

EMBODIMENT AND DISTANCE LEARNING IN THE INCLUSIVE PERSPECTIVE

EMBODIMENT E DAD NELLA PROSPETTIVA INCLUSIVA

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Abstract

The article aims to explore the possible perspectives of study and research in the field of Embodied Cognition, in relation to new learning environments characterized by the massive presence of digital devices and distance learning in particular. The suggested hypothesis, supported by recent discoveries in the neuroscientific and psychodynamic field, is that the role of the body and related dimensions maintains its centrality even in the educational and didactic relationship “at a distance” and, for this reason, should be the subject of reflection even in the pedagogical and didactic field.

L'articolo intende esplorare le possibili prospettive di studio e di ricerca nel campo *dell'Embodied Cognition*, in relazione ai nuovi ambienti di apprendimento caratterizzati dalla presenza massiccia dei dispositivi digitali e dalla DAD in particolare. L'ipotesi avanzata, supportata dalle recenti scoperte in ambito neuroscientifico e psicodinamico, è che il ruolo del corpo e delle dimensioni correlate mantenga la sua centralità anche nella relazione educativa e didattica “a distanza” e, per questo motivo, debba essere oggetto di riflessione anche in ambito pedagogico e didattico.

Keywords

Embodiment, Digital Learning, Relationships, Intercorporeity, Inclusion

Embodiment, didattica digitale, relazioni, intercorporeità, inclusione

¹ L'articolo è frutto del confronto tra gli autori; Paola Damiani ha scritto: Introduction, paragraphs 1-2-3; Filippo Gomez Paloma ha scritto le conclusioni

Introduction

The current scenario, strongly influenced by the “Sars Covid-19” pandemic, has amplified elements of change and critical junctions - latent or explicit - with which school was trying to deal, including the theme of digital, digital skills and possible impacts in positive and/or negative terms for learning processes, development and participation of all students. Distance Learning (defined by the Italian acronym DAD) and Integrated Digital Learning (defined by the Italian acronym DDI) are devices that initially served the function of emergency response to the deconstruction of the traditional educational setting, brought about by periods of lockdown, but that over time (and with the continuation of the pandemic) are being reconfigured as opportunities and innovations, which may be functional to the realization of some key principles of the school: autonomy, flexibility, differentiation, personalization, through a “reasoned” and expert use of digital.

In order to effectively realize such educational potential, it is first of all necessary to guard against the possible risks and drifts, of an epistemological type, as well as those of a social and pedagogical type, of a reductionist and efficientist perspective of technologies.

Among the radical critical positions, Sadin (2019) labels the current technological context “anti-human” and highlights, among other things, the progressive reduction of the exercise of fundamental human capacities and values from an educational and evolutionary point of view, such as judgment, intuition and imagination. In particular, according to the author, “behind our enthusiasm for automated judgments lies a “rejection of our vulnerability,” a profound desire to get rid of the uncertainty and risk inherent in the relationship between humans and the real, abdicating all responsibility in favor of “augmented” anthropomorphic entities” (p. 157).

This is a perspective that sheds light on the presence of significant barriers to a culture of inclusion and difference; the assumption of a paradigm of efficiency and ableism leaves no room for any form of plurality and divergence and nurtures a culture of discarding who and what does not “keep up.” The contrast to the “anti-humanist” drift, according to the author, is achievable, on the contrary, through concrete gestures, constant and cumulative, at all levels of individual and collective life, aimed at the construction (and maintenance) of communities able to welcome and encourage “the singing of divergences” (p.182).

If, as Gallese (2020) remarks, we have passed the risk of a physical “overcoming” of man by android machines, since “in the research on Artificial Intelligence of an algorithmic nature, machines give up mimicking the human being to develop skills that will do better than the human”, from the pedagogical point of view, it is necessary and urgent to shift the focus from “doing better than the human” to if and how “to help the human to do better” in the perspective of the enhancement of diversity, limits and talents of each, in view of the common good. In this sense, it is first necessary to take a critical perspective that helps us mitigate the risks of a submission and/or a misrecognition of the human dimensions of the body, emotions, perceptions, judgment, intuition, imperfection, and differences. According to Suler (2004), within the online world, communications and relationships between people can shape distorting dynamics (uninhibited, aggressive, manipulative...), as it occurs in recent cases of cyberbullying, Trolls and Haters, due to some peculiar characteristics of cyber space (dissociative antinomy; invisibility; asynchrony; dissociative imagination; minimization of authority). The development and enhancement of “human” skills and dimensions allow to mitigate and re-modulate the negative structural elements of the new relational settings and the possible drifts of an “anti-human” technological context and represent protective and proactive factors for health, learning and participation of all people, even those less performing, (inclusion), within a technological context that enhances the human.

This article offers a first reflection on the human dimensions to be monitored and implemented in the contexts of digital and distance learning, and more generally in training contexts mediated by technologies, with particular reference to relational dimensions, as a foundational element of teaching (Altet, 1994; Pianta et al, 2003; Sibilio, 2020) and inclusion (Medeghini, Fornasa, 2003; Gaspari, 2021), in light of the Embodiment paradigm (Clark, 2008; Varela,

Thompson & Rosch, 1991) and of the “Ecs Based” inclusive perspective (Gomez Paloma, Damiani 2015; Damiani, 2017).

The Embodiment approach promotes the knowledge and appreciation of the body, emotions, imagination, creativity, and differences, helping to mitigate the risks of drifts at the level of interpersonal dynamics in digital contexts. Moreover, the enhancement of embodied personal factors is crucial for the development of protective and proactive personal and interpersonal skills (soft skills or transversal competencies) that are functional for students’ learning and well-being (Fiorella, Mayer, 2014; Abrahamson, Bakker, 2016; Gomez Paloma, Damiani, *in editing*).

1. Embodiment and Distance Learning: a possible scenario

The relationship between Embodiment and technology is a recent and evolving area of inquiry. As Wilson observed in 2002, Embodied Cognition is emerging as a promising approach in educational technology. Embodied Cognition supports the interpretation of cognitive functions as a bridge that connects the abstract (off-line) and sensorimotor aspects of concrete action (on-line), and can also manifest in centralized mental activities that trigger motor programs without resulting in immediate action (Wilson, 2002).

Tightening on our focus, Embodiment can be considered as “extended relational process and context” (Gomez Paloma, Damiani, 2015) consisting of “mind - body - environment” and the relationships between them. Knowledge of the mind (Extended Mind) can only occur in the context of its relationships with the body interacting in the world (Wilson, 2000). More specifically, the body represents the “primary mediator” for development and learning in meaningful relational contexts (child-mother; child-family; child-school). “Body and action emerge, in the embodied view, not only in the concepts of body consciousness and body identity, but, also, in the constructs of learning, intelligence, memory, and emotion (Fischer, Daniel, Immordino-Yang, Stern, Battro & Koizumi, 2007; Stern, 2005)” (Ceciliani, 2018).

Within this perspective, and with reference to the current scenario, it seems essential to reflect on which role Embodiment plays in the new digital educational and relational environments, and in Distance Learning in particular. It is therefore a priority to understand the elements and dynamics that make possible and qualify the educational and didactic relationships “at a distance”, reaffirming the centrality of the foundational embodied dimensions, both in epistemological and functional/operational terms.

From the conceptual point of view, it is necessary to promote the development of a culture of “*Digital Embodiment*”, in order to redefine the distorting and simplistic idea of “absent bodies” in distance learning and/or “intermittent bodies” in integrated digital teaching, recovering and enhancing the virtuous evolutionary circularity at the neurobiological and neurophysiological level (body-emotion-motivation-action) highlighted by neuroscience studies on brain functioning (Rizzolatti, Fogassi & Gallese, 2001; Immordino Yang, 2020). This circularity, consistently with the idea of overcoming the fragmentation of the bodies and minds of learners (Damasio, 1994) and their independence from the sociocultural and material environment (Vygotsky, 1978; Bateson, Maturana and Varela, 1973; Engel, 1977), can be declined in education and teaching in terms of “unitarities - complex” characterizing the existential relational contexts. Complex unitarities constitute new extended, dynamic and integrated pedagogical categories that characterize educational, school and training contexts (Gomez Paloma, Damiani, 2015). These include the circular and interconnected categories body-mind; emotions-cognition; health-disease; individual-collective; person-community; local-global; right-duty; happiness-responsibility. In the Embodied Cognition perspective, the dimensions that describe and constitute the body-mind category represent the background and the lever for the development of all the others. It is not possible to train/enhance the ability to “authentically” (embodied) respect the rights of others, for example in the context of a civic education course, if the people in relation (teacher-learner; student-friends) are not in contact with the deep and implicit (embodied) mind-body dimensions of themselves and others (Pianta, 2005; Rizzolatti, Sinigaglia, 2006; Blandino, 2012). In this regard, the rethinking of teaching and the improvement of the quality of the educational-di-

dactic relationship, as a response to the challenges of the present day, must be confronted with the possibility / ability to “cross the complex unitarities”, as human dimensions foundational to the processes of development, learning and participation, even - and especially - in digitized contexts.

Having reaffirmed, at least in theoretical terms, the presence and centrality of corporeality in the extended relational dimension of *Embodiment* as a relational context and as a background for the realization of “complex unitarities”, we will try hereinafter to identify essential characterizing aspects, compatible with the new relational environments, on which we should invest (also) in the field of distance learning and/or in technology-mediated teaching.

2. The relational body dimension

In the boundary space between neuroscience and psychoanalysis, the “motor-Self” is placed at the basis of relationality (Ammaniti, Ferrari, 2020). Motor functions play a fundamental role from the perceptual and cognitive point of view also for the «high» cognitive functions (language, abstract thinking, metacognition...), in the relationship with the other and with the world. As Ammaniti and Ferrari point out, in Western societies, the “*Face to Face*” model, based on perceptual-visual processes, is traditionally adopted to observe and explain relational dynamics and their development between children and caregivers, or in other significant relationships, according to the *Infant Observation* model. However, in other cultures, other models based on other sensory and bodily dimensions are employed, especially tactile and/or acoustic ones (as, for example, in Eastern and African cultures). An extremely interesting element highlighted by the authors concerns the discovery that the aspects characterizing these models are shared in all cultures: early interpersonal relationships are built, and therefore can be observed, understood and developed, through body-motor dynamics based on the synchrony of looks, gestures and actions and on rhythm.

This knowledge has highlighted the need to rethink the traditional therapeutic setting, which is based on verbal and symbolic elements disengaged from the extended and deep bodily dimensions, investigating the role of the motor system, besides movement understood in the classical sense. The relationship with the patient is also based on “alternative” bodily and motor aspects and the therapeutic setting, as the authors warn, must not be “frozen behind the couch and within the verbal channel” (op. cit).

Here, we can see a powerful stimulus for understanding and strengthening the educational setting and the student-teacher relationship; this type of setting should not be “frozen” behind the desk nor behind the screen and should not be reduced to only verbal communication as it is traditionally understood (lesson) nor to the consideration of the body and movement as “traditionally understood”. Jannerod (2006) had already highlighted how the relationship through the body is not only realized as a manifestation of movement but as a potentiality of movement, with a hidden portion of the action that consists in the representation of movement; motor representations define an internal state of the subject in which perception and action do not have precise boundaries.

The activation of deep bodily aspects, based on synchronies and rhythms (that we could identify as “relational meta-dimensions”) fosters the development of processes of co-development and learning through the relationship, which becomes, however, a significant relationship from the evolutionary and educational point of view, even “at a distance”. The embodied relational experience - body, mind, environment - is closely related to the ‘observation and experience of emotions, through the resonance and motor representation of emotions (Gallese, 2015; Rizzolatti, 2019; Immordino Yang, 2020) and this is also verified in interactions, whether online or remotely, through the screen.

Thus, the body is not “absent,” but rather interacting, through extended and deep bodily, mental, emotional, and motor dimensions that transcend screens. Through them, educational and didactic relationships are shaped and developed. It is likely that this “mediated relational-form” will take on significant configurations from the experiential point of view, although

peculiar, like those that develop in a traditional didactic-relational context, in presence; professionals must learn to know and value this new relational potential, guarding the possible drifts already present in informal and non-formal digitized contexts.

An educational and didactic approach based on *embodied human dimensions* is therefore compatible with a “distance” and digitized educational and didactic setting. Even if bodies are not physically present, the extended foundational dimensions of the Bodily Self, of *Embodiment*, are active or can be stimulated and enhanced (emotions, glances, rhythms, synchronies of actions, intentions...).

A critical aspect in a relational context digitized, such as that of distance learning, could be determined by the lack of direct eye contact (with the camera off or “behind” the screen) and, consequently, the impossibility of exchange of glances and resonance of emotions through the faces. However, we have seen how the relational body dimensions characterizing the *Embodiment* approach are all interrelated and involved in the emotional-relational experience. Other *embodied* aspects, probably, play a vicarious function with respect to the direct observation of emotion (*Face to Face*), as evidenced also by the literature in the case of auditory interactions and “meta-dimensions” of perception and sharing of rhythm and synchrony.

3. Intercorporeality: towards a pedagogical declination of characterizing elements

Research on the development and forms that interpersonal relationships assume through the body is of particular interest to our investigation. We view the construct of intercorporeality as providing elements of knowledge and guidance for educational research on Embodiment in the digital context. It is a transdisciplinary construct that is grounded in consistent findings and knowledge of particular impact for educational research. As Gallese (2013) points out, “intercorporeality constitutes the primary source of knowledge we have about others. The motor resonance mechanism of mirror neurons, originally discovered in the monkey brain and later also discovered in the human brain, is presumably the neural correlate of this human faculty, describable in functional terms as ‘embodied simulation’ (Gallese 2003, 2005, 2011; Gallese and Sinigaglia 2011)” (p. 5).

More in detail, some studies on how the body “enters” into the relationship with the other through intercorporeality (Ammaniti, Ferrari, 2020) shed light on the key elements of the category “body-mind” for the enhancement of an educational and didactic approach based on Embodiment in the digital context, also in terms of prevention of learning difficulties and relational problems. The awareness that the first circuits to undergo synaptic formation are the sensorimotor ones, and that they are the most permeable to environmental stimuli, highlights the fact that “short circuits” at the motor level will also cause effects at the level of higher cognitive functions (language - thought) that are closely related to the first.

Let’s try to identify some characteristic components of intercorporeality in their concrete declination, in a context of relationship with a significant other (caregiver, educator, teacher, classmate), and as such can be observed, monitored and enhanced:

- **eye contact**; glance; observation (synchrony and rhythm of auditory contact)
- gestures; action; manipulation (synchrony and rhythm of co-management)
- auditory **con-contact**; attention; sound production (synchrony and rhythm of auditory contact) imagination and representation of body movements
- care of the synchrony and rhythm of different relational forms of the body (visual, auditory, motor)
- care of the synchrony and rhythm of the body: proprioception and interception (visceral sensations; breath; beat; heat; multisensory communicative rhythms; synchronization and explicitness; pauses)
- care of the synchrony and rhythm of actions and activities (relationships between the bodies and the environment: educational materials, cultural activities ...)

These elements are present and can be valorized (through the development of educational and didactic curricular activities) even in relationships mediated by the screen and, more gener-

ally, in relationships with technological devices. Even virtual reality is a relational reality, with its essential and existential grammar. The absence of proximity of physical bodies does not mean the absence of corporeality and bodily relationality; the relationship between persons/objects does not “freeze”, but takes on different and characterizing forms; in online relationships one does not stop putting into play evolutionary (or anti-evolutionary and regressive) resources and the profound dynamics of development and learning. We can also assume the presence of “vicarious forms” of corporeality based on the principle of *functional vicariousness* identified by Berthoz (2013).

Therefore, it is necessary for educators and teachers to be aware of these dynamics and resources in order to stimulate the right levers and enhance them to improve learning and participation processes, even at a distance.

Conclusions

The “embodied turn” in learning and reasoning (Chandler & Tricot, 2015) represents an original critique toward traditional models and stimulates experimentation with new instructional strategies (Lindgren & Johnson, 2013) (Ceciliani, 2018).

The assumption of the model of the relational body dimension and Intercorporeality outlines a field of study and research that focuses on the need to develop awareness of the role of the extended body and the relational body dimension in the current digital and integrated learning environment, starting from the need to reflect on the characterizing elements (primary and/or vicarious) and on the most appropriate ways to enhance them by teachers and educators.

As we have pointed out, the enhancement of these elements allows the development of evolutionary relational dynamics that play a protective and proactive role with regard to the new digital environments and possible “anti-human” drifts; moreover, it favors the reorganization of the spaces and times of teaching according to creative, “slowed down” and differentiated modes that put people at the center with their globality and uniqueness (mind-body-environment), contributing to the development of inclusive processes and individual and collective relational well-being.

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