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Kairos and the machine: ethics, body, and educational endeavor

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Abstract: In an educational ecosystem undergoing profound transformation and increasingly influenced by the presence of artificial intelligences, it becomes essential to reaffirm the embodied, affective, and situated dimensions of educational experience, in continuity with the principles of Embodied Cognition (Varela, Thompson & Rosch, 1991; Gallese & Lakoff, 2005). Through a comparison between disembodied artificial intelligences and those endowed with physical and sensorimotor presence, this contribution explores the transformations brought about by artificial presence within educational spaces and times. It highlights how learning time is qualitative, unrepeatable, and difficult to represent through chronological metrics, being more accurately described within a kairological framework (Pfeifer & Bongard, 2007). From this perspective, the educator assumes the role of a designer of possible worlds (Laurillard, 2013), called to create environments capable of embracing the complexity of learners without falling into standardization. When guided by a shared ethical vision among educators, institutions, and technology designers, artificial intelligence can contribute to a transformation of pedagogy, fostering greater sensitivity to the complexity of human experience. This paper seeks to outline possible coordinates for a technology-mediated pedagogy oriented toward uncertainty and attentive to the bodily conditions that make learning a situated experience.

Keywords: Embodied Education, Artificial Intelligence, Situated Learning, Kairos, Educational Ecology.

1. Introduction

In the evolving context of the onlife dimension, where the boundaries between real and virtual, physical presence and digital interaction, classroom and platform are increasingly blurred (Floridi, 2015), discussing learning requires a shift in perspective. Education is increasingly understood as a relational, situated, and affective experience (Biesta, 2015; Zembylas, 2007), involving bodies, environments, and technologies, and unfolding as a dynamic field in which knowledge emerges through embodied, sensitive, and distributed interactions (Hutchins, 1995), interwoven with digital content and the spatial-temporal dimensions of the lesson.

Within this scenario, the presence of artificial intelligence rewrites the rhythms and modes of learning by influencing thresholds of attention, forms of interaction, and cognitive timing. In doing so, it contributes to the construction of the educational environment and to the co-definition of spaces, subjectivities, and formative intentions (Selwyn, 2019; Knox, 2020). In this new cognitive ecology, the teacher takes on the task of navigating and inhabiting a complex network of relationships. At the same time, the student is configured as an embodied subject who learns through personal rhythms, emotional resonances, and non-linear forms of meaning-making (Shapiro, 2019; Varela, Thompson & Rosch, 1991).

Embodied Education, in this emerging context, provides an interpretative framework capable of integrating the bodily, affective, and technopolitical dimensions of the educational process. The key issue thus becomes the possibility of designing environments in which artificial intelligence is integrated with the experiential dimension of learning. In such contexts, it is essential to foster educational spaces that welcome anticipation, reflection, and complexity, adopting criteria that are attentive to the rhythms and subjective dynamics of learners. This work aims to explore the conditions for a technology-mediated pedagogy in situated contexts, capable of recognizing the body as an epistemic resource and technology as an element of the educational system to be critically analyzed and consciously engaged.

Education thus plays a crucial role in shaping informed and responsible citizens who can leverage digital technologies to promote democratic values, counter misinformation, and actively engage in society. Innovative educational programs and digital literacy policies are essential to ensure that future generations can navigate the global digital ecosystem with awareness and discernment (European Commission, 2020).

2. Embodied AI and the educational space

Artificial intelligence has long moved beyond the invisible boundaries of code. Today, it presents itself with a body that is plastic, articulated, sometimes humanoid, capable of inhabiting space and interacting through complex sensory channels. Its embodied applications are gradually gaining ground in educational settings, through experiments involving social robots, corporeal digital tutors, and situated artificial agents that are beginning to actively participate in learning processes (Yang et al., 2025; Asada, 2024).

This context highlights the importance of designing school environments where embodied AI becomes part of the educational system in its situated and interactive dimensions. The effectiveness of these artificial presences is tied to their integration into settings that consider bodily proximity, the distribution of attention, and the ability to share and organize educational space according to principles of design sensitivity. Their impact depends on careful incorporation into environments structured to manage physical presence, attentional dynamics, and spatial organization through deliberate pedagogical choices (Belpaeme et al., 2018; Okada et al., 2025).

The arrival of embodied AI transforms the relational, emotional, and cognitive dynamics of the school environment. Robots equipped with visual, tactile, and auditory sensors are designed to monitor attention, read faces and emotions, and offer personalized content. Their actions are not limited to command execution; they can establish connections, regulating rhythms, and actively participating in the educational setting (Kennedy et al., 2015).

When interacting with these artificial bodies, students activate adaptive and situated responses, adjusting their perceptions and actions based on signals from the machine. Experiences with educational robots such as NAO, QTrobot, or iCub show how these devices generate somatic engagement, sparking curiosity, attention, or even uncertainty. Relationships are redefined as the robot's sensory movements guide behavior, vocal outputs influence responses, and physical proximity shapes participation (Tatarian et al., 2020; Cangelosi & Schlesinger, 2015). These dynamics call for instructional design that is attuned to the relational dimension. The spatial arrangement, physical distance, and sequence of exchanges between student and robot become crucial pedagogical variables, as also indicated in studies on multimodal and distributed interaction in education (Kennedy et al., 2015).

Recent research shows that students attribute intentionality and emotional capacity to these devices, giving rise to meaningful interactions (Istenič et al., 2025). Experiments in real school settings suggest that embodied AI can support the development of transversal skills and help create inclusive learning environments (Okada et al., 2025).

This intensity, however, may also become a constraint. Bodily interactions with intelligent machines tend to generate expectations and behavioral patterns aligned with parameters of efficiency and correctness. Social robots, though intended to facilitate learning, can end up reinforcing normative models that influence affectivity, attention, and performance (Damiano & Dumouchel, 2018). Embodied Education offers a perspective that allows for critical reflection on these tendencies by focusing on the body as a site where cognitive and emotional processes are activated.

The relationship between learning subjects and artificial intelligences with a body raises important educational questions concerning voice, interpretation, and fallibility. Learning emerges from situated interaction, from dialogue between embodied presences, and from the continuous negotiation of meaning. In this framework, artificial presence must be examined in terms of its responsibility, within an ethics of relation that acknowledges otherness and embraces unpredictability (Brooks, 1991; Liu et al., 2024; Hansen, 2015). This orientation supports the development of educational practices and technologies that accommodate pauses, hesitation, moments of uncertainty, and meaning reconfiguration. It balances accurate and rapid responses with opportunities for openness and discovery. The design of learning experiences involving embodied AI can therefore move toward dialogic and non-linear forms that recognize error as a meaningful part of the learning process (Damiano & Dumouchel, 2018).

Embodied AI expands the educational landscape by introducing new corporeal forms and prompting questions about gestures, the educability of relationships, and the coexistence of biological and synthetic bodies. Within these interactive spaces, educational opportunities emerge from reciprocity and differences. It is within these spaces that education takes shape.

3. The posture of learning: between invisible interfaces and embodied presences

Learning is an act that involves the body, emotion, and meaning-making within a dynamic relationship between sensation and cognition (Gomez Paloma et al., 2016). It is a posture, both real and symbolic, that takes shape within a complex environment where the presence of artificial intelligence alters the conditions of perception, attention, and sense-making.

The paradigm of Embodied Cognition reminds us that knowing implies acting with the body, in close connection with an environment rich in affordances (Pfeifer & Bongard, 2007; Gallese & Lakoff, 2005; Lindblom & Ziemke, 2003).

When the learning environment becomes populated with artificial presences, situated between the invisibility of code and the physicality of robots, the posture of learning is put to the test. Disembodied AIs, such as automatic adaptation systems, assessment software, or attention-tracking technologies, operate silently, regulating the pace and mode of the educational process. They influence speed, anticipate error, and define sequences. In doing so, they condition the learning space, and although their presence is not always visible, their impact deeply shapes the educational experience (Selwyn, 2019; Knox, 2020; Williamson & Piattoeva, 2020).

This configuration calls for a thoughtful approach to integrating intelligent systems into environments that preserve room for student autonomy. Technologies can support instructional organization, provided their influence is examined in relation to the bodily and situated nature of learning. The introduction of adaptive systems, for instance, could be guided by strategies that consider the learner's posture and its variability (Lindblom & Ziemke, 2003).

Alongside these algorithmic presences, there are forms of AI that possess a body, including social robots and artificial assistants capable of movement, visual detection, and vocal interaction. These embodied agents generate a multisensory presence that evokes the idea of situated cognition. Although their bodies do not experience relationships directly, they simulate them through programming and automated responses. Designed to elicit empathy, these devices replicate forms of interaction that engage the human body through programmed signals, offering a relational simulation that resembles but does not coincide with lived affective experience (Yang et al., 2025; Tatarian et al., 2020; Asada, 2024; Damiano & Dumouchel, 2018).

This relational simulation presents important challenges for educational design. It may be beneficial to include activities that encourage critical comparison between artificial presences and embodied experience, creating opportunities for metacognitive reflection on the nature of interaction (Tatarian et al., 2020; Damiano & Dumouchel, 2018).

Within this tension, the educational experience takes the shape of a layered space. Disembodied intelligences guide learning through adaptation algorithms of, automated suggestions, and content personalization (Dede & Richards, 2020), while embodied ones make themselves visible and interactive, engaging the learner's body through gestures, voice, and proximity (Belpaeme et al., 2018). Both forms generate dynamics that elicit cognitive, emotional, and bodily responses, contributing to the emergence of meaning. Learning unfolds in the ability to navigate these hybrid presences, acknowledging their effects on subjectivity and relationships. Educational environments can benefit from this plurality of presences if they are designed to make the conditions that influence learning visible. One possible approach involves organizing spaces where students and teachers can express and discuss the different forms of presence, whether bodily, digital, or artificial, to foster situated awareness of the educational experience (Suchman, 2007; Hui, 2021).

The embodied approach offers a critical lens. It encourages close observation of educational dynamics with attention to bodily relations and their implications. It places the body back at the centre of educational discourse as a living site of meaning and empathic activation (Varela, Thompson & Rosch, 1991; Gomez Paloma et al., 2016; Shapiro, 2019). From this perspective, the posture of learning becomes a form of conscious presence, capable of sustaining the complexity of interaction with technological devices. The educational space becomes a field where decisions are made about the kind of relationships to foster and their consequences (Hansen, 2015; Yuk Hui, 2021; Suchman, 2007).

In the daily interaction with intelligences that listen, speak, and suggest, the human body is called to a constant act of vigilance. Being present also means the ability to sense, distinguish, and orient oneself through an embodied form of attention that engages the body in its perceptual and relational dimensions. From a design perspective, this can translate into teaching strategies that cultivate bodily awareness and situated attention, for example through active listening practices, reflective movement, or multisensory exploration of the technological environment. Ultimately, the one who truly educates is the one who still knows how to recognize a gesture, notice a hesitation, and respond to a presence, even amid algorithms.

4. Inhabiting the AI environment

The educational space is gradually moving beyond traditional boundaries and is beginning to organize knowledge in ways that are less linear and more fluid. Many recent experiments point to increasingly permeable and hybrid configurations, creating a semiotic atmosphere in which distinctions between inside and outside, corporeality and code, human and non-human are continually redefined (Sloterdijk, 2004; Massumi, 2015). Learning today means engaging in environments filled with stimuli, presences, and devices where relationships are constantly shifting. Space emerges from the interaction between biological and synthetic bodies, and from these interactions, new possibilities arise (Lefebvre, 1991; Latour, 2005).

These transformations highlight the need to design educational environments that consider the simultaneous presence of human and artificial bodies, the diversity of cognitive rhythms, and multisensory interactions. In practical terms, this involves adopting flexible spatial arrangements that include mobile furnishings, reconfigurable partitions, and interaction areas capable of adapting to the relational and perceptual needs that arise during educational activities (Sloterdijk, 2004; Latour, 2005).

When embodied artificial intelligences such as devices that speak, move, and observe are introduced into the classroom, they reshape the configuration of the learning environment. Traditional roles and spatial arrangements are reorganized into a sensory network based on proximity and distributed interaction (Yang et al., 2025; Dede & Richards, 2020).

Educational robots influence movement, waiting time, and the dynamics of interaction. From a design perspective, this underscores the importance of positioning artificial elements with pedagogical intent. Arrangements that are mobile, areas with adjustable proximity, and components that allow students to regulate the distance and sequence of interaction can help ensure that the robot functions as an educational presence rather than a behavioral constraint (Dede & Richards, 2020).

The openness and fluidity of the educational space also introduce new forms of vulnerability. Exposure to continuous stimuli from notifications, mobile interfaces, digital assistants, and avatars creates a dense web of interaction, but it also increases the risk of distraction (Selwyn, 2019; Parisi, 2019). The learning body is immersed in a dynamic environment where it must constantly renegotiate its position and redefine its presence. A thoughtful design approach could include low-stimulation zones, structured pauses, and spatial arrangements that offer the body moments of silence or perceptual suspension. These design elements support educational experiences where the intensity of artificial presence does not eclipse the learner's capacity for reflection (Selwyn, 2019; Parisi, 2019).

Unlike distributed and often invisible software systems, embodied AI occupies physical space, imposes a rhythm, and demands a bodily response. This intensity may become excessive, as the machine's presence can saturate the learning environment and leave little room for pauses or interruptions (Tatarian et al., 2020; Ziemke, 2003; Coeckelbergh, 2020).

In this context, it is important to develop pedagogical strategies that pace the interaction with artificial agents by alternating guided activity with deliberate moments of rest. Continuous presence is not necessary for educational effectiveness. Even planned absence can have pedagogical value (Coeckelbergh, 2020). The current educational challenge lies not in the mere introduction of new technologies but in designing environments where meaningful experience remains possible. A well-conceived educational space integrates technologies while preserving the vital connection between movement, perception, and meaning. This calls for modular spaces that support, rather than standardize, interaction in its specificity (Belpaeme et al., 2018; Castañeda & Williamson, 2021).

To learn today means sustaining attention within complex environments where digital signals and physical interactions coexist.

5. Affective dimension and educational transformation

Learning leaves a trace. It settles deeply, at the precise point where a gesture, a word, or a presence manages to transform the learner, even without full awareness. From this perspective, to educate means entering a relationship capable of transforming both subjects and environments. The body plays an active role in this process. It is through the body that learning is absorbed, processed, and sometimes unexpectedly transformed, generating new forms of subjectivity (Sheets-Johnstone, 2011; Manning, 2013).

When artificial intelligence enters this affective field, the situation becomes more complex. Disembodied AIs, through systems of recommendation, assessment, or emotional tracking, operate subtly yet incisively. They anticipate, classify, and correct according to repetitive patterns. This can lead to a flattening of the learning experience, reducing surprise, ambiguity, and the space for error. In such contexts, affectivity tends to be treated as a variable to be monitored and optimized rather than as a lived, subjective, and relational experience (Knox, 2020; Parisi, 2019).

The arrival of embodied AIs adds further complexity. Through body language, voice, and facial expressions, these technologies are designed to reproduce behavioural cues associated with human affect. Educational robots, for instance, can simulate smiles, tilt their heads, or vary their vocal tone to elicit relational responses from students. This ability to mimic emotional dynamics opens new possibilities for interaction but also introduces significant ambiguities. On the one hand, excessive emotional stimulation can make it difficult to distinguish between spontaneity and programming. On the other, there is a risk of creating a relational dependency on an interlocutor that operates through standardized responses (Damiano & Dumouchel, 2018; Coeckelbergh, 2020).

At a design level, the introduction of embodied AI requires careful regulation of its emotional display. It is useful to define interaction protocols that alternate moments of empathic engagement with phases of expressive neutrality. This approach can help prevent emotional overstimulation and encourage a more critical and conscious use of artificial empathy (Damiano & Dumouchel, 2018). Education takes place through physical and relational interactions that produce perceptible changes in those involved. Learning involves both exposure to external influences and the capacity to influence others through gestures, behaviors, and emotions. Embodied Education, understood as a relational and affective practice, interprets every educational situation as an opportunity to intensify mutual sensitivity and attentive listening (Massumi, 2015; Shapiro, 2019).

This raises important questions about what happens when such processes are guided by a programmed presence that simulates relationship but does not live the experience. An education that takes affectivity seriously can include structured activities for shared reflection following interaction with artificial devices. These metacognitive moments help students distinguish between artificial stimuli and authentic emotions, fostering an ethics of relationship even in hybrid contexts (Zembylas, 2007; Haraway, 2016).

It is within this space of tension that education becomes most demanding. A well-designed AI can support emotional openness, but only if the modes of use and interaction do not reduce affective experience to logics of efficiency and allow room for the complexity of feeling. Affective education is a space of listening and transformation and, as such, requires time, tolerance for error, and acceptance of uncertainty. These are conditions that artificial intelligence, due to its algorithmic and designed nature, cannot support independently, even when it assumes a bodily form.

From a pedagogical perspective, it is important to create contexts in which uncertain or undefined emotional situations can be experienced. In such environments, students and teachers may encounter complex emotions without the immediate need for a response or solution. One example is the use of reflective writing following activities with embodied AI, where students are invited to describe what they felt, what made them uncomfortable, or what surprised them. This type of activity does not require immediate evaluation but instead opens space for personal and relational processing of the experience, fostering greater emotional awareness (Zembylas, 2007).

In this scenario, the task of the educator is to create the conditions for authentic emotions to emerge. This requires sensitivity to the contexts, timing, and ways in which emotional experience can develop. It also involves perceiving when artificial presence may be supportive and when it might become overwhelming. It is precisely here that Embodied Education takes on its fullest meaning, in the care of the other, in attentiveness to the unexpected, and in the transformation of learning into a shared experience (Haraway, 2016; Zembylas, 2007).

6. The teacher as a designer of possibilities

The role of the teacher today is complex and fundamentally design-oriented. It is no longer confined to the transmission of content but involves acting as a designer of possibilities by constructing environments that foster the emergence of meaning and supporting interactions among learners, technologies, and spaces. In this perspective, Embodied Education encourages us to understand teaching as an embodied gesture grounded in presence, attentiveness, and relationship. Artificial intelligence, even in its embodied forms, can be integrated into educational processes as an adaptive support, provided it is designed and managed with sensitivity to the relational and sensorimotor dimensions of the learner (Belpaeme et al., 2018; Coeckelbergh, 2020).

To promote learning environments aligned with this vision, the teacher may adopt co-design practices with students, engage in dialogic monitoring of interactions, and cultivate ongoing pedagogical reflection (Laurillard, 2013; Dimitriadis & Goodyear, 2013). The adoption of technology, to be pedagogically meaningful, must take place within an intentional and situated framework in which design decisions are guided by criteria of inclusivity, learner agency, respect for bodily rhythms, and awareness of the implicit power relations embedded in digital systems (Castañeda & Williamson, 2021).

The teacher's role involves guiding, evaluating, and nurturing the identity transitions inherent to the learning process. The teacher mediates between different layers of experience, balancing the physical and the digital, the human and the algorithmic. This competence is cultivated through reflection, experience, and care, and translates into everyday practices that value difference, subjective pacing, and affective resonance (Facer & Sandford, 2010; Ellis & Goodyear, 2016).

Alain Berthoz (2012) introduces the concept of simplexity, the capacity to manage complexity by simplifying it without diminishing its richness. In education, Maurizio Sibilio (2014) interprets this as a strategy for embracing the diversity of languages, postures, and learning rhythms without imposing uniform or performance-driven models. Gomez Paloma et al. (2016) emphasize that the sensorimotor dimension is a necessary condition for the activation of both cognitive and emotional processes.

Within this framework, the teacher operates at a design level on space and interaction to enable the emergence of shared meaning through the body. Practically, this requires developing flexible educational environments that allow for movement, pauses, and multisensory engagement. The teacher may act as a facilitator of embodied and relational experiences, integrating digital devices in a way that does not compromise the quality of educational engagement (Ellis & Goodyear, 2016; Castañeda & Williamson, 2021).

To design, then, does not simply mean to innovate. It means observing attentively the rhythms, the pauses, and the gazes that animate the learning process. Artificial intelligence can offer support only when it is embedded in environments that recognize the singularity of learners and preserve the situated value of educational experience.

In this scenario, the teacher is called upon to question the machine, to understand its implications, and to direct its use critically. The teacher becomes a craftsperson of possible worlds, capable of transforming AI from a mere technical presence into a component that enriches educational potential (Haraway, 2016; Castañeda & Williamson, 2021).

7. Subjective time and embodied learning

Each person learns at their own pace. The time of learning does not follow rigid patterns; it is irregular, subjective, and at times unpredictable. It is what the ancient Greeks called kairos—the opportune moment, the dense instant in which unexpected understanding occurs. This kind of time is not measured in seconds; it is experienced as a moment of opening within the learning body (Shotter, 2005).

Educational technologies, particularly AI, operate instead according to a linear and measurable notion of time. They analyze data, assess performance, and predict difficulties. However, this mode of intervention risks overlooking fundamental dimensions of the learning process such as waiting, hesitation, and suspension. AI cannot inhabit these spaces of delay, yet such moments are essential for meaning to emerge. From a design perspective, this implies the need to create environments and practices that do not impose uniform rhythms but allow learners to inhabit their own educational time. It is important for digital platforms and educational robots to be integrated into activities that include time for reflection, spaces for slowing down, and opportunities to rework experience (Shapiro, 2019; Lindgren & Johnson-Glenberg, 2013).

Even embodied AI, with its form and physical presence, can simulate waiting or slow down interactions, but such modulation lacks genuine contextual understanding. It cannot perceive the transformation occurring within the learner. For this reason, the role of the educator remains central. It is the educator's sensitivity that enables them to recognize the right moment, to embrace uncertainty, and to value silence and slowness (Davies, 2014; van Manen, 2016).

In this light, an instructional design grounded in Embodied Education should include variable temporalities in learning pathways. This may involve asynchronous activities that respect individual rhythms, moments of collective review, and the use of technological devices as flexible rather than prescriptive tools (Rosa, 2013; Ergas, 2017). Integrating AI into education also requires attention to the ways in which it structures time. Its incorporation should be accompanied by critical reflection, to ensure that the temporal logic of AI does not compress kairos or prioritize efficiency alone. The teacher's task is to protect the meaningful times of learning, those in which understanding deepens, accumulates, and sometimes surprises.

To educate, in this view, is an exercise in presence and attunement to the timing of the other. It is a relational art that demands attentiveness, care, and the willingness to leave room for the unexpected. No machine, however advanced, can replace this form of deep and transformative listening (van Manen, 2016; Shotter, 2005).

8. Against industrial pedagogy

Recent years have seen a significant expansion in educational tools, platforms, and methodological approaches. Each new development is often greeted with enthusiasm and can offer valuable opportunities for teaching and learning, yet it also carries the risk of overlooking the embodied dimension of educational experience. Learning may risk being reduced to procedure, replicability, and measurable outcomes. Within this framework, educational action tends to become standardized and assessed primarily through the lens of efficiency, leaving little space for what is not immediately visible or quantifiable (Illich, 1971; Watters, 2021).

Artificial intelligence, whether disembodied or embodied, easily fits into this dynamic, especially when used instrumentally to optimize time, correct errors, or support alignment with formal standards. For its application to hold pedagogical meaning, AI must be embedded within an instructional framework that values unpredictability, the emergence of meaning, and living interaction. Learning maintains an intermittent, relational, and situated nature that cannot be entirely planned or automated (Selwyn, 2019; Williamson & Piattoeva, 2020).

Designing with AI therefore involves critically questioning the epistemological and pedagogical implications that technologies carry. It is essential to avoid treating learners as adaptable and predictable entities, thereby disregarding their complexity and uniqueness (Bowker & Star, 2000; Biesta, 2015). One possible design approach may draw on the principles of Embodied Education, which places the body at the centre of the educational experience. Within this framework, technology is integrated into environments that recognize and accommodate often overlooked dimensions such as silence, waiting, slowness, and emotional resonance. Digital platforms and intelligent devices, for instance, can be programmed to encourage pauses, allow for student decision-making, and avoid predefining the entire learning path (Shapiro, 2019; Varela, Thompson & Rosch, 1991).

The critical issue is understanding how technologies shape educational interaction. In addition to the adoption of tools, critical instructional design must include support strategies for both students and teachers, aimed at developing reflective awareness of technological mediation. Learning requires openness, dialogue, and the possibility of discontinuity. It needs spaces where something can happen outside of the plan (Biesta, 2021; Bayne, 2015).

In this scenario, the educator is the guardian of the quality of the learning experience. Their sensitivity in interpreting situations, modulating rhythms, and recognizing the uniqueness of a gesture or a relational need, continues to ensure their relevance within the technological ecosystem. From this point of view, the use of AI in education becomes an opportunity to question the very meaning of education and to reimagine practices that restore depth and significance to the learning process.

9. Conclusion: educating through transition

We are immersed in a moment of change in which fragments of the past coexist with uncertain openings toward the future. Educational models are evolving while digital technologies become increasingly embedded in everyday school practices. In this shifting context, to educate means to navigate continuous transition. It demands care and attentiveness, a commitment rooted in relationship and presence (hooks, 1994; Biesta, 2015).

Artificial intelligence is one of the clearest signals of this transformation—a form of presence that reshapes the conditions of learning, and challenges us to reconsider how knowledge is constructed, relationships are formed, and educational spaces are inhabited (Hui, 2021; Hayles, 1999).

In particular, embodied AI calls for a pedagogy attuned to kairos, affectivity, and spatial ethics, in which teachers recognize that both content and the modulation of time, proximity, and relational rhythm shape the possibility of learning.

Within this reconfiguration, Embodied Education offers a framework for restoring value to lived experience, shared time, and bodily presence. It calls for a close examination of technology, questioning its effects and limitations (Varela, Thompson & Rosch, 1991; Ellsworth, 2005; Simondon, 2005).

In an era where information is abundant and automation seductively efficient, there is an urgent need to cultivate an inner space, a critical mindset capable of reflection, discernment, and thoughtful interrogation of what is being learned. This form of critical awareness is not abstract or disembodied—it can be cultivated precisely within embodied educational contexts, where slowness, attentiveness, and relational presence support the emergence of thoughtful and situated understanding.

This orientation restores meaning both to learning and education understood as processes of transformation, responsibility, and ethical design. It also reaffirms the role of the school as a space for both human and cognitive development (Biesta, 2021; hooks, 1994), capable of holding together elements often perceived as dichotomous: thought and body, knowledge and relationship, technique and ethics (Gumbrecht, 2004; Braidotti, 2019).

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