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The Body as the Matrix of Experience: Pedagogical Trajectories, Teaching Practices, and Inclusive Educational Horizons

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Riassunto:
Questo contributo assume il corpo non come supporto dell'apprendere, ma come condizione costitutiva dei processi di significazione, relazione e conoscenza; ogni apprendimento autentico è situato e dunque incarnato. In prospettiva embodied ed enattiva, percezione e azione non "accompagnano" il pensiero, ma lo rendono possibile, organizzando l'esperienza in termini di presenza, intenzionalità e relazionalità (Merleau-Ponty, 1962; Varela et al., 1991). Il corpo viene discusso lungo tre assi integrati: (1) come strumento pedagogico, perché fonda la costruzione di senso; (2) come risorsa didattica, perché media la progettazione di compiti autentici e la continuità indoor–outdoor, anche con tecnologie orientate ai processi (Maggi, 2020; Maggi & Balestra, 2025; Rivoltella, 2023); (3) come risorsa educativa, perché connette apprendimento, benessere e inclusione, rendendo la competenza un fenomeno situato e, in parte, condiviso. In coerenza con UDL, si propongono implicazioni progettuali e valutative centrate su accessibilità, documentazione e qualità delle interazioni (Rose & Meyer, 2002; CAST, 2018).

Parole chiave: corporeità; enazione; mediazione didattica; inclusione; tecnologie educative.
Abstract: This article approaches the body not as a mere support for learning, but as a constitutive condition of meaning-making, relationship, and knowing; all authentic learning is situated and therefore embodied. From an embodied and enactive standpoint, perception and action do not simply 'accompany' thought: they make it possible, organising experience through presence, intentionality, and relationality (Merleau-Ponty, 1962; Varela et al., 1991). The body is examined along three integrated axes: (1) as a pedagogical tool, grounding the construction of meaning; (2) as a didactic resource, mediating the design of authentic tasks and the continuity between indoor and outdoor contexts, including process-oriented technologies (Maggi, 2020; Maggi & Balestra, 2025; Rivoltella, 2023); and (3) as an educational resource, linking learning, wellbeing, and inclusion, such that competence emerges as situated and partly shared. In line with UDL, the paper advances design and assessment implications centred on accessibility, documentation, and the quality of interactions (Rose & Meyer, 2002; CAST, 2018).

Keywords: corporeality; enaction; didactic mediation; inclusion; educational technologies.

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1. Introduction

In contemporary schooling, the body risks a double reduction: on the one hand, it is confined to a 'moment' (the physical education lesson, break time, the educational outing); on the other, it is tolerated as a managerial variable (containing, regulating, keeping pupils seated), rather than recognised as a generative matrix of formative experience. And yet the body is the primary site of presence: what we learn, we always learn through postures, rhythms, gazes, distances, emotions, and micro-situated decisions. It is through the body that intentionality takes shape, attention attaches to a task, relationships become concrete, and meaning becomes practicable. Phenomenological perspectives and embodied/enactive theories have made the notion of purely 'mental' learning increasingly untenable: cognition emerges from the interaction between organism and environment, and education cannot disregard the ways in which experience is organised through perception and action (Merleau-Ponty, 1962; Maturana & Varela, 1980; Varela et al., 1991; Shapiro, 2011). The premise is both simple and demanding. If the body is a condition of experience, schooling cannot limit itself to 'transmitting' content; it must create the conditions under which content becomes meaningful experience, and thus stable knowledge. At the same time, schooling is undergoing a cultural transformation shaped by digitalisation: technologies are no longer merely external tools, but environments, relational dispositifs, and mediators of practice. This shift raises a decisive question: what happens to the body when learning is technologically mediated? And in what sense can we speak of a 'technologically extended' body? Without adopting polarised positions (technophilia/technophobia), it is necessary to acknowledge that the body remains the pivot of experience, while it may be amplified, supported, or reconfigured by digital tools that extend our capacity to represent, document, communicate, and share experience (Rose & Meyer, 2002; CAST, 2018; Rivoltella, 2023). Within this framework, the paper develops three integrated axes: the body as a pedagogical tool, the body as a didactic resource, and the body as an educational resource. If we understand the body as a 'matrix of experience', we treat it as the site in which the world becomes meaningful—not a simple support for learning, but the condition through which perception, action, and relationship take form (Merleau-Ponty, 1962). From an enactive perspective, knowing is not the reproduction of content, but the transformation of possibilities for action and meaning within a situation (Varela et al., 1991). The body thus becomes a criterion of didactic quality: presence, intentionality, and relationality indicate whether a task is

inhabitable and generative. An essential design orientation follows: to create conditions in which experience does not remain mute, but is reworked and shared, becoming growth (Dewey, 1967; Maggi, 2020).

2. The Body as a Pedagogical Tool: from Embodied Experience to the Construction of Meaning

To assume the body as a pedagogical tool is to recognise that it is not an additional channel for learning, but the concrete condition through which experience takes shape. Perceiving, moving, orienting oneself, modulating gesture, inhabiting space, regulating rhythm, entering into relationship: these are not actions that precede knowledge, but knowledge already in action, because they enable meaning to emerge within the texture of lived experience. From this perspective, the body is not an object among objects; it is an opening onto the world—an embodied horizon of presence and intentionality, a threshold through which the subject encounters self and other (Merleau-Ponty, 1962).

Enactive perspectives clarify that knowing amounts to rendering a world practicable within relation: the subject does not represent an already-given world, but co-constructs a domain of meaning through reciprocity with the environment; learning coincides with a transformation of action and attention within meaningful contexts (Maturana & Varela, 1980; Varela et al., 1991). This position does not reduce mind to body; rather, it shows their inseparability: mind is always "in situation", and the situation is always also bodily. A decisive implication follows: education cannot be reduced to the transmission of disembodied content, because content becomes knowledge only when it enters the perceptual, emotional, and relational life of the learner.

Educational pragmatism has made explicit a principle that remains decisive: educational experience builds habits, orients interests, and enables or inhibits possibilities; the quality of education is measured by its capacity to transform experience into growth (Dewey, 1961, 1967). It is precisely in corporeality that such transformations become observable—for example, in how a subject regulates effort, confronts error, sustains frustration, cooperates, exposes themselves or withdraws, and decides to persevere. In this sense, the body is a "living archive"

of the relationship with the task: what happens in the body signals how the subject is inhabiting learning.

The motivational dimension is structural. When a learner perceives a task as meaningful and practicable, a space opens for authentic participation: task choice, persistence, and the quality of attention and commitment also depend on conceptions of ability and on the motivational climates produced by the context (Nicholls, 1984, 1989). In this space, the body reveals its pedagogical function: it enables one to "feel" the challenge, interpret it, and modulate it; and it makes experience legible as it unfolds, because posture, rhythm, gaze, coordination, intensity, and time management testify to how the subject inhabits the learning situation.

Embodied theories insist on a point that didactics often neglect: language, too, is rooted in the body. Conceptual metaphors and abstract meanings lean on sensorimotor schemas of balance, containment, tension, direction, and contact; the body thus becomes a generative matrix of thought (Lakoff & Johnson, 1999; Shapiro, 2011). Educationally, this means that the abstract is not "beyond" the body, but a way of reorganising bodily and relational experience. A didactics that offers no perceptual footholds and no "inhabitable" situations risks producing fragile knowledge: definitions without purchase, difficult to integrate into life and therefore difficult to transfer.

Moreover, learning often benefits from multisensory integration—not because "more stimuli" are always better, but because coherence between perception and action, and meaningful redundancy, can make content more graspable and more transformable (Shams & Seitz, 2008). The body thus becomes a criterion for design: not every activity must be motor in a strict sense, but every activity should be *embodiable*—that is, capable of offering perceptual, gestural, and relational footholds that enable learners to understand and appropriate what they encounter. In this direction, education through movement cannot be confined to the perimeter of a single subject area: it becomes a transversal pedagogical device, because it shows that every form of knowledge is built through a dynamic of exploration, reorganisation, and appropriation of experience (Maggi, 2020).

This approach does not concern pupils alone; it also concerns the teacher. Didactic presence is always bodily presence: tone, posture, gaze, distance, rhythm, and the organisation of space and time shape a climate of safety or threat, trust or withdrawal. To speak of the body as a pedagogical tool is therefore to speak of a pedagogy of relationship: the care of the educational

scene, of implicit signals, and of the micro-interactions that determine access or exclusion—and which often affect participation more than a written instruction ever can. In short, the body does not merely "accompany" pedagogy; it makes it possible.

3. The Body as a Didactic Resource: Mediation, Design, and Continuity of Contexts

If the body is a pedagogical tool, it inevitably becomes a didactic resource: a concrete device mediating between what is taught and what is learned. The body mediates knowledge through movement and the senses; it can mediate teaching and learning and is therefore a fully-fledged didactic mediator (Maggi, 2020). This assumption requires didactics to make a shift: it is not enough to add activities—design must be rethought so that the body enters the structure of teaching as an intentional dimension rather than an ornamental one.

Research on embodied learning suggests that effectiveness does not depend on the mere presence of movement, but on how it is integrated with task and meaning: bodily experience functions as a bridge when it is congruent with what is to be understood, when it supports exploration and conceptualisation, and when it renders the abstract tractable (Lindgren & Johnson-Glenberg, 2013; Skulmowski & Rey, 2018). This entails precise decisions—for example, which bodily dimensions to activate (space, rhythm, gesture, posture, manipulation, simulation), for which objectives, for which learners, under what conditions, and with what forms of support. The body thus becomes a 'didactic material', not because it replaces books or language, but because it enables content to be traversed through different modes—often more accessible and more generative.

The body is also language. Games and sport, read through a praxeological lens, are contexts of high communicative density: the body produces signs, anticipations, reciprocal readings, creativity, and social regulation (Parlebas, 2001). Bringing this awareness into didactics means recognising that many competences are tacit before they become declarative: knowing how to wait, cooperate, negotiate roles, manage conflict, support others, and make space. Learning, then, is not only individual acquisition but relational construction, and teaching must provide

dispositifs that make such competences observable and open to reflection.

It follows that the environment is not a backdrop: it is an active part of the process. To think of the environment as a learning ecosystem is to consider how spaces, materials, times, rules, and relationships co-produce possibilities and constraints. From this perspective, indoor–outdoor continuity is not an alternation of places, but a principle of coherence between objectives, tasks, and the group's affordances. The natural context, in particular, can become a didactic device because it elicits broader perception, variability, manageable unpredictability, cooperation, and responsibility towards shared space, reducing the distance between knowledge and life (Maggi & Balestra, 2025; Louv, 2005, 2016). 'Outdoor' is not a label but a grammar: it requires careful attention to instructions, success criteria, safety, documentation, and—above all—the transformation of experience into shared knowledge.

A rigorous bodily didactics is grounded in authentic, calibrated, and meaningful tasks. Authentic does not necessarily mean 'outside school'; it means that the task demands real decisions—choosing strategies, testing hypotheses, negotiating meanings, and producing a shared outcome. Within this framework, reflective routines are decisive: initial briefings (which orient intentionality and criteria), debriefings (which rework experience and error), diaries, maps, and oral and multimodal restitutions. It is through these passages that experience, however dense, avoids dispersal and becomes transferable knowledge (Dewey, 1967; Maggi, 2020).

Universal Design for Learning offers a design grammar consistent with this approach: multiple means of representation, action/expression, and engagement are not an add-on but a condition of accessibility. Planning alternatives from the outset allows the body to become, for many, a first instrument of participation and understanding (Rose & Meyer, 2002; CAST, 2011, 2018; Baldacci, 2017). UDL also helps to avoid a frequent misunderstanding: confusing activity with accessibility. It is not enough to 'get pupils moving' if the task is not comprehensible, if criteria are not clear, if alternatives are not planned; and it is not enough to 'digitise' if experience is flattened. UDL instead prompts the intentional design of a meaningful plurality, so that each learner can enter and remain within the task through different yet equivalent pathways.

o clarify the transition, it may be helpful to outline a brief dispositif: the class works on the question, 'What makes a place habitable?'. In the classroom, essential criteria and constraints are established (safety, accessibility, care), and observation then shifts to a setting close to the school, where the body enters understanding through walking, pauses, the negotiation of routes,

and shared decision-making (Maggi & Balestra, 2025; Louv, 2005, 2016). On returning, the traces collected (photographs, audio, maps, short videos) become a portfolio and a multimodal restitution, offering different routes to the same objective (Rose & Meyer, 2002; CAST, 2018). Here technology extends and mediates without replacing experience, supporting memory and reflection (Rivoltella, 2023).

At this point, it becomes almost inevitable to widen the lens: today the body does not act only in 'full' and material environments, but increasingly moves within technologically mediated experiences. This is not a matter of adding a theme, but of recognising a condition: schooling is traversed by devices and interfaces that redefine the form of experience, and the ways in which it is documented, communicated, and returned. From this perspective, to speak of a technologically extended body is to acknowledge that certain technologies can expand capacities for action and perception: digital tools for documentation (photographs, audio, video, portfolios), multimodal production, applications that render process traces visible, and, up to and including, assistive devices that make practicable what would otherwise remain inaccessible. Read through UDL, this extension is not an 'extra', but a possibility for equity: a way of offering different access points to the same objective and enabling each learner to express what they understand through different languages (Rose & Meyer, 2002; CAST, 2018).

At the same time, technology is never neutral: it not only extends, but also mediates, filters, organises, and at times accelerates experience. The technologically mediated body is a body that can receive feedback, be supported by accessibility features, and build memory of the pathway through shared traces; yet it is also a body at risk of being displaced towards rapid, fragmented, less inhabitable forms of engagement, if mediation reduces experience to content consumption or to sequences of low-density tasks (Rivoltella, 2023). This is why the question is not whether or not to use technology, but which forms of mediation allow the body to remain within experience in a full, intentional, and relational way.

When technology supports presence and reflection—by making processes visible, offering opportunities for reworking, and helping learners to name and share what has been lived—it works in favour of the continuity between experience and concept that lies at the heart of embodied didactics (Dewey, 1967; Maggi, 2020). When, by contrast, it replaces experience or flattens its rhythm, design loses its educational force and becomes training. Ultimately, the integration of corporeality, contexts, and mediations (physical, natural, digital) hinges on a

criterion of quality: a task is truly 'embodiable' when it offers perceptual and gestural footholds congruent with what is to be understood, when movement is pertinent to meaning, and when multiplicity of access does not disperse but affords equivalence; and a pathway is genuinely formative when it can hold experience, transform it into shared language, and render it transferable to other contexts without losing sense or autonomy (Skulmowski & Rey, 2018; Shams & Seitz, 2008; Lakoff & Johnson, 1999; Wiggins & McTighe, 2005).

4. The Body as an Educational Resource: Inclusion, Wellbeing, and Competence as a Shared Property

The body is an educational resource because it integrates the dimension of learning with that of living: bio-psycho-social wellbeing, relationship, identity, and belonging. To speak of the body is to speak of inclusion not as a remedial intervention, but as the structure of the process: spaces, times, instructions, and practices must be designed to reduce cultural, organisational, and environmental barriers, making access to meaningful experiences practicable for all (Rose & Meyer, 2002; CAST, 2018; Baldacci, 2017). Many barriers, in fact, are bodily before they are cognitive: they concern the possibility of moving safely, feeling authorised to participate, understanding instructions, orienting oneself in space, and managing performance anxiety. For this reason, inclusive design cannot ignore corporeality; it must set up situations in which each person can experience efficacy, belonging, and agency, including through non-verbal channels and progressive pathways towards autonomy (Maggi, 2020).

The educational significance of corporeality does not end at the individual level. Bodily experience—especially in complex and variable contexts (outdoor learning, natural environments)—fosters relational modes that turn competence into an emergent, distributed, co-constructed phenomenon. From an ecological and synecological perspective, competence does not coincide only with what the individual possesses, but with what the group generates and sustains through relationships, responsibility, care for places, and the coordination of actions: a shared and situated competence that belongs to the learning ecosystem (Maggi & Balestra, 2025). In this reading, learning is not measured solely in individual performance, but also in the quality of the relational field that the group builds: the capacity to work together, distribute roles, support the more vulnerable without nullifying them, and recognise resources and limits.

This approach resonates with an ecosophical horizon: to educate is to learn how to dwell in the world by acknowledging interdependences and limits, cultivating a responsibility that is not abstract but lived (Næss, 1989). In the body, interdependence becomes perceptible: it is experienced in cooperating, modulating one's gesture so as not to hinder others, caring for a shared space, and understanding that individual action produces effects on the system. Educating through the body therefore means educating towards reciprocity and citizenship (including ecological citizenship), because corporeality makes the I–You–World relation immediate rather than abstract. School can become a laboratory of civic and social competence not only because it 'talks' about citizenship, but because it allows it to be lived in practice: cooperative decision-making, management of shared rules, negotiation of conflicts, and care for the common good.

The body is also an educational resource because it connects learning and health. The promotion of wellbeing passes through meaningful motor experiences, not reduced to performance or training, but oriented towards action awareness, a positive relationship with effort, and an integrated sense of self (Maggi, 2017; Maggi, 2020). In a time marked by sedentary lifestyles and fragmented attention, the body can become an educational ally in rebuilding rhythms, fostering contact with one's own sensing, and recognising one's resources. In this frame, corporeality does not 'compensate' for a deficit; it restores density to experience—and with it, possibilities for learning.

Assessment, too, changes its status: from the measurement of products to the ongoing reading of processes and impacts. To assess from an embodied standpoint is to observe participation, the quality of interactions, distributed leadership, autonomy, self-regulation, and care for contexts; it is to use coherent tools such as rubrics, self-assessment, peer assessment, and portfolios. Above all, it is to recognise that competence is visible in the way a person inhabits a task, not only in the final outcome (Nicholls, 1984; Wiggins & McTighe, 2005). From this perspective, documentation and assessment are in dialogue: making processes visible is not a bureaucratic act but an educational one, because it returns agency to learners and enables the group to build shared memory.

Within this framework, assessment must be rethought as a reading of process rather than product alone: what matters is how the learner enters the task, regulates effort, manages error, cooperates, and self-regulates in situation (Nicholls, 1984, 1989). Evidence is often bodily and relational: the quality of participation, the assumption of roles, the capacity to make space for others, and

continuity of engagement. Documentation (portfolios, diaries, multimodal traces) becomes an educational gesture because it renders the pathway visible, builds memory, and enables transferability, preventing experience from dispersing (Dewey, 1967; Maggi, 2020; Wiggins & McTighe, 2005).

Finally, corporeality as an educational resource prompts a reflection on school culture. If schooling remains anchored to a transmissive model centred on verbalisation alone, it risks excluding not only some pupils, but an essential part of human experience. To recognise the body as an educational resource is to embrace an integral view of learning, capable of holding together knowledge and life, content and meaning, knowing and relationship (Maggi, 2020; Maggi, Balestra, & Zappa, 2025). It is within this integration that inclusion becomes concrete: not a promise, but a practice.

5. Conclusion

The body—understood as a pedagogical tool, a didactic resource, and an educational resource—is not simply one theme among others, but a key through which to recompose fractures that still persist in schooling: between theory and practice, between knowledge and life, between cognition and emotion, and between declared inclusion and real accessibility. The body grounds the construction of meaning because it makes knowing a situated act; it becomes a didactic resource when design integrates movement, multisensory engagement, authentic tasks, and the continuity of contexts; and it becomes an educational resource when it generates wellbeing, belonging, and competence as an emergent, shared phenomenon within a learning ecosystem (Maggi, 2020; Maggi & Balestra, 2025; Næss, 1989).

Within this frame, technology calls for a pedagogically mature stance. It is not an alternative to corporeality, but a form of mediation that can either extend or diminish one's power to act. The technologically extended body values tools that broaden accessibility, documentation, and expressive possibilities (Rose & Meyer, 2002; CAST, 2018); the technologically mediated body, by contrast, invites vigilance towards experiences that risk accelerating, flattening, or disembodying learning (Rivoltella, 2023). The discriminating criterion remains the quality of experience: technology is educational when it sustains presence, intentionality, relationship, and reflection, making learning more inhabitable and more equitable.

The challenge, then, is not to 'add the body' to school, but to recognise that schooling always

happens in bodies: in the bodies of pupils and teachers, in bodies that move and pause, cooperate and conflict, and learn because they find meaning. It is on this evidence that a pedagogy of experience can be grounded—one capable of holding together knowledge and life, inclusion and quality, corporeality and digital culture (Dewey, 1967; Merleau-Ponty, 1962; Maggi, 2020).

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