PHYSICAL EDUCATION BETWEEN BODY, MIND AND DIGITAL EXTENSIONS

L'EDUCAZIONE MOTORIA TRA CORPO, MENTE E PROTESI DIGITALI

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ABSTRACT

Recent scientific discoveries concerning the human mind, the ability to create technologies and the development of AI, upset and call into question the meaning of the body and its 'education'. The physical - sports educator-trainer must review and reinterpret the pedagogical paradigms that guide his intervention to accompany the individual to inhabit his "protean body", to integrate the new intellectual and technological accessories in respect of creativity and freedom to be and to realize oneself authentically.

Le recenti scoperte scientifiche inerenti la mente umana con le sue capacità di esercizio trasformate in tecnologie e lo sviluppo della IA, sconvolgono e rimettono nuovamente in discussione il significato di corpo e la sua 'educazione'. L'educatore-formatore motorio-sportivo deve rivedere e reinterpretare i paradigmi pedagogici che guidano il suo intervento per accompagnare l'individuo ad abitare il suo corpo 'proteiforme', a integrare i nuovi accessori intellettivi e tecnologici nel rispetto della creatività e libertà di essere e di realizzarsi autenticamente.

KEYWORDS
Physical education; Artificial Intelligence; enactive embodiment
Educazione fisica; Intelligenza Artificiale; incarnazione enattiva

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Introduction

The body is the first indicator of being a person, it is at the same time the element of connection with the world. The body is not separated from the mind and the learning process always takes place in the body and mind. The body seems to have expanded considerably, and it has become an object of worship in some respects; but this expansion has not always gone hand in hand with its ability to take shape as authentic humanity.

Precisely because of its "omnipresence", the body is the object of care and attention by pedagogical science, which increasingly assumes the scientific "paradigm of embodiment". Analyze the body means operating in terms of interdisciplinarity, of sharing different looks and experiences (Peluso Cassese, Torregiani, 2017), which are useful for restoring an image of the lived body of the embodied person and therefore understanding how to take care of it. Understanding the interaction between the parties allows us to better understand how to educate the person, and/or how to form him without fragmenting the individual or creating dangerous dichotomies (Gomez Paloma, 2013).

The action of educational care develops from the conception of "enactive embodiment", which considers the connection between environment, body and mind, beyond a defined intra-individual spatiality, to be established. "It connects 'brain, body, environment' and 'self and other' – the units of investigation of cognitive science – following not the spatial logic 'internal/external', but the dynamic logic of 'enmeshment' – the 'embrication' generated by co-evolution" (Ceruti and Damiano, 2013, p. 24). We can therefore speak of a body-brain, organism and environment interaction with a widespread brain (Ferri, 2022, p. 37). In scientific research, this also means hybridizing phenomenological approaches, neuroscience, Western and Eastern visions (Ferri, 2022, p. 27), re-evaluating the different relationships between human elements. "Body-mind: if the brain is not, as Morin says, 'the tyrant who commands the organs', but is itself part of the organism, itself a body, and if the body as a whole is not a 'baggage' of the brain, but is crossed, inhabited by the 'mobile' brain; if the mind emerges from the brain and the body as a whole and has in them the biological correlates of its functioning, it follows, first of all, a possibility of redefining the body: from 'body we have' to 'body that we are', from 'body-thing' to 'body-life', in Galimberti's words" (Contini, 2006, p. 36).

All this leads to the recognition that the body represents a complex whole, the complexity of which must also be evaluated in the pedagogical-educational gaze that is at the same time interdisciplinary. The body and the awareness of having and being a body allow knowledge of oneself, of the environment, of others. The body, that is, is biological, psychological and cultural (Gibson, 1979; Wilson, 2002). It requires an all-round mapping, avoiding reductionist approaches which, despite being outdated from an epistemological point of view, reappear and still persist when dealing with physical and sports education (Gomez Paloma, Ascione, Tafuri, 2016).

Consequently, particular attention must be paid to the formation of "educators of the body" so that they acquire a total knowledge of the body, conduct an exploration in its "enactive" totality, give life to situations of embodied knowledge, which include experiences and awareness of the self, the possibilities of building personal and community identity.

Despite this, there is also a difficulty in translating this theory of the embodied person, which is always an inseparable set of bodily-mental and emotional-affective experiences, into educational practices of care in an embodied key. The priority objective of physical educators should consist precisely in being able to act in the awareness of interacting with an embodied identity. Educational places such as schools, sports clubs, health contexts, however, still consider the body mainly as a construct to be governed, so that physical education ends up translating and reducing, depending on the context, into:

- specialized and professional sports "training" of the "body-organ(s)", of the machine body, to obtain a specific technical performance;
- in a therapeutic reparative path of rehabilitation of a diseased organ;
- in a school course of learning basic physical skills (Benetton, 2023).

Dealing with the education of the embodied and total body, it is instead necessary to identify dualistic and fragmented visions, to overcome and integrate them, to fully understand how the body structures knowledge and carries out human actions. In fact, it is not a machine that executes commands, a flesh (Henry, 2001) to be subdued and shaped, but the way of being and declaring oneself of each person in the free possibility of becoming. The body includes knowledge, and expresses awareness; kinesthetic intelligence is not just a sort of mechanical executive capacity, but it is a modality of knowledge of the body, it allows the evolution of knowledge and emotion. The "*Leib* body", the lived body, is part of emotional intelligence.

There is a training action to be carried out on the physical and pedagogical skills of educators and trainers, regarding the assumption of the categories of the "paradigm embodied" in the identification of projects and paths of physical education and sport. The approach to the embodied person concerns educators whether they act in an educational context such as school, or in a 'competitive' context such as sports, or whether they operate in a restorative context such as healthcare.

1. Artificial and digital body

"Human beings are corporeal; a life based on the phone is not. Screens lead us to forget the importance of our physical body" (Haidt, 2024, p. 247).

Today it certainly seems necessary to become aware of the new embodied paradigms and to know how to give an educational-didactic translation. But to this is added the need to identify the new forms of reductionism and dualism that can make the implementation of educational-training paths of education of the body further complex and difficult as an accompaniment to the construction of the total, carnal identity of the person. In fact, to the classic split of the identity between body-matter and immaterial mind is added a further separation of man, that is between total, authentic and artificial man. In turn, artificial identity refers to the split between cyborgs and AI. One then wonders with respect to the use of prostheses, implants, electronic circuits placed in the body, how much they can be considered external or internal to man, whether they can coexist and how the interaction takes place given that in part these artificial elements adapt to the functioning of the body and in part take on a different structure (Caronia, 1996, p. 114-115). Above all, it is a matter of understanding how technologies can change the way we perceive ourselves, and how they can change our skills and knowledge and in what direction. It must be verified whether there can be a form of rejection by the body towards the body-prosthesis and how it manifests itself. Or, on the other hand, it must be evaluated whether the cyborg-body is perceived as the authentic self. Similarly, the massive introduction of AI raises the question if individual feels like a controller or controlled, whether the body of each person between artificialization, virtuality and AI is present to himself or whether it is scattered in digital spaces. It remains, therefore, to understand how AI creates a new interaction between mind and body, how should be revised the idea of "mind

embodied in a wise body" (Manuzzi), if it comes to place itself on the border between man-flesh and machine. Especially who manages the cyborg, who controls the AI? If there is no conscious self-direction of communication flows, of messages, as the roots of the body are not clear, and therefore its stability, even if relative, then every gesture, every action, every manipulation becomes possible (Caronia, 1996, p. 158).

Identity becomes ambiguity, the natural becomes artificial and vice versa, the body becomes an aggregate of artificial and virtual. So, who is presiding over it? And with respect to what objectives? These are questions that every 'physical educator' must ask himself, also trying to give a plausible answer with respect to the recovery of the meaning of human authenticity and the living environment that allows it to be made explicit (Cereda, 2024). Every individual must be put in a position today to ask questions about his or her hybrid being, about how to participate in the process of artificialization and digitization of the same. Can the cyborg (Caronia, 1985) become functional for the possibility of replacing some parts of the body? Will he constitute the new human?

2. Intelligent bodies?

The presence of virtual and technological bodies raises again, through another perspective, the problem of the well-known reductionisms that the interpretation of the body has undergone (Rivoltella, 2024). Technology and AI now require us to understand new forms of interaction updated to the brain-mind-AI, artificial body-body, environment-digital environment relationships. Also because, for example, access to digital prostheses of any kind is leading to a reconfiguration of the brain and the body (which are in any case units) and to a modification of human development, as well as to a new definition, perhaps still implicit, of human plasticity. In fact, human plasticity makes man capable of creative behaviors refers to a plastic brain made up of "neurons that bind, on the basis of experience, into units that are the cellular correspondent of what has been 'experienced'" (Andreoli, 2019, p. 49). Today, the digital environment and experience enter predominantly into the definition of human identity, modifying its behavior, bodily and cerebral conformation, towards a robotic and unaffective human conformation.

Thus the physical body that becomes digital becomes evanescent but, paradoxically, does not disappear, on the contrary it bears the signs of its digital

experience. The digital man is a sedentary character, The digital man is a sedentary character, which uses sight above all among the senses available, who conceives movement as the action of the hands on the keyboard, who transforms his sexual impulses into digital pleasure (ibid., p. 269).

Andreoli speaks of digital autism with respect to adolescents in whom there is early access and consumption of digitality, taking away space from Popper's World 1, making it impossible for the subject to participate in other sensory experiences. Gradually a project of alienation from reality is implemented, an erasure of reality is noticeable "also with regard to school and sports activities. The only impulse is to turn on the network and click. […] In other words, it is as if the plug of energy for the human brain had been unplugged and that of the digital computer and smartphone remained open. Brains turned off" (Andreoli, 2019, p. 263).

Haidt, in his well-known text *The Anxious Generation* (2024), also highlights these critical issues in the development of the person, pointing out how the image of childhood, the idea of child corporeality, the opportunities for growth and education are changing, based on a passage of experiences from the corporeal of the real world to the incorporeal of the virtual world. Just think of the use of smartphones, which first of all distract parents as reference adults, altering the possibilities of interaction with newborns, thus reducing the possibilities of children to exercise the necessary synchronization of movements and emotions with others, starting with the reproduction of facial expressions. The lack of attunement process prevents, in fact, the development of emotional self-regulation and physical self-regulation. "Physical, face-to-face and synchronized interactions and rituals constitute a deep, ancient, and underestimated part of human evolution" (Haidt 2024, p. 73). Haidt also highlights how virtual games lead to a lack of free physical play that allows one to learn socialization and experience 'controlled risk'. "We are corporeal creatures: children should learn to govern their bodies in the physical world before they start spending huge amounts of time in the virtual one" (Haidt 2024, p. 96). Similarly, the immoderate use by adolescents of social platforms, of media, leads to a mismatch in the sleep-wake rhythm and a reduction in the hours of sleep with negative consequences on the rapidly changing adolescent brain (Haidt, 2024, pp. 152-153). Added to this are the various forms of addiction to which social platforms induce through the use of "behaviorist techniques" of behavior modification. Returning to the focus on the material body, Haidt does not fail to point out how much mental health, especially for girls, is undermined by visual social comparison in sharing platforms. Social platforms offer body models

that are very difficult to imitate. Teenagers make a continuous comparison of their bodies with what the platforms propose and develop forms of mania of “socially prescribed” perfectionism (ibid., p. 188). Young people make attempts, obviously in vain, to approach a presumed physical perfection, using apps and filters that 'visualize', as pseudo-reality, a beauty of faces and bodies from *Instagram*, that is, unreal.

All this increases anxiety and depression in young people due to frustration at not being able to reach social aesthetic standards. The conception of the body and physical skills in social media therefore appears again distorted, fragmented, albeit in a different form than Cartesian reductionism. It also lacks “spiritual” references, as Haidt states (ibid., p. 244): virtual social time and digitalized space distance itself from the physical community, from a critical mind and from a social ethos. Actions of all kinds are possible, judgments on the corporeality of others without reflections and awareness of the meaning that assumes its own corporeity.

We therefore arrive at the paradox of not understanding how much the body is a “real” and how much is artificial, deriving from the screen. This interferes with the personal way of conceiving oneself as embodied identities, but also with the idea of motor performance, on the meaning of sporting activity. Usually the physical-material component was the most important in defining the identity of the athlete. Today a certain model of athlete is imposed, of an athletic and muscular man, capable of overcoming any limit, who becomes the example to follow for every individual, even those who do not exercise sports at a professional level. But this model is modulated with respect to the new social environments, which show an athlete whose body is to be exhibited, who represents a supermodel, a star and a successful diva, a consumer market product (Codeluppi, 2021, p. 57). Not to mention that the remodeling of the body is not only of a virtual graphic type, avatars, digital filters, but involves artificial interventions on the body-material: interventions on bones, muscles, etc. through substances and tools. They return an identity image of a certain type, of which there is not always full awareness and which does not always represent the result of a free choice. Typical are the situations of body-builders and forms of vigorexia: “Vigorexia is not simply a passion for the gym, but a condition in which the muscle growth of one's body becomes a dominant ideal: physical exercise and sectarian diet, often with an overdose of food supplements or anabolic steroids, mark the day of vigorous person, to the point of overshadowing health” (Lingiardi, 2024, p. 211). Among other things, these problems call into question the new concept of health and psychophysical fitness

that concerns not only athletes, but the wider community. In fact, it appears to be a common and socially widespread goal to want to keep fit through sport, fitness. At the same time, however, it is clear that this objective today responds above all to the need to get closer to the aesthetic canon of perfection proposed by social media, with artificial manipulative interventions that have very little to do with health. Bodybuilding is a sad testimony to this, with even dramatic results (Esposito, 2024).

Social channels therefore give life to a third space between the physical body and the virtual body. It is the space of the possible body, which is also a dematerialized body that seeks consensus: "the real private body advertises itself by transforming itself into a virtual product and public event. If the image, filtered and reinvented, is then acclaimed and followed, if it goes viral, it will also instill greater security in its real owner. It is a collective support mechanism that has an unimaginable impact. Our material body, losing concreteness, becomes a sort of recreational platform. And this new body, in order to exist and be successful, must abandon the value of modesty, of reserve" (Esposito, 2024, p. 78).

Therefore, today there is not only the problem of reducing the sports professional to a 'machine' to be modeled and manipulated, such as the use of doping, to obtain a certain performance. Today the athlete, but also the amateur sportsman, must respond equally to the social models in vogue to acquire space in the image market. Consequently, there is also the difficulty of understanding how important performance is for the athlete as an authentic expression of his commitment and the desire to achieve certain goals as personal self-realization. Often, in fact, the manipulation of the body takes place to improve the virtual identity-image. So, is the athlete's body the result of the will to accomplish the human feat that allows him to feel fulfilled (ethical-educational connotation of sport) or to acquire a certain image? Paradoxically, it can also happen that the goal of getting closer to the virtual image that is pursued is a priority over “material” sports performance. The phenomenon of “window dressing” therefore disrupts the image and sense of the body even in the motor sphere itself, in which material physicality has always expressed itself more. The sportsman's body seems to fit “the aesthetics of the digital screen”. This is the case of the footballer Beckham, never considered among the best footballers, but overpaid being recognized as a sex symbol and star, therefore requested and paid by the various sports brands (Codeluppi, 2021, p. 56). Even some gestures of tennis players, footballers, swimmers, etc., their participation in talk shows, everything seems to refer to a work of building the

image to be spread on the net rather than achieving an effective motor competence. Not to mention the interference of the sports media space in conveying gender and race stereotypes (Uyangoda, 2024, p. 42). In short, we find ourselves within a hybridization between real and virtual, artificial and carnal that the educational-training project with the idea of care for the person cannot avoid. Of course, if a reflection in this sense is a priority in the physical-sports field, it must nevertheless also concern other spaces in which the body identity is revealed and requires the preparation of physical education paths, such as the educational-instructive context, the aggregative-social space, the health environment.

3. Conclusions: new frontiers of body education

Pedagogical science and physical education professionals, faced with the identity upheavals also induced by human life in the new virtual digital environments, certainly cannot have the illusion of understanding the complexity of identity problems and solving them by identifying a decisive motor technique-methodology to rediscover the authentic meaning of man's bodily identity.

The physical education professional, however, can act first of all by reflecting critically on this today condition man; it can “map the new territories” in which every bodily identity is found; it can try to make sense of and redefine boundaries, limits and/or intersections between materiality and immateriality, between virtual, digital and carnal, between going out of oneself and re-entering oneself. That is, it can accompany each subject to become critically aware of his way of being a body and thinking about the body.

Reflection can initially also concern the semantics itself inherent in corporeity to be updated today in the light of different worlds in which man carries out his existence. The lived body of phenomenology, for example, must no longer consider the relationship between the self and the world, but the relationship between me and worlds (Andreoli, 2019, p. 212), while, as already noted above, bio, psyche and environment incorporate the virtual and the artificial-psychic.

Perhaps it is appropriate to accompany the entry into virtuality and artificiality by conceiving them as reworkings of a previous real-material experience acquired and restored, thus seeing in them an aid to living one's own corporeality 'better', without losing contact with physical aspect, with things and embodied bodies and minds (Barone, Cucuzza, Ferrante, 2024). Perhaps, in this sense, Foucault's analysis, his methodology, his way of looking at the body can be a useful support. For

Foucault there is in fact no single truth of the body; there is not even a stable body. It is a body that never exhausts itself, that changes, that comes out of itself, can hybridize but does not lose its immanence (Sforzini, 2019). Perhaps it is precisely within this perspective that a coach, a physiotherapist, a physical education teacher – who want to define themselves as educators or trainers, or facilitators – must place themselves to trace new paths of human awareness with respect to a body as tormented as today's, perhaps a sign of the restlessness and torment of postmodern man. The paradigm of the embodied person must certainly be redesigned today in the light of the digital revolution. In fact, it is not only a matter of acknowledging this, but of going deeper, of trying to take a new hermeneutic, interpretative approach, as a critical education, to understand primarily what awareness each person has with respect to the modification of his corporeality, of the way in which technological devices and artificial intelligence represent an extension or limitation of his body, which is brain-mind, environment. And so it could happen that a critical analysis helps today's torn human identity to find itself in the world as an authentic embodied subjectivity (Fugali, 2022) that is truly plastic, capable of adaptation in a creative, intelligent and free sense. After all, "isn't it the body, the disturbing enigma that alone can decide what we will be able to become?" (Erbetta, 2001, XVI).

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