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**The Potential of Outdoor Education for All  
in People with Intellectual Disabilities.  
A Study in Contexts of Marginalisation  
and Socio-cultural Disadvantage**

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# **The Potential of Outdoor Education for All in People with Intellectual Disabilities. A Study in Contexts of Marginalisation and Socio-cultural Disadvantage<sup>1</sup>**

*By Cristina Promentino\* & Fausta Sabatano<sup>±</sup>*

<sup>1</sup>*This research explores the effectiveness of Outdoor Education as a tool for promoting the inclusion of young people with intellectual disabilities in situations of social vulnerability and marginalisation. Within the framework of an education system geared towards equity and quality, inclusion is an essential element (Ianes, Canevaro, & Caldin, 2012). Outdoor Education is a pedagogical approach based on learning in the outdoor environment, useful in both school and extracurricular contexts, recognised for its ability to enhance cognitive and psychomotor development through active and experiential methodologies (Farné, 2015). The theoretical framework of the research is based on four interconnected pillars: Systemic perspective: According to Bertolini (1988), education is a “system of systems”, in which each element is closely related to the others, generating mutual transformations. In this view, the individual is considered an open system, a network of interconnected dimensions and integrated levels, in continuous exchange with the context. Bioeducational sciences: This perspective highlights the need to conceive the educational process as a dynamic interaction between biological components and the environment, emphasising the importance of the integration of body and mind in learning. Simplexity theory: Introduced by Sibilio (2023), this theory posits the “principle of meaning” as the foundation of embodied and situated learning. The “sense of movement” (Berthoz, 2011) can act as a catalyst for learning, acting as a “vicarious” space for the development of cognitive functions and educational potential. Experiential learning and place-based education: These pedagogical paradigms, proposed by Kolb (1984) and Sobel (2004) respectively, emphasise the centrality of multisensory, emotional and cognitive experience in the learning process. They recognise the environmental and territorial context as a generative element of educational stimuli, capable of promoting individualised learning paths that are meaningful to the subject. Studies conducted by various researchers (Salvaterra, Rossini, Schenetti, D'Ascenzo, & Bortolotti, 2015-2019) have highlighted how the advent of industrialisation has led to the phenomenon of indoorisation, characterised by the progressive closure of educational spaces to indoor environments. While Outdoor Education (OE) has a long-standing tradition in Europe through numerous initiatives, in Italy, research and educational experiments based on Outdoor Education have only recently begun to find space in both school and extracurricular settings. In particular, over the last decade, the international landscape of Special Education and Pedagogy has seen a significant increase in initiatives dedicated to young people with disabilities. In this context, the concept of “Outdoor for all” (Stavrianos & Pratt-Adams, 2022) has developed, an inclusive approach that promotes educational experiences in*

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<sup>1</sup>The Introduction was written by Professor Fausta Sabatano, while Chapters 1, 2, 3, and 4 were authored by Cristina Promentino

*outdoor environments designed to be accessible and educational for all individuals, regardless of their physical, cognitive or sensory specificities (Louv, 2005). The hypothesis underlying this research is that limited exposure to outdoor experiences, conditioned both by the socio-cultural context of belonging and by the lack of local opportunities, can negatively affect the processes of personal transformation and self-determination of individuals with disabilities living in socially marginalised contexts.*

## **Introduction**

In the current context, marked by profound educational inequalities and growing difficulties in guaranteeing real opportunities for participation to all, Outdoor Education for All represents a pedagogical proposal that could innovatively address the challenges posed by territorial contexts characterised by marginalisation and socio-cultural hardship. In fact, it is not just a matter of creating an educational programme that moves outside the “walls”, but of recognising the transformative value of the natural environment as an educational space where experience, relationships and opportunities for expression intertwine. In accordance with Dewey: “*Every cognitive process is an effort to transform reality on the part of man. Meanings emerge that outline new methods of transformation and operation with a view to making reality more conformable to human purposes*”. Outdoor Education for All could therefore serve as a real opportunity to feel welcomed, listened to and valued. Far from the rigid logic of the traditional community, the outdoor environment allows for the creation of free, dynamic learning environments that are consistent with individual needs, including those of children with intellectual disabilities. The natural environment becomes a context in which skills can be experimented with and acquired, acting as cognitive and psychomotor empowerment (Farnè). It is only in dialogue with the territory that Outdoor Education can be the key to an integrated education system (Frabboni and Minerva, 2003).

This research aims to analyse the potential of Outdoor Education for All in promoting inclusive pathways for people with intellectual disabilities living in contexts characterised by social deprivation and hardship. In the context of an education system geared towards equity and quality, inclusion is an essential element (Ianes, Canevaro, & Caldin, 2012).

To this end, the study is based on two main hypotheses that identify the critical factors that could hinder inclusive processes:

- 1) the condition of disability, amplified by adverse contextual variables and a lack of outdoor experiences, which could be caused by the socio-cultural background of individuals and the limited opportunities available in the area, negatively affects the processes of self-determination and personal transformation;
- 2) the implicit knowledge of parents of children with disabilities affects the degree of freedom (Sibilio, 2016) of their children, also impacting the processes of agency (Aiello, 2016) and self-determination (Wehmeyer, M.L.2005).

## **The Theoretical Framework**

Within the framework of modern pedagogical thinking, attention has focused on reflections that view education as a complex system of interactions and transformations. In particular, we consider Bertolini's perspective (1988), which describes education as a "system of systems", where each individual element, environment, reaction and context is closely interconnected and capable of influencing others in a process of mutual transformation. In this view, the individual is seen as an open system, a network of interconnected dimensions at integrated levels, in constant exchange with the context, which influences both personal and collective growth. This approach is deeply connected to bioeducational sciences and highlights the importance of conceiving the educational process as a dynamic interaction between biological factors and the environment, emphasising the value of the integration between body and mind in learning. The bioeducational sciences introduced by Frauenfelder (1983, 1994) represent an interdisciplinary field of research that combines contributions from pedagogy, biology, neuroscience, psychology and social sciences.

This approach is based on a complex and systemic epistemological paradigm aimed at exploring educational processes in relation to the interaction between biological factors and environmental stimuli (Frauenfelder & Santoianni, 2002; Frauenfelder, Santoianni, Striano 2004). At the heart of this perspective is the idea that knowledge develops through a dynamic interaction between the individual and the environment, in a continuous process of exchange and co-construction. In this context, biology is seen not only as the science of human evolution, but also as a discipline that offers interpretative keys to understanding the influence of genetic, epigenetic and organismal constraints on all cognitive and formative processes.

This leads to a vision of learning as an embodied, distributed and situated process, where the subject and the environment constitute each other in a continuous transformative flow. In this sense, educators are called upon to design educational settings that take into account both the biological potential of the individual and the relational and environmental dimensions of knowledge (Dewey & Benteley, 1949/1974). In accordance with bioeducational sciences, the theory of simplicity introduced by Sibilio (2023), based on the same concept developed by neurophysiologist Alain Berthoz (2011), reinterprets educational intervention as a complex adaptive system. Sibilio speaks of a non-linearity of educational processes, which are characterised by a dynamism in which educational action takes on a central role, integrating perception, intentionality and knowledge (Sibilio, 2014). The educational act, embodied and contextualised, represents a form of cognition that guides educational interaction.

Simplicity therefore implies pedagogical choices that consider the transdisciplinarity between biology, pedagogy and didactics. This, in turn, shows how the principles of adaptation, specific to evolutionary biology, can be applied to education (Berthoz, 2011, Sibilio, 2014).

Education is interpreted as an adaptive process, in which the subject's ability to cope with the instability of reality becomes fundamental. Consequently, while recognising the institutional role of educational contexts in removing obstacles to personal fulfilment, a systemic view emphasises that it is rather the flexibility of the individual and their adaptive intelligence that enable them to overcome the complex challenges of life (Sibilio, 2014).

In other words, the fundamental principle is that living organisms develop simple but effective solutions to deal with complexity, which are also valid for other complex systems, such as education.

In this context, the “sense of movement” (Berthoz, 2011) can act as a catalyst for learning, acting as a “vicarious” space for the development of cognitive functions and educational potential.

This principle is central to contemporary educational thinking, basing the significance of educational action on its purpose. Referring to Aristotle's doctrine of causes, in which power implies action and final cause (Rochi, 2012), the meaning of educational action is identified with the very purpose of the educational process. Berthoz (2011) elaborates on this view by emphasising that the meaning of life is not an attribute external to life, but coincides with life itself, understood as a system in continuous change and capable of self-organisation. In this perspective, the act not only expresses but constitutes the potentialities of life and vice versa, in a process of mutual definition. Corporeality is therefore not a simple means of acting but an original condition for experiencing the world and attributing meaning to it; in this way, the body is a true “knowledge machine” (Berthoz, 2011, p. 104; Maturana et al., 1992). In addition, the sensory-motor system does not merely shape conceptual content based on bodily experience, but structures our very functioning in the world (Gallese 2006). Knowledge is therefore realised in action as an inseparable expression of knowing and doing: “every action is knowledge and every knowledge is action” (Maturana et al., 1992, p. 43). Consequently, the body is not a simple instrument of learning, but the very seat of potential cognition.

This insight gives rise to the concept of didactic corporeality (Sibilio 2011), i.e. the idea of educational action to address and simplify educational complexity. In this perspective, action not only expresses but also constitutes the potentiality of life and vice versa, in a process of mutual definition. Corporeality is therefore not a simple means of acting, but rather an original condition for experiencing the world and attributing meaning to it. This conception implies that the body is a vehicle of educational meaning and that bodily action is the point of emergence of meaning, the very foundation of educational experience. The principle of meaning unifies and recomposes the other pedagogical principles, placing the body acting in space at the centre as the foundation of teaching and learning. Bodily action thus becomes the origin and destination of thought, the basis of abstraction and cognitive processes.

This embodied action of knowledge, in which bodily action is both the origin and destination of thought, takes on particular relevance in educational contexts involving individuals with disabilities.

In contexts such as these, education cannot be viewed in an abstract way, nor can it ignore the importance of the body and relationships in learning. The bio-educational and systemic perspective integrated with the theory of embodiment (Gallese, 2006 Maturana et. Al. 1992) helps us to overcome the division between ability and disability, highlighting instead the expressive and cognitive potential that each body, in its uniqueness, can express when it finds itself in an environment rich in stimuli, relationships and opportunities for action, such as that offered by the activities proposed with the Outdoor Education approach. It is precisely in this context that Outdoor Education for All plays a fundamental role. The natural environment and outdoor educational practices create experiential spaces that activate the sensory-motor system and promote embodied learning, where the body in motion, emotions and connection with the environment become key elements of the educational process for boys and girls with disabilities. These experiences allow learning to be experienced as a dynamic and environmental process, in which barriers are dissolved through the renegotiation of spatial, cognitive and relational boundaries, thus expanding the space for education. In the outdoor environment, physical action not only supports cognitive development, but also strengthens self-determination, self-efficacy and agency of boys and girls, offering an education that is not limited to compensating for deficits, but allows for the expression of full subjectivity and the possibility of learning in the surrounding world. In this way, Outdoor Education for All presents itself as an approach that generates meaning, promotes inclusion and activates a real transformative process, even in the most difficult contexts. This educational proposal fits into the theoretical framework of experiential learning (Kolb, 1984) and place-based education (Sobel 2004). These approaches place lived experience, in its cognitive, emotional and sensory dimensions, at the centre of the educational process.

In particular, experiential learning theory attributes a decisive role to direct practice, believing that concepts and relationships are assimilated more quickly when the individual is physically and emotionally involved in activities.

Such involvement promotes processes of attention, memorisation and deep understanding (Kolb, 1984).

Kolb outlined a learning cycle divided into four sequential and interconnected phases, which constitute the reference framework for experience-based training and educational interventions.

- 1) Concrete experience. This involves directly experiencing situations in which the individual is involved in real or simulated situations that activate the senses, emotions and body, stimulating situated learning.
- 2) Reflective observation. This involves a critical re-elaboration of the experience: attention is focused on the emotions, behaviour and relational dynamics that emerged, often through guided discussions, brainstorming and collective comparisons.
- 3) Abstract conceptualisation. The experience is systematised and linked to theoretical models and conceptual frameworks that allow for the

generalisation and abstraction of concepts that are also useful in other contexts.

- 4) Active experimentation. This involves putting the skills and knowledge acquired into practice in new contexts through simulations, exercises and case studies, with the aim of reinforcing learning and facilitating transfer to real situations (Kolb 1984, Morris 2020). In this context, the environment also plays an important educational role: the territory, places and experiences become valuable sources of stimuli and meaning, capable of supporting authentic and personalised learning paths (Sobel 2004).

Place-based education (Sobel, 2004) values the local area and context as learning environments rich in cognitive stimuli, proposing an educational practice rooted in the area where young people live and act. The local area is therefore not just a backdrop to the educational process, but an active source of stimuli, meaning and relationships.

In detail, the local natural and cultural environment becomes a “living text” with which boys and girls interact to construct authentic, embodied and contextualised knowledge. Sensory and emotionally engaging knowledge is therefore encouraged, promoting a sense of belonging and fostering an emotional bond with the places inhabited, which become the objects of subsequent and conscious care skills.

At the same time, the same approach supports the design of meaningful educational experiences tailored to the needs and potential of young people with disabilities. Therefore, space is transformed into an educational space capable of generating belonging, agency and meaning, giving rise to a dynamic, multidimensional and intentional setting in which pedagogical intervention can take place to promote inclusion (Frabboni, Pinto, Minerva 2003). In recent years, more generally, pedagogical research has seen a radical change in the configuration of spaces, changes that are closely linked to the socio-economic transformation processes ushered in by industrialisation.

Several scholars have shown how the expansion of the industrial production model has led to so-called indoorisation, i.e. the closure of learning environments in increasingly artificial places far from natural and community contexts (Salvaterra, Schenetti, Rossini, Schenetti, D'Ascenzo & Bortolotti 2015-19). Some scholars have analysed how the expansion of the industrial production model has progressively led to the so-called “indoorisation” of schools, i.e. learning environments have become increasingly closed, artificial and separated from the natural and community context.

This closure has not only been physical, but has also led to a cultural and pedagogical change, with the external environment ceasing to be perceived by everyone as an educational resource and becoming a marginal element, often associated with leisure time or exceptional experiences. Modern community contexts, as they evolved in the 20th century, have favoured standardised, often decontextualised environments where order and control prevail over exploration and direct experience by pupils. Such approaches have contributed to a vision of education increasingly centred on the abstract transmission of knowledge rather

than on situated and bodily learning, in contrast to the most recent theories of experiential learning.

In this context, reflection on the need to reopen educational spaces to the outside world is a critical response to a long-held but increasingly questioned approach, in light of ecological emergencies, youth unrest and the search for new inclusive and sustainable approaches.

While in Europe, outdoor education is now well established through numerous initiatives, in Italy, research and educational experiments based on outdoor education have only recently begun to spread in both school and non-school contexts.

In particular, over the last ten years, the international landscape of special education and special pedagogy has seen a strong growth in initiatives aimed at children with disabilities. It is in this context that the concept of "Outdoor for All" (Stavrianos & Pratt-Adams, 2022) has developed, an inclusive approach that promotes educational experiences in outdoor environments designed to be accessible and educational for all individuals, whether they are users with physical, cognitive or sensory impairments (Louv, 2005).

### **The Mind Incorporated into Educational Processes**

In contemporary educational research, one of the most innovative and promising approaches, which focuses on the body as a co-constructor of cognitive experience and as a mediator between mind, environment and learning, is Embodied Cognition. In Italy, the scholar Gomez Paloma marked a turning point by emphasising the urgent need to abandon linear cause-and-effect models in favour of complex, transdisciplinary paradigms capable of interpreting the educational relationship in its biological, cultural and emotional entirety. From this perspective, Embodied Cognition is a central hub in educational neuroscience (Gomez Paloma, 2009), offering a dynamic interpretation of learning in which perception and action are not accessory but structurally co-determining. The body, a mere object of evaluation, becomes the subject of cognition, according to a model that rejects the separation between mind and environment (Gallese, 2003, Le Doux, 2002). At an international level, the internalisation between environmental stimuli and neural plasticity has been documented in numerous studies (Segel, 2001), confirming the circular nature of the relationship between knowledge.

Wilson (2002) in line with the principles of the same perspective, states that "the body requires a mind to function" (p.625), highlighting that mental activity is rooted in the sensory-motor needs of the organism, thus arguing that cognitive processes are distributed throughout the body and the environment (Ling, Clark, & Wichester, 2010).

Some recent theories, such as that of Barsalau (2008), have confirmed that linguistic, conceptual and decision-making abilities emerge from recurring bodily interactions with the external environment (Glemberg et al., 2013) and demonstrate how most cognitive functions, from reasoning to understanding and

language, require motor and sensory simulations, taking the form of embodied cognition.

From a historical and philosophical point of view, Embodied Cognition has its roots in the phenomenological reflections of Husserl (1952) and Merleau-Ponty (1945), up to the recent considerations of authors such as Nòe (2009), who argued that knowledge is not something that happens “inside us”, but rather a process that takes place and is realised through the body as it enters into relationship with the world.

At the same time, Gibson's ecological psychology (1979) introduced the concept of “affordances”, i.e. the opportunities that the environment offers according to the subject's perceptual abilities, and it is from this point of view that learning takes place as a form of bodily-situated adaptation, in which knowledge is not transmitted but constructed in sensory-motor interaction. It is in this direction that this construct can make a significant contribution to special education, promoting educational design capable of grasping the complexity of the learner, especially when boys and girls with intellectual disabilities are involved (Gomez Paloma & Damiani, 2015; Immordino-Yang & Damasio, 2007).

Activities such as walking on uneven ground, climbing natural structures, cultivating vegetable gardens or finding one's way in open spaces stimulate the entire sensory-motor system, enhancing attentional, mnemonic and relational skills. For a young person with cognitive disabilities, for example, the act of learning about a plant, picking it, observing it and describing it becomes a complete experience that intertwines visual perception, fine motor skills, language and socialisation. It is in this sense that learning is no longer abstract but embodied, situated and shared.

### **The Role of Implicit Knowledge in the Educational Relationship between Families and Children with Disabilities**

This research project is based on the assumption that the implicit knowledge that families build around disability is a crucial variable in the educational relationship with their children, influencing their opportunities for participation, exploration and autonomy in a more or less conscious way. These representations, which are often unspoken and established over time through personal and cultural experiences, directly influence the ability to activate inclusive pathways such as those proposed by Outdoor Education for All.

In fact, according to folk theories and implicit theories (Bruner, Abric), family representations are tacit and informal knowledge that deeply influence educational practices, parental choices and relational patterns within the family context.

They act as latent cognitive and emotional devices that shape the perception of disability. they also constitute real “ways of seeing” the world, structured in socially constructed belief systems. This gives rise to attitudes, actions and cognitive structures that influence recognised opportunities, internalising social

and symbolic narratives that greatly influence the perception of the potential and limitations of one's children, shaping everyday educational practices (Jodlet, 1991).

Abric's approach allows us to understand how beliefs shared within a social group are organised into hierarchical cognitive systems, influencing both perception and action.

Abric (1994) further developed this theory by introducing the concept of the central core, according to which every social representation is structured around a central, stable, shared and non-negotiable system and a peripheral system, which is more flexible and subject to the influence of contextual experiences. His approach allows us to understand how beliefs and knowledge are influenced by experiences and contexts of reference. The central system includes historically established values, norms and beliefs, while the peripheral system mediates interaction with everyday reality, translating beliefs into actions and concrete positions in the context of disability. These implicit beliefs are often established over time and unconsciously transmitted through practices, narratives and experiences, ultimately shaping parents' expectations and perceived possibilities for their children. The central core may contain deep-rooted and non-negotiable beliefs about vulnerability, incapacity or constant need for protection, while the peripheral elements allow for functional adjustments in parenting behaviour without changing the underlying structure. The implicit knowledge of families of young people with disabilities can therefore consolidate limiting or enabling views, directly affecting the possibility of the person with disabilities to develop degrees of freedom (Sibilio, 2016), agency (Aiello 2016) and self-determination (Wehmeyer, 2005). Considering representations within Outdoor Education practices means recognising that every educational experience is influenced by a network of pre-existing meanings and that pedagogical action has the power to transform not only bodies but also family imaginaries and narratives around disability.

## **The Context of the Research**

The research is being conducted in the municipality of Quarto, in the Phlegraean area of the Campania region, and is part of a wider educational network known as the "Cittadella dell'inclusione" (Citadel of Inclusion), which was set up to address local educational emergencies and combat the processes of social exclusion affecting vulnerable individuals. This is a well-established reality in Campania, inspired by a systemic and participatory pedagogy, in which inclusion is understood as a founding principle of transformative practice.

The project is based on a phenomenological, ecosystemic and bioeducational perspective that values differences as resources and builds shared pathways between schools, families and the local area. It aims to rethink disability as an issue of identity and, consequently, of education (Ghirotto, 2020), in line with the phenomenological approach of inclusive educational research, which focuses on subjective experience and the relationship between

the individual and their context (Veck & Hall, 2018), in which the centrality of the subject becomes essential.

The Quarto area is characterised by a high level of social fragility, as highlighted by ISTAT 2019 data, which assigned this area a score above the national average. This is due to an accumulation of adverse events and factors, infrastructural and environmental weaknesses, anthropogenic pressures and, above all, vulnerable human capital, which does not allow the community to respond adequately to crises and adversity.

The local production system, which is not very stable, is also a source of weakness for the area.

The population considered for the study consists of 20 young men and women with disabilities, aged between 20 and 30, and their parents, having selected a group of people who share the same characteristics as the subject of the study.

The methodology used is qualitative, allowing for the creation and administration of interviews with parents, questionnaires, thematic analysis using maxqda software, focus groups with the young people's families and analysis of the evidence. This approach aims to explore in depth the implicit dimension that guides educational choices, with the aim of stimulating awareness of the implicit knowledge that guides their educational choices and nourishes their relationship with their children. A qualitative analysis based on a phenomenological approach is preferred, examining the details and particularities of the context. The characteristic of idiographicity is therefore central to this type of analysis (Mortari, pp. 35 and 36), in which the experience of the subjects is considered within a well-defined context. In this way, a living knowledge is developed, intertwined with experience and open to change.

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