are important in developing the skills that are essential for adult responsibility and greater sensitivity in dealing with environmental problems.

Contact with natural materials in such a rich context and autonomy from adults encourages an instinctive, spontaneous, intimate interaction with what is around us. The child looks, observes, explores, compares, tries, modifies, transforms, builds, deals with plants and small animals. All this cannot be taught.

The forest is a place of peace and tranquility. In this rich and stimulating environment, it is very easy to bring children closer to nature. Busy and tireless, they are eager to move, curious to explore and eager for adventures that test their motor skills, sense of balance and kinaesthetic abilities.

3. How outdoor education changes the school setting

The environment has always had an important place in education. Already the founding fathers of European education, such as Locke, Rousseau, Pestalozzi and the Agazzi sisters emphasised its educational value as a complex and varied natural and cultural reality. By conducting educational activities outside the classroom, they constituted a valuable source of experiences, resources and educational discoveries that can influence the individual's development in a very positive way.

The rigid structuring of space affects the degree of interaction that individuals can establish with each other, which is why in a school environment it is appropriate to have spaces that allow freedom of movement and interpersonal action (Masiani, 2021). In traditional classrooms, each child has a fairly defined location throughout the year, which allows him or her to interact during lessons mainly with classmates next to him or her, and only during recess or occasional activities with others. The ability to interact was further restricted by the anti-contact regulations during the COVID-19 pandemic. In OE, on the contrary, students have neither a fixed location in the classroom nor outdoors and are much freer to make contact with each other and establish relationships with all members of the class; desks are often equipped with castors and children change locations even within the same day, so they have much more opportunity to interact with all members of the class (Tortella et al., 2020). When talking about school in nature, one cannot refer to Maria Montessori, an Italian scientist, who is well known for her organisation of space and choice of materials for children; for her, the relationship between the child and nature is of vital importance.

Her thinking led her to publish *Children of the Earth*, in which she emphasised the importance and benefits of a natural education for adolescents and pre-adolescents as well. "In our time and in the civilised environment of our society, children [...] live very far from nature and have little opportunity to come into intimate contact with it or to have direct experience of it; on the contrary, the child needs to live naturally." (Montessori, 1950)

According to the scientist, adults' fears result in over-protective behaviour towards children by not allowing them to 'experience' nature and its phenomena. In order to be able to detect the full energy and physical potential of children, a free nature is needed: walking in the woods on steep paths strengthens balance, picking fruit stretches the muscles of the back, legs and arms. The concept that

Montessori conveys and which schools in the forest treasure is that, although the feeling for nature is innate in human beings, one cannot expect interest in the natural world when children are used to spending their time in enclosed spaces. From this realisation, the teacher's role is of fundamental importance: to transmit values and provide experiences that help children regain a positive connection with nature.

All Montessori experiences that allow the child to experience nature are aimed at nurturing a feeling of nature, understood as attention, respect, curiosity, towards what lives around him. The role of the environment can also be found in the thought of John Dewey who, starting from a dualistic mind-body conception, develops his entire pedagogical thought by placing man as a psycho-physical unit at the centre. According to the author, body and mind are interdependent on each other and condition each other in a constant manner in the formation of an individual: on the one hand the mind acts on the body and is conditioned by it, on the other hand the body is in turn influenced by thinking but also by the environmental conditions in which it moves. For this reason, the environment in education becomes fundamental, and it is appropriate that educational contexts take on pedagogical value and can influence children constructively.

Perhaps the most interesting contribution of this author, however, is a wide-ranging discussion of the concept of experience as a way of exposing the child to direct experience..

Undoubtedly the best known thought is that of Gardner who, for the first time in 1983, speaks of multiple intelligences. Moving largely away from the old, reductionist assessment of intellectual capacity, he intuited that each individual is more skilled in some fields than in others and develops a type of intelligence that reflects his or her abilities.

Between 1990 and 1999, the list of intelligences was redefined to include naturalistic intelligence (nature smart). In subjects belonging to this category, it is assumed that the brain areas dedicated to recognition, intense sensory perceptions and those related to object differentiation and classification are affected.

4. The benefits of outdoor education

There are numerous theories that support the health benefits that individuals derive from their relationship with the natural environment. In recent decades, much research has been conducted to investigate the influence of nature on health, both physical and psychological. The interest in mental health has led to highlight how direct contact and doing activities immersed in nature promote a sense of well-being and refreshment in those who experience it (Agostini and Minelli, 2018).

For example, Kaplan and Kaplan (1989), professors of environmental psychology, claim that people can focus better after spending time outdoors or even just viewing images of natural environments and elements. This phenomenon is thought to be due to the fact that the experience of quiet, cognitively restorative scenarios prevents distractions to working memory, resulting in an increased willingness to concentrate and focus attention. Outdoor school experiences help students to concentrate more after spending time in contact with nature, improve observation skills, alleviate stress, predisposition to conflict and promote calm and improved physical and mental well-being.

The beneficial effects of the experience in nature are also underlined by the *Stress Recovery Theory*, according to which spending time outdoors significantly reduces cortisol levels in the blood and thus stress in individuals, promoting relaxation and enabling more harmonious, peaceful and cooperative interaction between classmates (Ulrich, 1981).

In the international research scene, some scholars have shown that spending time in what are termed *green spaces*, such as forests, parks, and gardens, has a positive effect on mood and significantly prevents the risk of disease. *Blue spaces*, such as the sea, lakes and rivers also have a positive influence on health: those who reside in areas close to blue spaces enjoy greater mental well-being (Völker and Kristemann, 2015).

From an educational and pedagogical point of view, *outdoor* activities allow students to gain new and deeper knowledge about nature and its phenomena through observation and active participation: students have a certain degree of freedom in choosing the objectives to be achieved and the phenomena to be analysed (Bertolino et al., 2017). Observing nature in a dynamic and changing context offers the opportunity to look at the world from different points of view and analysis: it offers the chance to put on the lens of a scientist, to adopt the gaze of an anthropologist, a historian, a sociologist, fostering an understanding of the interconnectedness and interdisciplinarity of the systems that surround us (Giunti et al., 2021).

On a psychological level, self-esteem and self-efficacy derive several benefits from outdoor school experiences. One learns to deal with unpredictable, unexpected events: being able to cope with new situations instils a sense of well-being in students, fostering self-awareness and a strong sense of security. Biophilia theories state that the subject, when systematically observing plants and animals, feels a sense of well-being and wonder.

This results in a heightened sense of security in dealing with uncertainty, novelty and the variability of ecosystems. The flexibility and variety of outdoor spaces allows greater freedom of expression for students and encourages a more active and participative role.

The children themselves, at least partly, create the learning space where they feel comfortable. Pupils learn to get in touch with their own emotionality and to get to know each other by reflecting on their own feelings and emotions and sharing them with their classmates. From a sociability point of view, interpersonal relationships involve putting oneself out there, despite the fear of being judged or misunderstood, and over time a climate of wellbeing, friendship and trust is created, allowing students to feel part of a cohesive group.

Conclusions

Outdoor Education is a pedagogical movement that assumes the outdoor space as a learning environment and a normal place to live for the day, upholding children's right to live in contact with nature where they can experience the space of play, movement, and sociability, a place where they can overcome their fears and improve their strengths. Various studies support the beneficial effects of the experience in nature, speaking of the natural needs that children experience particularly during their growth. This approach allows students to actively experience contact with diversity be it of cultural, religious, ethnic or disability-related origin, whereby they learn from an early age to respect others and to consider diversity as an asset. As a result, students will be more motivated to come into contact with others and participate in experiences, each with his or her own abilities and skills: in OE, each individual contributes according to his or her own qualities and possibilities, learning from others and participating in the learning of others (Giunti et al., 2021). The increased opportunities in open environments to connect with one another strengthens the sense of group and friendship that unites members, but also the ability to resolve possible conflicts (Brügge et al., 2018). In the outdoors, not only is the bond between classmates strengthened, but also that with teachers and the environment, consolidating a sense of civic and belonging to the area, which also favours the inclusion of those from socio-economically disadvantaged backgrounds (Giunti et al., 2021).

Because of its distinctive characteristics, it involves the use of bodily and motor functions in learning. Exercise promotes the oxygenation of the brain, which enables better learning, and the development and strengthening of skills such as physical strength, endurance and balance. In these times, a large proportion of children do not engage in enough physical activity exposing themselves more to health risks and weight problems (Nardone et al., 2016): school, due to the significant portion of time it occupies in everyday life, must become a place where not only learning, but also the physical and psychological health of children and young people is protected.

Outdoor Education in the Italian school context still meets with resistance, even though in recent years it has been embraced by an increasing number of schools of different types and grades. In order to implement *Outdoor Education*

practices in schools, it is desirable for research to provide further contributions to appreciate both its strengths and weaknesses

References

- A.A.V.V., (2002). *Outdoor Education - Authentic Learning in the Context of Landscapes*. Linköping: Kinda Education Center.
- Agostini F. e Minelli M. (2018) *Nature-Based theory: quando l'outdoor promuove la salute e il benessere*. Roma: Carrocci Editore
- Bandura A. (a cura di), (1996) *Il senso di autoefficacia. Aspettative su di sé e azione*, Trento: Centro Studi Erickson,
- Beames S., Higgins, P., & Nicol R. (2011). *Learning Outside the Classroom – Theory and Guidelines for Practice*. New York: Routledge.
- Bertolino T., Perrazzoni A. (2014) *Il valore educativo nel mondo rurale: la fattoria come contesto ponte tra bosco e città* in Salomone M. (a cura di) , *Prepararsi al futuro. Ambiente, Educazione, Sostenibilità*. Istituto per l'Ambiente e l'educazione Scholé Futuro Onlus. Torino, pp.159-171.
- Bortolotti A., (2019) *Outdoor education. Storia, ambiti, metodi*. Milano: Guerini Editore.
- Carpenter C., Pryor A., & Townsend M. (2005). *Outdoor education and bush adventure therapy: A socio-ecological approach to health and wellbeing*. *Australian Journal of Outdoor Education*, 9, 1.
- Crowther N., Higgins P., & Loynes C. (1997). *A Guide for Outdoor Educators in Scotland*. Penrith: Adventure Education.
- Crudeli F., La Serra C., & Monti F. (2012,). *Outdoor Education*. Bambini disponibile in: <https://docplayer.it/12424143-Outdoor-education-fabiola-crudeli-carmen-la-serra-e-fiorella-monti.html>.
- D'Ascenzo M., (2018) *Per una storia delle scuole all'aperto in Italia*. Pisa: Edizioni ETS.
- Dewey J. (1963) *Experience and Education*, London: Collier-Macmillan
- Farnè R., Agostini F. (a cura di),(2014) *Outdoor Education. L'educazione sicura all'aperto*. Parma: Edizioni Junior, Gruppo Spaggiari.
- Farnè R., Bortolotti A., Terrusi, M. (2018) *Outdoor Education: prospettive teoriche e buone pratiche*. Roma: Carocci editore.
- Garden H., Davis K, (2014) *Generazione App. La testa dei giovani e il nuovo mondo digitale*. Milano: Feltrinelli editore.
- Higgins P., Loynes C., (1997) *On the Nature of Outdoor Education*. In: Higgins, P., Loynes C., Crowther N., (a cura di), *A guide for Outdoor Educators in Scotland*, Adventure Education, Penrith (Cumbria), pp. 6-7.
- Montessori M. (1950). *La scoperta del bambino*. Milano: Garzanti

- Mortari L.(2018) *La ricerca educativa nel campo dell'educazione ambientale: questioni aperte*. In: Mortari L., Silva R. (a cura di), *Per una cultura verde. Riflessioni sull'educazione ambientale*. Milano: Franco Angeli, pp. 9-21.
- Nardone P., Spinelli A., Buoncristiano M., Lauria L., Pizzi E., Andreozzi S., & Galeone D. (a cura di) (2016). *Il Sistema di sorveglianza Okkio alla salute: risultati 2014*. Istituto superiore della sanità.
- National Center for Outdoor education: <https://ncoae.org/>
- Sobel D., (2004) *Place-Based Education. Connecting Classrooms and Communities*, The Orion Society, Great Barrington, MA.
- Szczepanski A. (2006). *Outdoor Education - Authentic Learning in the Context of Landscape Literary education and sensory experience. Perspective of Where, What, Why, How and When of learning environments. Inter-disciplinary context and the outdoor and indoor dilemma*. Linköping: Kinda Education Centre.
- Szczepanski A. (2009). *Outdoor Education-Authentic Learning in the Context of Urban and Rural Landscape-A Way of Connecting Environmental Education and Health to Sustainable Learning- Literary Education and Sensory Experience. Perspective of the Where, What, Why and When of Learning*. Linköping: Linköping University.
- Tortella P, Schembri R. (2020) *Covid-19 and the effect of isolation of the sedentariness and physical activity of children an Italian Study* Vol 18 n° 3 pp 101-110 Lecce: Pensa Multimedia
- Völker S. & Kistemann T. (2015). *Developing the Urban Blue. Comparative health responses to blue and green open spaces in Germany*. *Health & Place*, 35, 196–201.