Giornale Italiano di Educazione alla Salute, Sport e Didattica Inclusiva / Italian Journal of Health Education, Sports and Inclusive Didactics - Anno 5 n. 3 - ISSN 2532-3296 ISBN 978-88-6022-420-0 - luglio - settembre 2021 - CC BY-NC-ND 3.0 IT - https://doi.org/

IL RUOLO DEL CORPO NEI PROCESSI EDUCATIVI: LE ARTI PERFORMATIVE COME STRUMENTO DI STIMOLAZIONE MULTISENSORIALE IN UNA PORPSPETTIVA EMBODIED

THE ROLE OF THE BODY IN EDUCATIONAL PROCESSES: PERFORMING ARTS AS A MULTISENSORY STIMULATION TOOL IN AN EMBODIED PERSPECTIVE

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Abstract

The studies on mirror neurons have made it possible to understand that man has begun to learn thanks to imitation: an action that translates as a reading of the movement of others, recognizing it as one's own despite not knowing fully the motor program because it is unknown until a given moment. By nature we tend to imitate our neighbor, an aspect that suggests that we look at the other as a projection of ourselves (Rizzolatti G., 2019). The observation of motor actions activates neural mechanisms that appear to be the same ones that operate in the understanding of sounds and in the semantic attribution of communication codes, both verbal and paraverbal (Gallese & Lakoff, 2005). To fully understand the neuroperceptive potential, the proposal is to consider the valid and possible educational implications of the performing arts. If art is an experience (Dewey, 2020) and «*in the Piano delle arti a new conception of the school is expressed in which the dimension of knowledge of artistic manifestations and expressiveness finds full citizenship*» (Legislative Decree 60/2017), it is imperative to emphasize the process and how the mind works with artistic materials to produce creative results (Webster, 1990). According to an approach that refers to embodied cognition (Bersalou L., 1999) and to the role of the body in learning processes, these tools will be useful for the construction of an *artistic identity*, a profile necessary to define the traits of a complete personality on the way out from compulsory school.

Gli studi sui neuroni specchio hanno reso possibile la comprensione che l'uomo ha iniziato ad apprendere grazie all' imitazione: azione che si traduce come una lettura del movimento altrui riconoscendola come propria nonostante non ne si conosca a fondo il programma motorio perché sconosciuta fino a un dato momento. Per natura si tende ad imitare il prossimo, aspetto che fa supporre che si guardi all' altro come ad una proiezione di sè stessi (Rizzolatti G., 2019). L'osservazione delle azioni motorie attiva meccanismi neurali che risultano essere i medesimi che operano nella comprensione dei suoni e nell' attribuzione semantica dei codici comunicativi, siano essi verbali che

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paraverbali (Gallese & Lakoff, 2005). Per comprendere a fondo le potenzialità neuropercettive, la proposta è quella di considerare le valide e possibili implicazioni educative delle arti performative. Se l'arte è un'esperienza (Dewey, 2020) e «*nel Piano delle arti si esprime una nuova concezione della scuola in cui trova piena cittadinanza la dimensione della conoscenza delle manifestazioni e l'espressività artistiche*» (D. Lgs 60/2017), è indispensabile *porre enfasi sul processo e su come la mente lavora con materiali artistici per produrre risultati creativi* (Webster, 1990). Secondo un approccio che rimanda all'*embodied cognition* (Bersalou L., 1999) e al ruolo del corpo nei processi di apprendimento, tali strumenti saranno utili per la costruzione di un'*identità artistica*, profilo necessario a definire i tratti di una completa personalità in uscita dalla scuola dell'obbligo.

Keywords

Embodiment; Motor Learning; Performative Arts
Incorporamento; Apprendimento Motorio; Arti Performative

Introduction

The studies on the conduction of motor impulses by the scientists C. Bell (1811) and F. Magendie (1822) who discovered the difference between afferent and efferent pathways (*Bell-Magendie law*) has unfolded a new way of doing research on perceptual processes.

Between the second half of the nineteenth and twentieth centuries studies and research in neuroscience intensified and studies of prominent names such as Golgi, regarding motor control, Ruffini, regarding proprioception and Broca, regarding neural functions, became widespread. superior and aphasia.

Only recently, however, it has been possible to theorize that motor behavior also occurs on the part of psychic conditioning that is the result of an experiential experience and interaction with the environment.

In fact, it has been demonstrated by Krech and Rosenzweig (1960) how environmental stimuli produce changes at the neuronal and synaptic levels, increasing their activity.

This is confirmed by the discovery of the existence of the *nerve growth factor*, responsible for the development of the nervous system by Rita Levi Montalicini (1950s).

The various branches of cognitive science have conceived the mind as a decoder of abstract information.

Perceptual and motor systems, in fact, were thought to simply serve as peripheral *input* and *output* devices.

This theory was predominant in the early decades of cognitive psychology, when most of the knowledge of human thought was concerned with diversified forms of knowledge.

Artificial intelligence was also governed by models of abstract symbol processing. The philosophy of mind, on the other hand, made its contribution thanks to the modularity hypothesis of Fodor (1983), who assumed that central cognition does not proceed in a modular manner, but extrinsic perceptions do.

In spite of this, there is also a completely opposite theory, namely the repositioning of the role of sensory and motor functions in the interaction with the environment, an example of which is "*thought without imagination*" by Goodwin (1999); motor theories of perception such as those suggested by William James and others; the developmental psychology of Jean Piaget, who underlined the emergence of cognitive abilities of a sensorimotor skill base and, of course, the ecological psychology of J. J. Gibson, who saw perception in "economic" conditions and in interaction with the environment.

At the same time, in the field of artificial intelligence, behavior-based robotics has also begun to consider interaction with the environment rather than just the internal representations used for abstract thinking (Brooks, R.,1986).

Neuroaesthetics, one of the most modern areas of research in cognitive neuroscience, is focused on identifying the neural mechanisms underlying aesthetic appreciation (Brattico E., 2019).

Aesthetic sensations depend on the interaction between different cognitive and affective processes, involving at least three different levels (Nadal, 2013):

- an improvement in low-level sensory processing;
- a top-down activation of cortical areas involved in the evaluative judgment;
- an involvement of the dopaminergic reward circuit.

But, the emotions that music can arouse, for example, very often depend not only on the structural characteristics of a particular piece, but also on the listener, the performer, and more generally on the listening context. For example, attending a concert with friends could be much more enjoyable than listening alone.

The emotions induced by music have been grouped into types, based on a model (GEMS, acronym for Geneva Emotional Music Scale) that provides a taxonomy of nine emotions: wonder, transcendence, tenderness, nostalgia, tranquility, power, joy, tension, sadness.

They, in turn, can be grouped into three aesthetic macro-categories:

- a positive one (sublime music);
- a negative (music that makes you uncomfortable or dislikes);
- one that refers to the calm / comfortable dimension and the power of music to stimulate movement and dance.

According to neuroscience, listening to one's favorite music elicits positive emotions, such as joy or tenderness, and activates the ventral tegmental area, the striated cortex, the reward circuitry and the orbitofrontal cortex (Trost et al., 2015), regions that support pleasure and satisfaction.

Instead, feeling emotions such as the sense of pathos, melodrama or nostalgia, would be associated with the cerebral activation of the insula (psychological pain), of the cingulate cortex (empathy and emotional connotation of events), of the prefrontal ventromedial cortex (processing of emotions) and hippocampus (episodic memory), also demonstrated by the studies of Janata (2009).

Finally, the sense of agitation and strong negative emotions, such as tension, anxiety or excitement, would activate the amygdala and the sensory and motor areas (Koelsch, 2006).

Musical learning determines the creation of new audio and visuomotor connections between sensory and motor areas of the brain, which develop gradually and depend on musical practice. Multimodal neurons represent a type of mirror neurons, which are able to encode both visual and auditory information. The existence of multimodal audiovisual regions has also been proven over time for verbal language, human vocalizations and the coding of noises produced using objects. Mirror neurons were discovered by observing the movements of the macaque and within the ventral premotor cortex of the same.

It was therefore considered both the moment in which the macaque made motor movements, and when it observed other individuals making them. However, for the neuron to activate, an effective interaction of the hand with the object that is intended for action is required. Mirror neurons would be activated, in fact, in connection with a motor act that is aimed at a purpose, and not in the case of individual finger movements that make up the entire motor act. They are also sensitive to the type of grip and interpret the intention of the gesture. Many subsequent studies have also found that mirror neurons are also found in the inferior parietal lobe, specifically in its rostral portion. The latter consider the mirror system functional to the representation of an object whose motor properties they elaborate at that moment, processing a series of visual data deriving from the ventral path. In conclusion, mirror neurons are found in the rostral portion of the inferior parietal lobe and in the inferior frontal gyrus.

Mirror neurons in humans have been studied on the basis of studies concerning the reactivity of brain rhythms during the observation of their movements. It has been shown that seeing the performance of actions by other individuals, with different parts of the body, determines a block of the sensorimotor rhythm that reflects a condition of relative inactivity of the Rolandic region in the observers.

This study also made it possible to locate the areas involved during the observation of grasp-

ing actions: in fact, the individuals considered were tested in three different conditions:

- in the observation of gestures of grasping objects by the experimenter;
- as they reached the objects and grabbed them;
- in the simple observation of objects.

This experiment made it possible to understand that even the observation of gestures alone is able to activate the inferior parietal lobule, the ventral premotor area and the posterior part of the inferior frontal gyrus.

The frontoparietal system of the Mirror Neurons visually recognizes the gestures and their purposes and, moreover, allows to perform a series of mental functions:

- understanding of motor events;
- an understanding of the actions and intentions of other subjects;
- understanding the emotional state of others, thanks to mentalization and empathy;
- imitation in adopting a certain posture, crossing the legs, yawning, etc.;
- learning of visuomotor processes;
- social cohesion, group behavior, disgust or emulation;
- empathy for pain.

Even the recognition of body language, whether affective or merely symbolic, relies heavily on the frontoparietal mirror system that receives and processes information from the regions specialized in face recognition.

1. The paradigm embodied cognition and the perceptive dimensions of the body self

The "embodied cognition" paradigm is mentioned for the first time by Barsalou L., in 1999, it consists of a theory that considers the perceptual system as a containment network of concepts mentally represented as *perceptual simulations*, or as a reactivation of the sensory processes. engines with which the characteristics of the concepts were initially acquired. These perceptual simulations would be integrated with each other thanks to the associative neuronal interconnections.

Studies on the mirror neuron system, through the comparison between macaques, other primates and humans, revealed the activation of the mechanisms of the cerebral cortex thanks to visual-motor perceptual stimuli during movements performed by other subjects.

The concept of *Embodied Cognition* can be translated as *Endocorporeal Cognition*, and with this term we tend to emphasize how cognitive development is inevitably linked to motor development, since the experiences obtained from the body play an essential role in the correlation between perception- action-cognition.

It is therefore important to recognize the body as having a primary function in mental processes.

The embodied simulation becomes a condition for which an inter-individual resonance is established thanks to which «*the observation of an action induces in the observer the automatic internal simulation of the action itself, allowing the implicit and direct understanding of the movement of others*» (Catellani, 2015, p. 527).

If we consider the *embodiment* paradigm, "mind-body-environment", which is expressed within the transdisciplinary nature, which is the boundary between pedagogy and other didactic sciences, such as neuroscience, the body must be able to take on its own priority dimension, the primary vector of learning, for this reason it is worth trying to explore the capabilities of the body and above all the corporeality, understood as a hub of multiple knowledge (Gamelli, 2011).

This type of approach has recently reached high visibility, under the banner of embodied cognition: cognition, therefore, must be understood in its relationship with a physical body that interacts with the world, through a mutual environmental influence.

In conclusion, it can be said that the true place of cognitive activity is located in the body and in the context of the real-world environment, and intrinsically implies perception and action.

The prenatal and early childhood phases are characterized by a series of neuralgic periods, during which the formation of synaptic connections reaches its peak. Cognitive processes take place in the cerebral cortex, an area characterized by strong synaptic activity. Therefore, nature offers a baby a large number of cells to make these connections, both before birth and in the postnatal phase. If the cells responsible for this nerve development fail to mature during these critical periods, the child's learning opportunities are greatly reduced (Gordon, 1990).

The right perspective, therefore, is to inhabit one's body with fullness and awareness, but also as a critical capacity with respect to the self as a body. Your own experiences and bodily experiences must serve to socialize and tell about oneself outside.

«*The individual becomes aware of his own body through the relationship with the world and, at the same time, becomes aware of the world through his own body*» (Merleau Ponty M., 1965, p.165). It is the body, in fact, that guides or diverts the subject towards the conscious acquisition of a lifestyle that is appropriate to one's body and compatible with one's psycho-physical well-being. The body must be followed by the individual to adapt to the body image expressed by the social group to which the subject belongs and which allows him to orient himself in the context in which he interacts and communicates. Therefore, there seems to be, on the part of the subject, the search for a continuous balance between bodily experience understood as a private experience on the one hand, in which the bodily experience understood as a subjective experience is inscribed and on the other hand as a socially constructed bodily experience, which emphasizes the relationship with the environment through the space that the latter reserves for the individual in the development of his daily life and through the image that those around him send back to him (De Mennato, 2006). «*So individuals move between the desire to develop their own, intimate and personal bodily experience, which always corresponds to an image of themselves that is ideally projected in front of us, and the desire to emulate, imitate and make their own body cultural models towards which one feels affinity, towards that "culture of the body" and towards that particular social group with respect to which to conform one's need for belonging and recognition* » (Sassatelli R., 2004 in Lo Piccolo A., 2019, p.108).

The mind and the human body are equipped with motor functions designed to move and interact with the environment from birth and throughout life. These functions allow the individual to coordinate, through the processes of learning and self-learning that lasts throughout the developmental age, gross motor movements and those of fine coordination (writing, verbal language and manual skills), therefore, they allow interaction and knowing how to move in changing and fixed contexts.

They are formed spontaneously at first and through the instinct of imitation then, growing up, through educational intervention.

From this we understand how much teaching and in particular that of motor activity play a decisive role in the acquisition of socio-cognitive skills.

The French physiologist Alain Berthoz asserts that some manifestations of our organism respond to the theory of simplicity, whose characteristic is not that of simplifying the processes of solving problems or decoding social complexities, but of intuiting and creatively elaborating the most suitable mental circuits (Berthoz, 2011). Movement is like a sixth sense, «*perception is not only an interpretation of sensory messages: it is conditioned by the action, it is an internal simulation, it is judgment, it is an anticipation of the consequences of the action*» (Berthoz A., 2011).

It is with the theory of affordance that we can redefine the concept of perception, an affordance is not simply the act of perceiving a certain physical object and subsequently attributing its meaning (Gibson J., 1979), an affordance implies a semantic bivalence: one concerning the environment and the other the observer. These perception processes do not take place separately, but provide information to understand the environment and the person acting in it, in his totality of the body. In this regard, Gibson reiterates «(…) *that to perceive the world is to co-perceive oneself*» (Gibson J., 1979, p. 131).

The child's perception of one's self and the other is based on the task of self-recognition,

when the child is able to recognize his own reflection in the mirror, an action that requires relatively advanced cognitive skills, such as kinesthetic detection processes. which allow you to allocate your position with respect to other elements of the context (Gibson J., 1979).

If a child is able to perceive the environmental affordances for his actions and for himself, he will be able to exercise any form of movement he wishes according to his potential and with respect to his own body. With the development of psychomotor skills, he must gradually be able to perceive the affordances possible for the other "actors" and be able to relate each other's behaviors. A child should be able to perceive common affordances and understand his own subjectivity in intersubjectivity.

«*The body is at the same time what we identify with and yet say we possess, and this project of continuous decentralization of the game between being and what is outside, is at the basis of the task of developing the human personality that it is, indeed it becomes such through interaction and intersubjectivity*» (Palumbo C., 2018, p. 38).

Merleau-Ponty in the Phenomenology of perception, searches for the origin of the relationship between stimulus and perception and between word and body and affirms «*thought and expression are therefore constituted simultaneously, when our cultural heritage is mobilized in the service of this unknown law, just as our body immediately lends itself to a new gesture in the acquisition of habit*» (Marleau Ponty, 1965 p.152). Man as an empirical subject moves, produces and shapes his own language. These actions are made possible thanks to the perceptive act, which allows you to map the surrounding environment and organize your actions.

The perceptual phenomenon is therefore also a linguistic phenomenon, through the body we designate the tools to trace the path that proceeds from it and that leads to the revelation of meanings, which have the possibility of being expressed and translated as communicative acts in the different channels we have available.

2. The possible educational acceptions of performance arts in an integrated multisensory context

The body can lend itself to different definitions and interpretations and represent itself in different ways.

It is generically identified as a set of anatomical parts, millions of cells, organs and tissues that make up its energy and vitality.

Starting from this point of view, the body can be defined as the seat of the individuality of each human being, a space in which contact with oneself and with others develops, but also as an instrument capable of expressing oneself and relating to oneself. with the social context.

From another point of view, we use the definition of body to indicate a group of people who are part of a whole, that is, they form a single body. In this sense, the body is an example of an experience of sharing between people in the space of a system, in which the matter of which it is made up is subjected to a field that influences and transforms it through flows. of energy.

The value of the body is fundamental because it constitutes at the same time a vector towards social relations and towards one's self and one's emotions.

«*Existing in one's body, making contact with it, is synonymous with corporeality»,* (Molisso V., Di Palma D., 2017, p.78) in fact it is the body that allows us to learn and understand through the emotions it is capable of to communicate and decode, allowing us to get to the meaning of our own nature and the surrounding world, comparing it to our experiences and our contacts.

Since we are children, we use the body to discover ourselves and we do so even before we are able to use verbal language, creating a border between inside and outside.

It can be said that it is the body that provides a container to the psychic system for all ego functions, as it expresses all the non-verbal signals that fall within the universal body language that has the task and the ability to effectively reinforce verbal language. and make it more understandable and immediate.

Having clarified all this, all that remains is to focus on bodily awareness that joins the other macro-areas of the pedagogy of the body, of bodily and motor cognition, of the body-mind

question, of bodily identity (Damasio 1999; Gallagher 2005; Gallese 2005; 2006).

In this context it is understood that bodily experience, as a pragmatic manifestation of the living in which cognition is not merely performed, but precisely enacted, constitutes a very interesting field of study due to its concrete implications on the educational level. that the theme of corporeality and bodily awareness has risen to a very modern and useful place to understand the future union between pedagogy and neurocognitive sciences (*embodied perspective*).

At this point, it is worth introducing the subject of performing arts here. The value of the performing arts lies in their ability to be a pregnant vehicle of meanings to be handled, being able to follow the communicative channels of the body and its different sensorialities, using artistic codes (Manfreda, 2016). «*Resonance facilitates the social perception of sensations and the understanding of other people's emotions. The performing arts achieve a tuning of the bodies, the body of the performer and the body of the 'spectator-user', where the latter - anything but passive - becomes a sort of sounding board of the performer's bodily states. The performative movement / gesture is simulated internally by the user, who feels the gesture that created the performer, the creative-artistic signs of him resonate in his own motor system*» (Manfreda, 2016, p. 261).

The term performance comes from the verb to perform, or to perform an action until reaching a high standard, therefore it can be applied to various areas, especially sports and artistic, such as staging a show, a play, a ballet, a competition. The performer's gestures are nothing more than the basic principles of the classical art of dance, namely:

- harmonic relationship between the various parts of the body;
- plasticity of each part of the body in its position in space and with respect to the body itself;
- unity of the figure and compositional vision.

All parts of the body must create a connection as parts of a harmonious whole (such as in a painting), in the case of a dancer it must be conceived according to a precise compositional idea that puts in place an organization of gestures aimed at expression of an idea. If we talk about dance, the compositional idea is drawn on a central axis, symmetrical with respect to the various parts that are balanced with each other. Each part of this pattern plays its own role and the decisive one in total balance is always the head, but also the gaze due to its influence in characterizing the gestures, must be considered a fundamental structural component.

Therefore, the body must be organized as a whole, investing the "center", the head, with the role of reference for balance, in order to facilitate movements through a better perception of the earth, the force of gravity and air, so that the dancer can move between these elements with awareness and rationality, but also in an expressive and creative way.

«*The Plan of the arts expresses a new conception of the school in which the dimension of knowledge of manifestations and artistic expressiveness finds full citizenship*» (DPCM December 30, 2017, Annex A Plan of the arts). Introduced with the Legislative Decree 60/2017, the three-year plan of the arts stands out for its innovative scope.

The plan speaks of the various arts not only through the description of the different teaching / training techniques, but also by defining the institutional and formal value of the education of all the arts which are even defined as "fundamental requirements of the curriculum" (Legislative Decree 60 / 2017, art.1, paragraph 2).

Furthermore, constant funding, no longer fragmented, is established for artistic education activities, which gives the necessary stability to the educational project as a whole.

The three-year plan of the arts provides for six measures which are addressed to educational institutions (starting from 2018, two have been financed for each year), three actions by the Ministry of Education and that of Cultural Heritage and Activities and of tourism and a monitoring action entrusted to Indire, with the aim of annually describing the implementation of the activities and providing a final picture of the overall progress of the Plan.

The importance of the arts is thus sanctioned by recognizing their ability to aggregate linguistic and cognitive processes, critical thinking and metacognition, emotional and affective states.

The school becomes a natural laboratory for choral growth through the human faculties expressed by the arts, in which knowledge and action, reflection on thought and the centrality of expressive individuality are mutually cultivated.

It has been found that studying and practicing the various arts leads students to a greater ability of critical and active analysis of reality and helps them to create non-competitive cooperation with others.

The practical learning of the arts allows to approach in a participatory way the values inserted in the school by the great transdisciplinary themes, that is, to practice inclusiveness, to prevent bullying and early school leaving, the synergy that is implemented through the use digital skills to extend communication and create new relationships.

Studying the arts through practice creates an individual sense of belonging, but also increases the social dimension, through the exchange of relationships and the reciprocity of gestures; above all, awareness of the public consequences of any action performed by an individual is built.

Of course, the contribution of each school primarily benefits the context in which it is located, promoting culture and social aggregation through it. This is why it is important to create both local and national experiences, including bodily experiences, useful for socialization and that enhance the cultural identities of the area, its material heritage and highlight its intent to enrich the arts plan of the educational platform.

The territories for their part must be educated and prepared to offer what is most suitable for the expressive languages that the arts plan makes available.

It is important that these are not generic experiences, but coherent with cultural and artistic heritage, and capable of discovering and offering new declinations of the same territorial cultures. The new task of the school, in all this, becomes to strengthen the culture of the territory not only to organize collective representations or artistic events in general, but to involve all together, from the first phase of the project, the institutions, especially the museums, the productive realities. and the tertiary sector, bringing them together towards educational and cultural objectives focused on the territory.

Among all the performing arts, in the last decade, theater and dance have been officially recognized as the most important educational devices capable of establishing relationships between individuals in order to create a self-sustainable community. This has strengthened the attention of educational institutions, which have become more sensitive to theater and dance, recognizing them as a fulcrum in the development of the individual and in the consolidation of social relations.

If art is an experience (Dewey, 2020) and «*in the Plan of the arts a new conception of the school is expressed in which the dimension of knowledge of artistic manifestations and expressiveness finds full citizenship*» (Legislative Decree 60/2017), it is imperative to emphasize the process and how the mind works with artistic materials to produce creative results (Webster, 1990). According to an approach that refers to embodied cognition (Bersalou L., 1999) and to the role of the body in learning processes, these tools will be useful for the construction of an artistic identity, a profile necessary to define the traits of a complete personality on the way out from compulsory school.

Conclusions

It is natural, therefore, to ask, which practice allows you to experience an authentic possibility of bodily expression by showing the link between knowledge and experience.

The focus must therefore be placed on the element of intentionality or intentional action. This manifests itself since childhood when, observing a child, we realize that simply grasping an object is motivated by the intention of possessing it in order to get to know it better. Therefore, intentionality expresses intelligent behavior and the will to interact with the environment and with the things that meet in it (Shaffer, 2005).

The movements made by the child are functional to the intentionality that guides him in that

particular situation: move a chair near the table, get on it and, finally, grab the object that had attracted his attention (Ceciliani, 2016). The idea of an abstract domination of the mind over the body intended solely as an executive tool is overcome, but rather, according to the more modern theory of Embodied Cognition (Clark, 2008; Varela, Thompson & Rosch, 1991), the body is endowed with ability to process cognitive functions which are part of the sensory-motor system and are activated by the connection of perceptions and interactions with lived experiences (Barsalou, 1999).

Body action allows you to interact with the environment and therefore supports the idea of a mind integrated not only with the body, but also with the environment itself through the sensory-motor functions (Wilson, 2002). All this allows you to experience spaces, objects, others and to participate in changing situations and relationships, through which cognition develops, facilitating learning.

The practice represents the possibility of experiencing the body as, synthetically, a living body and a mediator of existence, inserted in a space-time in which to experience possibilities, through the communicative processes of the expressive relationship.

Indeed, reducing body movements to only the biomechanical movement of anatomical segments does not recognize the right relationship of interaction between the body and the world. «*Therefore, there seems to be, on the part of the subject, the search for a continuous balance between bodily experience understood as a private experience on the one hand, in which bodily experience is inscribed, understood as a subjective experience and as a reference to the direct experience of one's own body, a socially constructed bodily experience, which emphasizes the relationship with the environment through the space that the latter reserves for the individual in the development of his daily life and through the image that those around him send back to him*» (De Mennato, 2006 in Lo Piccolo A., 2019, p.108).

The findings allow us to affirm how much such experiences assume a central importance in the life process involving the physical, psychic, emotional and socio-relational dimensions of the personality. The living body represents the place where it is possible to educate to life: for this it is necessary to refer to a perspective capable of declining the movement as embodied relationships between subjects in communication with each other and the world.

The formative role of certain bodily practices and experiences - for example dance - seems to be a fertile subject of investigation capable of combining different research interests and on which pedagogy and cognitive sciences can fruitfully converge and collaborate. This field is largely unexplored and some classical themes of pedagogy are today illuminated by new disciplines that produce new results and theory worthy of being taken into consideration both for their applicative scope in the field and for their ability to dialogue with the theoretical dimension. of education sciences.

Hence, nowadays one cannot but think of a renewal of teaching that develops adequate expressive methods, which are realized through the gesture performed by the body and create communication, relationship and creativity through the dance movement.

Consequently, it is appropriate to introduce a pedagogy of corporeality, which can transfer those basic principles of education to movement in its various forms, which lead to a culture of the body conceived as bodily awareness, into the various training areas. «*We are body. […]. Education passes exclusively through knowledge that knows how to incorporate itself, act to know, measure itself against the limit. And since the body is the measure of the limit, its awareness is also the essential condition of any possible transformation*» (Gamelli, 2016 p.53).

Epistemologically it is a question of analyzing, both in the educational and clinical fields, the perception of the body, providing tools that allow you to have a thorough knowledge of your body.

The multidimensional stimuli provided for example by dance, music and performing arts in general, can be more inclusive of more cognitive styles that can define greater relationships and interactions capable of implementing the teaching-learning process,

Especially in childhood, the experience through the various forms of the performing arts

becomes an experience of oneself, of others and of relationships, representing a very relevant educational opportunity.

In this perspective, education in the performing arts can become a transversal dimension, which allows you to involve any form of relationship between the disciplines and the personality of each individual who joins them. The body is not reduced to simple movement, but is inserted into a complex vision between thought and action, culture and body, formation of thought and formation of the body.

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