

Body, reflexivity and educational citizenship: embodied practices for the dialogic construction of meaning

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Abstract: The contribution is situated within a line of research that understands the body as a mediator of knowledge, identity and the educational relationship. The hypothesis that guides it is that bodily experiences do not in themselves generate ethical-civic learning, but can foster reflexivity, mutual recognition and citizenship where they are intentionally designed and supported by dialogic practices of re-elaboration. The body is not assumed here as an instrument or support for learning, but as an original condition through which the subject perceives, acts, interprets and communicates. Movement, gesture, posture and interaction with space, both physical and digital, acquire pedagogical value insofar as they convert experience into awareness, speech and responsibility. From this perspective, the dialogic dimension does not arise as an additional moment in relation to action, but operates as a device that gives form to bodily experience and makes its meanings shareable, even when the educational relationship is mediated by digital environments or by Artificial Intelligence. On this basis, the contribution proposes a model founded on the body-reflexivity-citizenship triad, articulated in three interdependent dimensions. The first, experiential, links the body to situated access to knowledge; the second, reflective-dialogic, entrusts its elaboration to sharing; the third, ethical-civic, concerns responsibility, listening, belonging and participation. What emerges is a contribution to that common grammar of Embodied Education in which the educational quality of bodily practices depends on intentional design, capable of enabling the student to recognise themselves as an embodied, relational and responsible subject. Embodied Education is therefore not positioned as an alternative to the digital, but as an experiential anchor that restores bodily depth to technologically augmented learning.

Keywords: Embodied Education; reflexivity; educational citizenship; dialogic practices; digital learning environments.



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1. Embodied Education, the construction of meaning and educational citizenship

Contemporary pedagogical reflection questions with increasing urgency the relationship between learning, experience and citizenship. Educational contexts can no longer be thought of only as places for the transmission of content, but as environments in which the subject constructs their own way of knowing, of being in relation and of participating. From this perspective, Embodied Education offers a fruitful framework. It moves beyond a conception of learning centred solely on the cognitive

and representational dimension and restores to the body its status as a concrete condition of educational experience (Gomez Paloma, Damiani, & Borrelli, 2019; Shapiro, 2011; Varela, Thompson, & Rosch, 1991). The issue becomes more pressing today, when digital environments and Artificial Intelligence systems increasingly mediate the educational relationship, since the risk of dematerialising experience grows and, with it, the question of what bodily depth technologically augmented learning may retain.

In recent years, however, research on Embodied Education has legitimised its value mainly in terms of cognitive and motor gains, showing how gesture, manipulation and action support understanding and memory (Castro-Alonso et al., 2024; Skulmowski & Rey, 2018). Its ethical, relational and civic scope remains less explored. This is where the contribution is situated, around a question. Under what conditions can bodily experience be configured as a pedagogical device capable of generating reflexivity, mutual recognition and educational citizenship? The aim is not to propose a new teaching technique, nor to reduce Embodied Education to a repertoire of motor activities. The educational value of embodied practices does not lie in movement itself, but in the possibility of transforming it into awareness, speech and responsibility (Maggi, 2018, 2020).

The underlying hypothesis is that bodily experiences do not automatically produce ethical-civic learning, but become so when intentional design accompanies them with dialogic and reflective practices. These practices help the subject to question what they have lived, to recognise the other's point of view and to situate their own action within a community of meanings (Dewey, 1938; Freire, 1970).

Starting from these considerations, the contribution proposes a theoretical model based on the body-reflexivity-citizenship triad, which assumes Embodied Education as a pedagogical device of mediation, in which bodily experience, if intentionally designed and re-elaborated through dialogue, can become a shared educational language and promote mutual recognition, responsibility and participation.

The thesis that supports it is that the body is not educational in itself, but when assumed within practices of mediation, reflexivity and citizenship. This means that it is not movement that forms, but its transformation into shared awareness and responsibility.

The analysis developed moves from the body as a mediator of knowledge and of the relationship, articulates the model in its three dimensions, the experiential, reflective-dialogic and ethical-civic, verifies its consistency in digital environments and in contexts mediated by Artificial Intelligence, and finally draws out its implications for an embodied grammar of educational citizenship.

2. The body as mediator of knowledge and the educational relationship

In order to understand the connection between Embodied Education and educational citizenship, it is necessary to clarify in what sense the body acts as a mediator of knowledge and of the relationship. Bodily mediation is not an accessory support for mental activity, nor a device for making lessons more engaging. It concerns the very structure of formative experience. The subject knows because they perceive, orient themselves, act, experience emotions, encounter resistances, modify postures and attribute meaning to what they live (Faggioli & Schenetti, 2023; Fuchs, 2021; Merleau-Ponty, 1945/2003; Sheets-Johnstone, 2011).

The body does not intervene after knowledge. It participates in its constitution. Every act of knowing is situated within a weave of perceptions, movements, gestures and relations, and even when learning concerns abstract contents, it is rooted in a bodily history made of attention, rhythm, posture, voice and gaze (Castro-Alonso et al., 2024; Skulmowski & Rey, 2018). All this does not coincide with a generic valorisation of movement, nor with a pedagogy of activation in which the body serves only to make the lesson dynamic. The body mediates learning because it enables the subject to inhabit experience and to give it form. In this sense, gesture is to be considered an intentional orientation, posture a way of being in the relationship, space a field of possibilities and movement a path of exploration (Maggi, 2020; Varela et al., 1991).

Two theoretical frameworks can clarify this reading. The first is the enactive perspective, which describes knowledge as meaning that emerges from the situated action of the subject within their environment. At the educational level, this requires learning to be designed not as a sequence of contents, but as a weave of experiences, mediations and relations (Gomez Paloma et al., 2019; Varela et al., 1991). The second is the 4E perspective, which articulates its complexity by considering cognition as embodied, embedded, enactive and extended, since it takes shape in the relationship between body, physical and social environment, action, objects, signs and practices (Clark, 2008; Clark & Chalmers, 1998; Hutchins, 1995; Malafouris, 2013; Newen, De Bruin, & Gallagher, 2018). Read in pedagogical terms, this perspective makes it possible to consider the classroom as a living system of mediations, in which bodies, languages, materials, rules and practices contribute to the construction of knowledge (Faella, Digennaro, & Iannaccone, 2025; Lindgren & Johnson-Glenberg, 2013). And since it is situated and shared, knowledge is also participation in a common world, in which the learning body finds itself exposed to the gaze of the other, involved in dynamics of recognition and called to take a position, a threshold that the model will take up again as a passage towards citizenship (Biesta, 2010; Honneth, 1995; Ricoeur, 1990/1992).

Hence the connection between body and educational relationship. The educational relationship is never purely verbal but is built through words and silences, gazes, rhythms, postures, distances and ways of being present. The teacher also educates through the way in which they occupy space, distribute attention and read the bodily signals of students, who in turn communicate through the body availability, resistance, interest, tiredness and the need for recognition. An embodied pedagogy therefore cultivates a sensitivity towards the implicit corporeality of every teaching relationship (Fuchs, 2021; Maggi, 2020; Sheets-Johnstone, 2011). The inclusive scope of the approach is rooted in this same attention. Designing embodied experiences broadens access to knowledge, because it recognises the plurality of perceptual, motor and emotional ways in which learning takes place, in dialogue with the principles of Universal Design for Learning (Balestra & Maggi, 2025; CAST, 2024; Rose & Meyer, 2002).

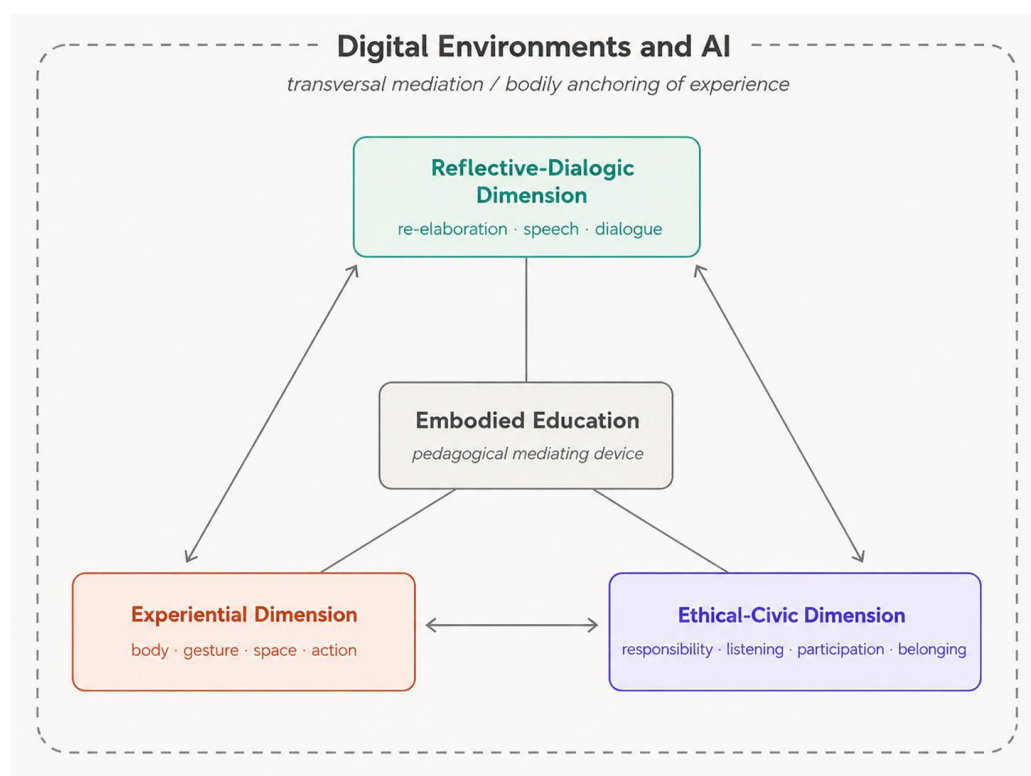
The body, however, is not sufficient in itself to guarantee the educational quality of experience. It needs pedagogical intentionality, because an activity centred on movement may remain external to the formation of the subject if it is not re-elaborated (Dewey, 1938; Maggi, 2020). In this sense, the body mediates knowledge because it gives situated access to the world. It mediates the relationship because it makes the relationship with the other visible and practicable. And it mediates, as the model will show, citizenship, because it introduces the subject into the concrete ex-

perience of common space. It is upon this passage, from acted experience to its transformation into awareness, speech and responsibility, that the model proposed in the following section is grafted.

3. The body-reflexivity-citizenship model. Three dimensions for an embodied grammar

The analyses conducted so far converge in an interpretative model that orders the relationship between Embodied Education and educational citizenship along three interdependent dimensions, experiential, reflective-dialogic and ethical-civic. Rather than phases arranged in succession, they should be understood as co-present layers of the same formative experience, which the model separates solely in order to make its pedagogical weave legible. The triad does not record what would occur spontaneously in bodily practices, but circumscribes the conditions under which these become opportunities for ethical, relational and participatory learning. No dimension, taken in isolation, guarantees their educational quality, which is generated rather in the way intentional design holds them in relation, ensuring that action, reflection and dialogue call upon one another (Dewey, 1938; Maggi, 2020; Maggi, Balestra, & Zappa, 2025).

Figure 1. The body–reflexivity–citizenship model as an embodied grammar.



As Figure 1 shows, the three dimensions of the model are equal and interdependent, and none precedes the others in a hierarchical or linear sense. Embodied Education, understood as an intentional pedagogical device, is the connecting element that activates them and holds them together. The transversal frame of digital envi-

ronments and Artificial Intelligence indicates that such contexts do not replace bodily experience, but mediate it and require an anchoring capable of preserving its experiential, reflective and relational depth.

3.1 Experiential dimension

The first dimension concerns the body as situated access to knowledge. Prior to any conceptual elaboration, the subject knows in perceiving, in moving, in orienting themselves within space, where they encounter resistances and modulate their own posture. It is within this original and pre-reflective horizon that the world offers itself as meaningful (Gallagher, 2005; Merleau-Ponty, 1945/2003; Sheets-Johnstone, 2011). On the pedagogical level, the experiential dimension recognises lived bodily experience as the raw material of learning. Gesture, manipulation, rhythm, exploration and interaction with the environment do not illustrate already given contents, but constitute the modalities through which knowledge takes shape in situated action (Castro-Alonso et al., 2024; Varela et al., 1991).

Such a dimension, however, is not sufficient unto itself. As long as it remains only acted, experience remains opaque, capable of activating and involving, at times of moving emotionally, without thereby being translated into awareness or responsibility. The model therefore assumes it as a necessary but not sufficient condition for ethical-civic learning, and locates its fulfilment in the intertwining with the reflective-dialogic dimension, from which it receives thinkability and becomes shareable (Maggi, 2018; Maggi, Balestra, & Zappa, 2025).

3.2 Reflective-dialogic dimension

The second dimension concerns the shared elaboration of experience, the moment in which lived bodily experience is converted into awareness and speech. By returning through reflection to what they have done and felt, the subject questions its meanings and ties them back to their own history, while dialogue exposes those same meanings to comparison, redefining them in relation to others (Dewey, 1938; Mortari, 2019; Schön, 1983). Reflexivity does not arrive as a subsequent commentary on action. It is rather the movement through which experience becomes someone's experience, endowed with meaning and inscribed within a horizon of values (Mortari, 2019; Ricoeur, 1990/1992).

From this perspective, the dialogic dimension does not represent an appendage to bodily action, but the device that gives it form and makes its meanings shareable. Putting into words what the body has lived means making it accessible to the other and, in the same gesture, exposing it to their gaze and interpretation. Shared reflection thus becomes a practice of mutual recognition, since it calls for listening, alternation in taking and yielding the floor, and willingness to acknowledge the legitimacy of divergent perspectives on the same experience (Freire, 1970; Honneth, 1995). From here the ethical-civic dimension begins, where the meaning elaborated in dialogue does not close itself within the private sphere but calls upon the subject's responsibility towards a community.

3.3 Ethical-civic dimension

The third dimension concerns responsibility, listening, a sense of belonging and participation. By placing the subject within a shared space, embodied practices make

them experience, in their concreteness, limit, cooperation, conflict and reciprocity. Citizenship ceases to be content to be transmitted and is given as an embodied experience of common life, in which one's own body discovers itself beside, before and together with the bodies of others (Biesta, 2010; Nussbaum, 2011). Recognising the other as an embodied subject, welcoming their vulnerability and answering for one's own action compose the experiential root of civic responsibility, prior to and underlying every normative formalisation (Honneth, 1995; Ricoeur, 1990/1992).

In this dimension, embodied learning comes to fulfilment as the formation of the citizen. The student does not learn notions about participation, but discovers themselves as an embodied, relational and responsible subject, capable of inhabiting common space by taking upon themselves the perspective of the other (Biesta, 2010; Maggi, 2017, 2020). The three dimensions thus reveal themselves to be fully interdependent. Without reflective-dialogic elaboration, experience remains mute. Without an ethical-civic horizon, reflection folds back into the private sphere. Detached from its experiential grounding, the ethical dimension slips into abstract moralism. From this reciprocal solidarity, held within a single intentional design, the embodied grammar of educational citizenship is born (Maggi, 2020; Maggi & Balestra, 2025).

4. Digital environments, AI and the bodily anchoring of experience

The analysis developed in the preceding sections has shown that the educational quality of embodied practices does not depend on the nature of the context in which they unfold, but on the intentional design that ensures coherence among the experiential, reflective-dialogic, and ethical-civic dimensions of the model. Moving beyond the most common superficial oppositions, digital environments and Artificial Intelligence (AI) systems do not in themselves constitute an alternative to, or a threat against, Embodied Education; rather, they may represent a possible transversal mediation, capable of traversing each of the three dimensions of the model, provided that the body retains its status as the irreducible anchor of experience. The question is not whether to use technology or not, but how it may be mediated without dematerialising the lived experience of the learning subject (Marangi, 2026).

The 4E perspective offers a useful theoretical compass here. If cognition is embodied, embedded, enactive, and extended, digital devices may legitimately be understood as cognitive and environmental prostheses that extend, rather than replace, the capacities of the embodied subject (Clark & Chalmers, 1998; Malafouris, 2013). On this reading, an AI-augmented environment is not necessarily one that disempowers the body: it may be configured as an expanded field of action, within which gestures, perceptions, and interactions retain their constitutive function of meaning-making in the experiential dimension, provided that educational design does not delegate relational and reflective mediation to the machine (Lindgren & Johnson-Glenberg, 2013; De Jaegher & Di Paolo, 2007).

Recent scholarship on AI use in educational contexts with children aged 0–10 highlights that the effectiveness of intelligent technologies is directly proportional to the quality of the adult presence that accompanies them: AI can suggest, adapt, and extend, but the child remains a bodily subject who learns through doing, exploring, and relating (Williams, Park, & Breazeal, 2019; Xu, 2024). Tangible AI systems and physically manipulable interfaces offer a paradigmatic example of how the digital can honour the centrality of the body: by requiring gesture, coordination, and embodied attention, they keep the experiential dimension of the model open rather than col-

lapsing it into a purely visual relationship with the screen (Worden, Hu, & Zhang, 2019; Samuelsson, 2023).

What risks eroding the educational value of practice is not technology as such, but the absence of that intentional design which the model posits as a precondition for all ethical and participatory learning. At the level of the reflective-dialogic dimension, digital environments may support the shared elaboration of bodily experience, through augmented narratives, multimodal feedback, or documentation tools, only if the adult preserves the primacy of embodied dialogue and mutual recognition (Mortari, 2019; Asterhan & Schwarz, 2016). Applying the REAL framework proposed by Jones and Schonewille (2025), the educator who integrates digital tools or AI should ask what is retained of authentic bodily relation, what risks being eroded, which abilities might atrophy through excessive delegation to the machine, and how technology might instead enhance curiosity, inclusion, and the shared construction of meaning (Marangi, 2023). Such a reflexive stance is itself consistent with the reflective-dialogic dimension of the model: the educator who critically examines their own use of technology is already performing an act of embodied reflexivity, aware that every environmental choice modifies the conditions of possibility for the body that learns. As regards the ethical-civic dimension, technology can become an occasion for citizenship only if it introduces the subject to experiences of shared responsibility, algorithmic transparency, and care for the common good, preventing the delegation to the machine from supplanting the embodied taking of a position within the shared world (Biesta, 2010; Floridi et al., 2018).

Embodied Education, ultimately, does not position itself as an alternative to the digital, but as an experiential anchor capable of restoring bodily depth to technologically augmented learning. When digital environments are deliberately designed and employed to stimulate action, exploration, and dialogue, rather than to replace relation or reduce the subject to a passive consumer, the continuum between body, reflexivity, and citizenship that the model describes can unfold even within hybrid and post-digital contexts, confirming that the decisive pedagogical question is not the medium, but the quality of the educational intention that inhabits it (Varela et al., 1991; Xu, 2024).

5. Towards an embodied grammar of educational citizenship

The path undertaken makes it possible to specify the thesis from which it began. The body does not educate in itself, but insofar as it is assumed within practices that transform it into mediation, reflection and responsibility. It is not movement that forms, but the intentional weave that makes it an occasion for shared awareness. This is the shift that the body-reflexivity-citizenship triad intends to fix, where it renounces presenting itself as a method or repertoire of activities and offers itself instead as a grammar, that is, as the set of conditions that make the educational meaning of bodily experience legible and generable.

Recognising an embodied grammar means admitting that the formative quality of practices does not reside in their materials, but in the way in which action, reflection and dialogue are held together by design. In this respect, digital environments and Artificial Intelligence do not oppose the body, but mediate it, and require an experiential anchoring capable of restoring bodily depth to augmented learning. From this follows an indication for those who design educational contexts, who are called to

assume the triad as a lens through which to question every choice, whether physical or technological, in the light of what it opens or withdraws from the subject who learns.

Empirical verification remains open, and constitutes its testing ground. The model lends itself to being tested at a precise point. If the hypothesis holds, the same bodily experiences should generate reflexivity, recognition and participation where they are accompanied by practices of intentional dialogic re-elaboration, and much less so in their absence. Verifying this means comparing embodied experiences accompanied or not by such practices, documenting through observational and multimodal methods not only outcomes but processes, gesture, posture, interaction and the quality of the dialogue that re-elaborates them, alongside indicators of listening, responsibility and care for the common. Elective contexts are inclusive classrooms, outdoor environments and technologically augmented scenarios, where the transversality of the digital in relation to the three dimensions can be tested in the field.

In the background remains the question from which the article began, that of the conditions that allow bodily experience to become an experience of citizenship. The grammar proposed here does not dissolve it, but offers a way of inhabiting it with pedagogical awareness (Biesta, 2010; Maggi, 2020).

Author contributions

The study design and the final revision of the manuscript were carried out jointly by all authors. The drafting of the manuscript was distributed as follows: D. Maggi wrote Sections 1 and 2; A. Balestra wrote Section 3 e 5; M. Marangi wrote Section 4.

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