

# The body and corporeity in the context of environmental education with an ecological orientation

RAFFAELLA C. STRONGOLI

Ricercatrice di Didattica e pedagogia speciale – Università degli Studi di Catania

Corresponding author: raffaella.strongoli@unict.it

**Abstract.** In this paper, we have taken up the recent line of investigation into eco-pedagogy, refusing reductionist approaches and perspectives that consider the natural environment as a mere element, object or tool that is disconnected from the everyday lives of most people. The aim of the paper is to conduct an analysis of the teaching dimensions regarding environmental education with a wide-ranging ecological perspective. In particular, the text examines the body and corporeity as the basic elements of the experience, knowledge, and development of behaviors oriented in an ecological sense within the teacher-student relationship and the school context.

**Keywords.** eco-pedagogy – body – environmental education – ecological teaching – outdoor education

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## 1. Educating *undisciplined* bodies

Among the many dichotomies that have long distinguished classical western thought, the body has almost always been placed in the devalued pole: that of the irrational part opposed to reason, nature opposed to culture. It was considered to be the lesser element that needed to be curbed because it was simply a set of organs and the seat of the impulses. According to this dichotomous perspective, it was necessary to manage and control the body, and sometimes even suppress it to leave room for the exaltation of the other pole, in which the mind, thought and reflection were to be found.

Descartes' notion of the separation of the mind and body was progressively demolished over the course of the twentieth century, until Antonio Damasio actually wrote of Descartes' *error*<sup>1</sup>; in his famous work, Damasio summarized his theory with the now well-known expression that mind and body are so inseparable as to be “cut from the same cloth”<sup>2</sup>.

The reunification of these elements—that for a long time were considered to be divided—is mainly due to the phenomenological studies of Merleau-Ponty, who claimed that

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<sup>1</sup> A. Damasio, *Descartes' Error: Emotion, Reason, and the Human Brain*, New York, Harper Collins, 1994, It. trans, *L'errore di Cartesio: Emozione, ragione e cervello umano*, Milano, Adelphi edizioni, 1995.

<sup>2</sup> A. Damasio, *Looking for Spinoza: Joy, Sorrow, and the Felling Brain*, Orlando, FL, Harcourt, 2003, It. trans, *Alla ricerca di Spinoza. Emozioni, sentimenti e cervello*, Milano, Adelphi, 2003.

the only way we can be aware of the world and get to the heart of things is through the body. According to his phenomenological perspective, the subject does not *have* a body, but *is* a body<sup>3</sup>.

A similar conclusion was reached by Umberto Galimberti, who argued that the distinctive element of the human body is *intentionality*: that is, it reaches out towards the world and is never simply an *object*. In this sense, there is no such thing as an internal or external experience of a person, since every experience is the result of the constant reflection of the self on the world and vice versa; therefore, the correlate of the body is always necessarily the environment<sup>4</sup>. In this game of constant mirroring, a person assumes and knows the position of objects through the position of his or her body and vice versa. Thus, the opportunity to know the world does not pass through a reason presumed at the outset, but through an attribution of meanings made by the person and mediated by the *embodied* sensory dimension: the world is not what we think it is, but what we experience<sup>5</sup>.

Together with the phenomenological perspective, the central role of the body is also carried out by the so-called perspective of the *embodiment*, which is part of the broader paradigm of the complexity. *Embodied* refers to the idea that cognition depends on the sensory-motor experiences conducted by the body and, moreover, to the fact that the sensory-motor abilities of individuals are incorporated into a context that includes psychological, biological and cultural elements. If it is the body that allows and directs the cognitive processes that can be activated, then the environmental factors are fundamental because they determine the possible options: body and environment are, once again, in a situation of mutual specification<sup>6</sup>. In this sense, the essence of the person “is always embodiment”<sup>7</sup>, and the body identity is not already formed, but it is a cognitive, social, cultural construction, linked to the morphological constraints of the body.

From these considerations, it appears that the attention of scholars on the theme of the body has progressively focused on the social production of knowledge through the brain—understood also as the mind—the body, and the environment<sup>8</sup>. It is the sequential logics of knowledge that have been completely subverted: cognition, understood as representation and processing of information, and action, i.e. the responses put into effect, do not occur in sequence, but act at the same time. A similar redefinition occurred with the advent of the well-known neurophysiological studies on mirror neurons, which demonstrated the evidence of the dynamics of mirroring with regard to intentional motor behavior, social cognition and empathic feeling; in other words, the nerve structures involved in the analysis of one’s motor actions and emotions are activated even when they are recognized in others<sup>9</sup>.

<sup>3</sup> M. Merleau-Ponty, *Phénoménologie de la perception*, 1945, It. trans. *Fenomenologia della percezione*, Milano, Il Saggiatore, 1945.

<sup>4</sup> U. Galimberti, *Il Corpo*, Milano, Feltrinelli, 2017<sup>23</sup>.

<sup>5</sup> U. Galimberti, *Il Corpo*, cit.

<sup>6</sup> E. Rosch, E. Thompson, F.J. Varela, *The Embodied Mind: Cognitive Science and Human Experience*, Cambridge Mass, The Mit Press, 1991.

<sup>7</sup> M. Zaner, *The problem of the embodiment*, L’Aja, Nijhoff, 1964.

<sup>8</sup> H. Jenkins et al., *Confronting the challenges of participatory culture: Media education for the 21st century*, Chicago, IL, MacArthur Foundation.

<sup>9</sup> V. Gallese, C. Keysers, G. Rizzolati, *A Unifying View of the Basis of Social Cognition*, in «Trends in Cognitive

Along this rather revolutionary wave, that overturns the classical perspective that viewed the body as another element, detached from the mind and thought, it becomes clear that the body cannot be understood only as the physical place where emotions, perceptions and sensations are *embodied*, as if they were “disconnected from the flesh”—as if they had a different nature from the sensory one. In this way, we would follow the same paths again and use the same logics of opposition. Therefore, starting from the need to adopt a complex conception of man, which abandons all forms of dualism, a transversal concept emerges to highlight the link between body, emotion and cognition: that of corporeity.

Corporeity refers to the passage from the conception of a body that exists as an object in itself, to the idea that it is the result of a construction realized through the way we see it and how we react to it: from having a body to being a body. Corporeity is expressed by the relationship that a person has with the other and with the world; it communicates a person’s way of being and interacting and is, at the same time, the basis of the quality of the experience conducted and its outcome.

Corporeity communicates who we are in relation to the world and refers to a social dimension that defines the contexts that can promote education concerning the body. To this regard, it would seem relevant to promote the activation of education regarding corporeity that goes beyond mere motor education—which reduces the body to the corporeity of movement in a physical sense—and is a rather complex perspective that brings together thinking and doing, cultural and natural. As Riccardo Massa claimed, apart from the importance of the body in sport, school and training providers in general must place importance on corporeity to become places where cognitive and affective processes are incorporated<sup>10</sup>.

The body is not a new theme for pedagogical studies; on the contrary, the body was an important subject of discussion in the past century. From Dewey to Bovet, Decroly to Claparède, and from Ferrière to Montessori, it was argued that the school should promote concrete experiences in which action should prevail over cognition. Despite the attention paid to the theme, the body remains a complicated subject to deal with because it is difficult to rein in; the body is *undisciplined*, i.e. it escapes the rigid sectorialization of *disciplines* because it responds to complex logics. For these reasons, in spite of the large number of studies on this subject in the pedagogical field, immobility is still highly valued in today’s school context: students are considered to be polite if they are able to sit still and exercise strict control over their bodies and their need to move. Therefore, it appears that all the talk about the body does not actually indicate a change in the traditional structure of knowledge and its applications; in fact, the body risks remaining merely an object of knowledge and speculation.

Still today, the body is often ignored in the Western culture that remains rooted in the sublimation of the mind, thought, and intellectual work that is increasingly held in high regard. In some ways, this has been exacerbated by the widespread diffusion of new technology; smartphones, touch screens, and the exponential growth of professions carried out in close contact with a personal computer, as an almost unique and isola-

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Sciences», 8, 2004, pp. 396-403; V. Gallese, *Intentional Attunement: A Neurophysiological Perspective on Social Cognition*, in «Brain Res. Cog.», 1079, 2006, pp. 15-24.

<sup>10</sup> R. Massa, *Cambiare la scuola. Educare o istruire?*, Roma-Bari, Laterza, 1997.

ted interlocutor, have turned these tools into prostheses—extensions not so much of the body as of the mind. They have become the privileged tools through which thought is translated, using the language of the gadgets. In order to avoid the risk of adopting a vision of educational practices locked in a private, self-centred and self-referential space, made up only of electronic gadgets, it is necessary to broaden the horizon to include the body and corporeity in a wide-ranging perspective.

The growing attention paid to issues related to the body and corporeity in the world of training derives from a now widespread awareness of the need to consider the global nature of the student; there is a pressing need for a search for appropriate forms of promotion of global and flexible ways of communication, especially with regard to the choice and organization of spaces and places that are very different from the everyday teaching experience which is becoming more and more standardized and anti-ecological. Interest in training spaces means developing the educational potential of what has been defined as the “third teacher”<sup>11</sup>, that is, the environment, with the awareness that some spaces are more able than others to foster complex, global experiences, which remove knowledge from artificial disciplinary pigeonholes in which it has been placed, to return it to its embodied dimension. In accordance with these perspectives it is evident that if it is the objects of the world that indicate to the body its possibilities, and it is their physiognomy that moves it away or approaches it, then it is of fundamental importance to provide *attractive* educational spaces to foster situations and educational experiences that are as broad and varied as possible.

As Foucault notes, the arrangement of bodies, spaces and times constitutes the silent root that organizes people’s lives, both from a social and cultural point of view, contributing to build a horizon of meaning, a sensorial *continuum*, that is affective-practical, socio-cultural and institutional within which to place, classify, explain and interpret biological, social and human phenomena<sup>12</sup>. The space that the body occupies is not *positional*, that is, it is not linked to the disposition of things according to an abstract system with no perspective, but it is *situational*—it is linked to the situation in which the body finds itself, fruit of the tasks and possibilities that it carries out in terms of actions. This is how the *space* of the body becomes a *field* of action.

## 2. Organization of educational bodies and spaces

The theme of the body has been investigated more and more, and it has become one of the main subjects of contemporary culture. As regards the school, social and educational calls to schools to pay attention to the body began as long ago as the 1970s. These requests for innovation were accepted by the Italian legislation a few years later with the recognition of the educational value of motor skills and starting up sport in schools, which were recognized as objectives that concern all the dimensions of personality: morphological-functional, intellectual-cognitive, affective-moral and social<sup>13</sup>.

<sup>11</sup> T. Strong-Wilson, J. Ellis, *Children and Place: Reggio Emilia’s Environment as third teacher*, in «Theory into practice», 46, 2007, pp. 40-47.

<sup>12</sup> M. Foucault, *Surveiller et punir. Naissance de la prison*, Paris, Editions Gallimard, 1975, It. trans, *Sorveglianza e punire: nascita della prigione*, Torino, Einaudi, 1976.

<sup>13</sup> DPR, 12 febbraio 1985, 104, *Approvazione dei nuovi programmi didattici per la scuola primaria*.

It cannot be denied that in recent decades there has been a growing focus on the body at school, which, however, cannot be simplistically traced back to the training and recognition of expertise related to the motor sciences. The epistemological change that has taken place in recent years in the field of the motor and sports sciences has made a radical change in the way we understand the activities that engage human movement. In particular, the latest psycho-motor studies show how childhood experience is characterized by global knowledge, made up of unity between action and thought; moreover, research into the educational value of movement has shown how it can increase body awareness, the ability to recognize and process emotions, improve the image of oneself by integrating the different parts, both subjectively and socially, and improve observational, communicative and interpersonal skills<sup>14</sup>.

Despite a growing interest in education regarding the body and corporeity, routine education still has a long way to go before concrete experience and body involvement become integral to the process; one contributing aspect of this is certainly the configuration of school spaces, which remain very structured and are therefore unable to accommodate and promote the multiplicity of ways of communication that attention to the body and corporeity requires<sup>15</sup>. The attitude of the school towards bodies is almost completely aimed at their physical constraint, submission and social *discipline* because it is believed that through the *discipline* of various subjects it can be manipulated and made docile to leave room for the possibility of cultivating the mind<sup>16</sup>. The *bodies that go to school*<sup>17</sup> are subjected to discipline to become *docile* thanks to the techniques of normalization and control exercised by the separation between body and mind; separated and classified as mere objects of knowledge, body and mind are thus placed at a distance from the student who, in this way, can access supposedly objective knowledge.

The widespread tendency to objectify and separate the subject from the object of experience is indicative of one of the greatest limits of institutionalized knowledge: that of theorizing without incorporating. But what does *incorporating knowledge* mean? *Giving body* to knowledge means not separating spaces and times, since all teachers and students are always at school with all their corporeity, which is made up of impulses, needs, perception and attribution of meanings through that game of reciprocal mirroring between the person and the world mentioned above.

Recognizing the presence of bodies at school requires above all the incorporation of knowledge and the enhancement of the teacher-student relationship, since, as Dewey already noted, there is no such thing as things in themselves, separated from relationships, contexts and experience, so it is precisely in the relationship that meanings are built<sup>18</sup>. The body of education is, therefore, that of the space of the relationship, which is the relationship between bodies and between perceptions and representations of them. In order to configure itself as such, the relationship requires attention to the constant

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<sup>14</sup> A. Cunti (ed.), *Corpi in formazione. Voci pedagogiche*, Milano, FrancoAngeli, 2015.

<sup>15</sup> R. C. Strongoli, *Quando gli spazi educano. Ambienti d'apprendimento per una didattica all'aperto*, in «Pedagogia Oggi», XVII, N.1, 2019.

<sup>16</sup> M. Foucault, *Sorvegliare e punire*, cit.

<sup>17</sup> AA.VV., *A scuola con il corpo*, Firenze, La Nuova Italia, 1974.

<sup>18</sup> J. Dewey, *The Source of a Science of Education*, New York, Livering Publishing Corporation, 1929, It. trans, *Le fonti di una scienza dell'educazione*, Firenze, La Nuova Italia, 1951.

exchange between teachers and students, to the communication that always takes place, in spite of intentionality, because “it is impossible not to communicate”, as already supported by studies on the pragmatics of communication: every behavior, action, movement *tells* something about us to others<sup>19</sup>. This constant communication is of a verbal and non-verbal nature; the latter concerns proxemics, i.e. distance-proximity; kinesics, i.e. gestures and movements; and paralinguistics, i.e. non semantic vocal emissions such as tone of voice, pauses, silences, and haptic communication, which concerns physical contact between people and with objects. In this sense, therefore, the bodies of teachers and students are the catalysts of teacher-student relationships.

The teacher-student relationship is the *place*, the cognitive *space* in which to welcome social expectations, messages and conditionings on the body and corporeity in order to criticize them. In this sense, attention to the body from the educational point of view must never be translated into attempts at *normalization*, that is, to bring everyone back to a *norm*, to a rule that means conformity. The aim of education is not to teach students in a standardized way, and the teacher cannot just churn out content that is always the same regardless of the space and time of education. Difference is always an important value, and the aim of education and the teacher-student relationship must be to develop the characteristics of each individual student.

With so many wide-ranging issues concerning the body in education, we should consider not only the centrality of the teacher-student relationship in the promotion of the body and the corporeity of students and teachers, but also the importance of the role played by the already mentioned “third teacher”, that is the context, the environment<sup>20</sup>. The context defines the conditions of what can be taught with reference to the set (the set of material data) and the setting (that is the way they are configured for a certain purpose). To this regard, the teaching choices made to set up the learning environments become crucially important.

### 3. Towards an *embodied form of eco-education*

For several years now, the so-called *environmental crisis* has not only been the subject of scientific research but has also become the subject of wide-ranging debate in politics and the media.

The choice of the term crisis to indicate the situation of the natural environment gives rise to several considerations. *Crisis* is a word that comes from Greek and, in the etymological sense, it not only recalls fear, but also the need to choose, and to take steps to try to get out of a situation that requires a leap forward. Therefore, the crisis can become an important opportunity for a change of direction. However, the crisis also certainly signals the need to put urgent actions into operation; therefore, in these situations, decisions are often made by taking into account time constraints, without careful consideration or examination of the different paths that can be taken. As in education, time is

<sup>19</sup> P. Watzlawick, J.H. Beavin, D.D. Jackson, *Pragmatics of Human Communication: A Study of Interactional Patterns; Pathologies, And Paradoxes*, New York, W.W. Norton & Company, 1967, It. trans, *Pragmatica della comunicazione*, Roma, Atrolabio Ubaldini, 1971.

<sup>20</sup> T. Strong-Wilson, J. Ellis, *Children and Place: Reggio Emilia's Environment as third teacher*, cit.

a category that marks the state of things and their unfolding; therefore, what emerges from the so-called environmental crisis is a tendency to run for cover, find makeshift solutions, and to try to respond to one problem or another at the time it occurs, without long-term planning.

Unlike the environmental *crisis*, environmental education can in no way afford to resort to immediate emergency solutions, but must design and build strategies, taking into account the times of education. It has certainly undergone numerous changes in recent years because it has had to adapt to the ever more rapid evidence of climate change, moving from a perspective that had as its main purpose the dissemination of information on the protection of natural resources, to the need to train individuals to adopt environmentally friendly lifestyles.<sup>21</sup> At the forefront of pedagogical research in the environmental field, we can see the configuration of *eco-pedagogy* that aims to be *eco-centric* in order to try to stem or at least limit the western anthropocentric perspective, which has made people the “measure of all things”, the consumer of a world whose nature is considered external to them, to be manipulated and exploited<sup>22</sup>.

The eco-pedagogical perspective is linked to the broad ecological theories, which recall, among others, the works of Gregory Bateson and Philippe Descola. It points out the presence of symbiosis, vicariance and complementarity between the poles that Western culture has represented in a dichotomous sense: between nature and culture, man and nature, and subject and object<sup>23</sup>. From a theoretical point of view, the formation of an ecological thought translates into the acquisition of a complex thought capable of integrating the person and nature, and, from an educational point of view, it implies that the school should rethink its canonical spaces to open up to the natural environment.

The mind and body dichotomy is one of those that the ecological perspective aims to overcome; in particular, from the interweaving of subjective and objective, natural and cultural dimensions it appears that the subjective dimension of the body does not allow us to consider it as something that has an objective nature in itself, but as the bearer of an acculturated nature.

However, the separation between mind and body is reflected in the division that school subjects make of the different parts of the body: some deal with the head, other subject areas are concerned with eyes, ears and hands, while the legs remain the exclusi-

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<sup>21</sup> L. Mortari, *Per una pedagogia ecologica. Prospettive teoriche e ricerche empiriche nell'educazione ambientale*, Firenze, La Nuova Italia, 2001.

<sup>22</sup> F. Pinto Minerva, *Prospettive di ecopedagogia. A scuola dalla natura*, in M.L. Iavarone, P. Malavasi, P. Orefice, F. Pinto Minerva, (eds.), *Pedagogia dell'ambiente 2017. Tra sviluppo umano e responsabilità sociale*, Lecce-Rovato, Pensa Multimedia, 2017, pp. 173-192.

<sup>23</sup> G. Bateson, *Steps to an Ecology of Mind*, San Francisco, Chandler Publishing Company, 1972, It. trans, *Verso un'ecologia della mente*, Milano, Adelphi, 1976-2013; Id., *The thing of it is*, in Katz et. al. (eds.), *Explorations of planetary culture at the Lindisfarne conference: Earth's answer*, New York, Haper & Row, 1977; Id., *Mind and Nature. A Necessary Unit*, New York, E. P. Dutton, 1979, It. trans, *Mente e natura. Un'unità necessaria*, Milano, Adelphi, 1984.

P. Descola, *Par-delà nature et culture par Philippe Descola*, Paris, Editions Gallimard, 2005, It. trans, *Oltre natura e cultura*, Firenze, SEID Editori, 2014; Id., *Diversité des natures, diversité des cultures*, Paris Bayard, 2010, It. trans *Diversità di natura. Diversità di cultura*, Milano, Book Time, 2011; Id., *L'écologie des autres l'anthropologie et la question de la nature*, Paris, Éditions Quae, 2011, It. trans, *L'ecologia degli altri. L'antropologia e la questione della natura*, Roma, Linaria, 2013.

ve competence of motor education. As Edgar Morin notes, the school teaches students to isolate objects from their environment, to separate disciplines and their fields of competence, as if they existed before knowledge, to separate problems to eliminate everything that could bring disorder or contradiction<sup>24</sup>; everything responds to a logic of programming that makes students unprepared to respond to the uncertainty of everyday life. Knowledge, on the contrary, is a multidimensional phenomenon that contains diversity and multiplicity: it is inseparably physical, biological, cerebral, mental, psychological, cultural and social<sup>25</sup>. According to the indications of Heisenberg's principle of indetermination first, and of the ecological paradigm second, the separation between subject and object falls away in the cognitive act, in the sense that the operator of knowledge is at the same time the object of knowledge. Moreover, regarding the object, Varela claims that an attribute present in reality is not something that existed before but is configured through the relationships that the organism has with the environment, which, in turn, does not contain attributes in itself<sup>26</sup>.

Therefore, far from being the result of speculation carried out in an ivory tower cut off from reality, knowledge is generated by action; as Maturana and Varela maintain, *every action is knowledge, and all knowledge is action*<sup>27</sup>—an action that is the result of choices, rationality, intuition, and previous knowledge and that is connected with the construction of artifacts related to situations, and then to reflection, according to Schön's formula: *reflection in action and reflection on action*<sup>28</sup>.

From a pedagogical point of view, these considerations imply that knowledge cannot be considered as the projection of reality onto a mental screen, but as a cognitive organization that produces both the projection and the screen. According to the post-constructivist approach, knowledge is created in the learning process which cancels the distinction between the owner of knowledge and the user of knowledge. It is the process of design-action-reflection that creates the conditions for the activation of the learning process.<sup>29</sup> In this sense, therefore, the teacher is not asked to provide *pre-packaged* knowledge, but to support the processes that allow daily experiences to be organized and formalized.

In order to encourage cultural and cognitive decentralization, to welcome and understand the other, who is not just another human being, from an absolutely anthropocentric perspective, but is the ecological other, the other in a systemic sense according to the eco-pedagogical approach of Franca Pinto Minerva, we must broaden our experiences in order to broaden our knowledge<sup>30</sup>. If, as the scholar says, an ecological education project invites us to discuss the entire human status in all its facets, such as sensi-

<sup>24</sup> E. Morin, *La Tête bien faite*, 1999, It. trans, *La testa ben fatta*, Milano, Raffaello Cortina, 2000.

<sup>25</sup> E. Morin, *La Méthode 3, La Connaissance de la Connaissance*, Paris, Editions du Seuil, 1986, It. trans, *La conoscenza della conoscenza*, Milano, Feltrinelli, 1989.

<sup>26</sup> F. Varela, *Autopoiesi ed emergenza*, in R. Benkirane (Ed.), *La teoria della complessità*, Torino, Bollati e Boringhieri, 2007.

<sup>27</sup> H. Maturana, F. Varela, *El árbol del conocimiento*, 1984, It. trans, *L'albero della conoscenza*, Milano, Garzanti, 1992.

<sup>28</sup> D.A. Schön, *The Reflective Practitioner: How Professionals Think in Action*, New York, Basic Books, 1983, It. trans, *Il professionista riflessivo. Per una nuova epistemologia della pratica professionale*, Dedalo, Bari, 1993.

<sup>29</sup> P. G. Rossi, *Tecnologia e costruzione di mondi*, Roma, Armando, 2009.

<sup>30</sup> F. Pinto Minerva, *Prospettive di ecopedagogia. A scuola dalla natura*, in M.L. Iavarone, P. Malavasi, P. Orfice, F. Pinto Minerva (eds.), *Pedagogia dell'ambiente 2017. Tra sviluppo umano e responsabilità sociale*, Pensa Multimedia, Lecce-Rovato, 2017, pp. 173-192.

vity, imagination and intellect, then we can also include the body among the elements to be rethought. In fact, the ecological world includes bodies, with their material, representative and cultural dimension.

At this point in the discussion, it is not at all risky to define as *ecological* an educational perspective that works “with and on the body” because it aims to develop the unity of cognitive, emotional and bodily aspects<sup>31</sup>; an ecological perspective also requires attention to be focused on the context for the configuration of educational spaces that do not make the body something to be reined in, contained and limited. Through contact, through the hand, which is the main interface with the outside, as Montessori already claimed, the subject perceives his connection with the rest of the world and acquires the awareness of being corporally rooted. The relationship with the environment, through the body and movement, is a keystone with regard to the cognitive, psychological and emotional development of the student.

From the need to urge the learners to think of themselves as a bio-psycho-social entities, in whom body, emotion and cognition are indissoluble parts, many points for reflection of a didactic nature arise, since it is evident that this requires a review of linear logics, cumulative paths and disciplinary segmentations. Knowledge should be taught in such a way that the school subjects are intertwined and not rigidly divided into parcels of Italian, mathematics and history; this consideration becomes even more compelling if we pay attention to corporeity in the natural environment which, by definition, does not foresee and above all does not allow these artificial divisions.

#### 4. Giving body to knowledge in experiential education

More than thirty years ago, Franco Frabboni stated that *discovering the environment* means implementing processes of *decomposition-systemisation-reorganisation* of the necessary environmental knowledge in order to then move on to a personal and stable *assimilation/adaptation* of the contents and cognitive behaviours collected. In this way, he laid the foundations for many of the considerations brought to light today by the eco-pedagogical perspective. *Discovering the environment* means learning to learn, and teaching students how to learn<sup>32</sup>.

Therefore, in order to open up to a process of change in an eco-pedagogical sense, the processes of schooling are called upon to initiate a relationship of cultural and didactic reciprocity with the environment, according to the double meaning of environment as a *category of content*, with reference to aspects related to the knowledge of biological and environmental issues, and as a *category of form*, that is, with regard to the spaces reserved for training<sup>33</sup>. In other words, the school opens to the environment to update its curriculum and to make the natural environment itself an educational space that can enrich the teaching procedures. In fact, not all changes need to go through the introduction of technological devices; the culture of the environment can become the culture of change<sup>34</sup>.

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<sup>31</sup> G. Malpeli, *Lavorare con il corpo*, in S. Kanizsa, (ed.), *Il lavoro educativo. L'importanza della relazione nel processo di insegnamento-apprendimento*, Milano, Mondadori, 2007, pp. 48-49.

<sup>32</sup> F. Frabboni, *Scuola e Ambiente*, Milano, Edizioni Scolastiche Bruno Mondadori, 1980.

<sup>33</sup> R. C. Strongoli, *Quando gli spazi educano. Ambienti d'apprendimento per una didattica all'aperto*, cit.

<sup>34</sup> F. Frabboni, *Scuola e Ambiente*, cit.

The school's openness to the environment could make it possible to avoid the rigidity of the instructivist and dichotomous models and to set in motion learning paths that follow logics inspired by research and the construction of knowledge according to constructivist and post-constructivist paradigms. The environment can represent a privileged way through which to reduce the distance between the school and the needs of its users, as well as being a place in which to *develop a grammar of observation and imagination*<sup>35</sup>. It is certainly no coincidence that one of the greatest experts of intelligence, David Goleman, believes that the next cognitive step that humanity must develop is ecological intelligence, that is, the ability to make conscious choices with a very high degree of harmony with the natural environment<sup>36</sup>.

In order to train students so that they can develop this intelligence and *ecological wisdom*<sup>37</sup>, according to the other degree of complexity that we have highlighted so far, the school must be constituted as a *space open* to the direct experience of the environment, as a *laboratory*, for the acquisition of cultural tools functional to the elaboration of knowledge scientifically based on the environment, and as a *community* where, through practice, we go in search of the measure that gives order to the project of living.

An education that can call itself authentically ecological is one in which dichotomies give way to complex forms of thought. In particular, it is the ways of considering the body and corporeity in daily educational practice that require a radical revision, because, despite their reevaluation and rediscovery in recent years, the school does not yet seem to have taken on board the demands of renewal, and continues to offer a fragmented, divided form of knowledge that separates the body from the mind, reason from emotion, and nature from culture. In order to reverse the course and be "at school in every sense of the word"<sup>38</sup>, it is necessary to activate teaching proposals able to make the body *visible*, not only that of the student, but also that of the teacher, accepting the complexity of a teacher-student relationship between bodies in which the teacher is aware that his own body experience influences his professional action, with regard to the types of privileged language, the techniques chosen and the evaluation paths implemented.

It is clear that building educational experiences that possess this high degree of ecological complexity is a significant challenge for the world of education; this challenge is made even more complicated by the fact that in order to respond to it, one cannot in any way rely on tables, recipes or instructions for use, as Pietro Lucisano claims<sup>39</sup>. The teaching-learning process is one of those human phenomena that can be rationalized, that is, made scientifically controllable, only in part because it is based mainly on the already mentioned educational relationship; it is always different according to the subjects involved and, above all, it has a deep empirical roots: it lives in experience and presents the same strengths and weaknesses of it.

<sup>35</sup> F. Frabboni, *L'ambiente a scuola: il perché pedagogico e didattico. Ovvero, quando la scuola si fida con l'ambiente*, in F. Frabboni, G. Gavioli, G. Vianello (eds.), *Ambiente s'impara*, Milano, FrancoAngeli, 1998.

<sup>36</sup> D. Goleman, *Ecological Intelligence: How Knowing the hidden impacts of what we buy can change everything*, New York, Broadway Business, 2009, It. trans, *Intelligenza ecologica*, Milano, Rizzoli, 2009.

<sup>37</sup> L. Mortari, *Abitare con saggezza la terra. Forme costitutive dell'educazione ecologica*, Milano, FrancoAngeli, 1994.

<sup>38</sup> I. Gamelli, *A scuola in tutti i sensi*, Torino, Pearson, 2013.

<sup>39</sup> P. Lucisano, *Costruire esperienze educative*, in P. Lucisano, A. Salerni, P. Sposetti (eds.), *Didattica e conoscenza*, Roma, Carocci, 2013, pp. 15-51.

The rooting of the learning-teaching process in the empirical experience, which is also physical, and in the teacher-student relationship brings with it the need to configure experiences that can be authentically educational<sup>40</sup>. The things that anyone can learn through experience are incredibly superior to what any teacher can teach according to the traditional transmission model. The acquisition of knowledge does not take place according to the *technical metaphor* of the *vessel to be filled*, in which the student is represented as a vessel to be passively filled to the brim, and the teacher as the one who chooses what, how and how much to fill it<sup>41</sup>. On the other hand, the process of knowledge is activated through an integrated mind-body development, the same that is also found in the spontaneous, exploratory, motor activities that the child carries out with the pleasure of experiencing his body in relation to the world, space, and objects. Therefore, the activation of the learning process is encouraged in educational contexts characterized by experiential methodology that take into account the fact that one of the main features of the experience is that it includes the body and passes through the body.

One of the early proponents of the binding relationship between educational experience and the body was the Russian scholar Lev Vygotskij, who claimed as long ago as 1926 that the only educator capable of creating new reactions in the body is experience. It is interesting to note that he considered experience not only as a source of education, but also as the only one capable of exerting significant changes on the organism—not on the individual, on the mind, but on the physical, empirical, corporeal dimension; it is the intervention of the experience on the organism that activates the educational process<sup>42</sup>.

In order to build educational experiences that can be said to be ecologically oriented, it is necessary to organize the educational spaces; this involves programming the students' scope for movement, because an environment that does not change is an environment that does not respond, but simply forces. A strategy that could prove effective is, therefore, the already mentioned openness to the environment, in which the latter is understood as a category of form and content, in which not only the *set* and the *setting* change, becoming "outdoor", but also the teaching approaches.

Outdoor teaching is not a simple matter, because it is less structured than a regular teaching task; everything that is observed, which the students relate to dynamically, is very complex because it is not analyzed, fragmented and deconstructed, unlike the classical content proposed in the classroom; in fact, the latter is the result of a careful selection that proceeds from simple to complex, from the minimum unit to the general constitutive dimension: students learn about the seed, then the flower following a logic of progressive stratification of knowledge until the entire cycle of growth of a plant is clarified. The inverse perspective, i.e. the presentation of the plant, is almost never followed in the classroom.

Any possible interpretation of outdoor educational activities as a return to a naive naturalism should be avoided, as that often goes hand in hand with the idea that outdo-

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<sup>40</sup> J. Dewey, *Experience and Education*, New York, Kappa Delta Pi, 1938, It. trans, *Esperienza e educazione*, Milano, Raffaello Cortina, 2014.

<sup>41</sup> R.C. Strongoli, *Metafora e pedagogia. Modelli educativo-didattici in prospettiva ecologica*, Milano, Franco-Angeli, 2017.

<sup>42</sup> L. Vygotskij, *Pedagogičeskaja Psihologija*, Moskva, SMYSL, (1926), 1991, It. trans, *Psicologia pedagogica*, Trento, Erickson, 2006.

or education simply means changing places, physically moving objects, people and relationships from one space to another<sup>43</sup>. In open-air teaching, it is the relationships, in a vertical and horizontal sense, the distribution of information, the processes of knowledge that change, which are increasingly oriented to its co-construction, as well as the contexts, of course, that become authentic. The characteristics and particular recurrences that characterize outdoor educational experiences concern the activation of communication and cognitive channels related to the body; with a high degree of body involvement in an integrated sense, outdoor activities put subjects *in danger*, forcing them to leave their comfort zone, thus activating processes of progressive achievement of different autonomies not only regarding motor skills, but also related to emotional self-regulation<sup>44</sup>. Compared to the classic classroom teaching situation, the physical distance is shortened between students, students and teachers, and students and objects of knowledge and, since the body is the main mediator of communication, the non-verbal channel is to be privileged, with regard to both proxemics and kinesics. The contact with nature also favors the initiation of environmental education paths without mediation; that is, it allows students to work on the ecological aspects of that environment *category of content* already mentioned.

Given the premises and the hypotheses set out so far, we may draw some points for reflection about the possibilities that the adoption of an eco-pedagogic perspective can open up for the development of educational models that reject dichotomies and sterile fragmentation of knowledge in favor of a rooted and embodied construction of knowledge within educational practices that make the natural environment not only the background or the context, but also the content and the educational space. If, as stated at the beginning, the correlate of the body is always the environment and vice versa and, as Bruner argues, the cultural environment is both master and servant, creator and creation<sup>45</sup>, then the opportunity emerges for the school institution to adopt a complex perspective that brings together thinking and doing, the cultural and the natural, and to welcome the body and corporeity into daily educational practice as the founding dimensions of experience, knowledge and the development of ecologically oriented behaviors within the teacher-student relationship and the school context.

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<sup>43</sup> R. C. Strongoli, *Coltivare campi di azione in ambienti naturali di apprendimento*, in A. D'Antone, M. Parricchi (eds.), *Pedagogia della natura. Epistemologia, prassi, ricerca*, Bergamo, Zeroseiup, 2018, pp. 41-49.

<sup>44</sup> L. Carpi, *Educare in natura. Strumenti psicomotori per l'educazione all'aperto*, Trento, Erickson, 2017.

<sup>45</sup> J. Bruner, *Actual Minds, Possible Words*, Cambridge (Mass.) – London, Harvard University Press, 1986, It. trans, *La mente a più dimensioni*, Roma-Bari, Gius. Laterza & Figli Spa, 2013<sup>4</sup>.

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