

FOR A PERSONALISED LEARNING EXPERIENCE. THE RESPONSIBLE USE OF ARTIFICIAL INTELLIGENCE IN EDUCATION¹

PER UNA PERSONALIZZAZIONE DELL'ESPERIENZA DELL'APPRENDIMENTO. L'USO RESPONSABILE DELL'INTELLIGENZA ARTIFICIALE IN AMBITO EDUCATIVO



Elsa M. Bruni

University "G. d'Annunzio" of Chieti-Pescara
em.bruni@unich.it



Patrizia Garista

University "G. d'Annunzio" of Chieti-Pescara
patrizia.garista@unich.it



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ABSTRACT

The human thought exists in a situation of emotional predisposition, defined by Heidegger as a fundamental emotional state. Artificial intelligence aims at calculation for which any emotional intrusion is a hindrance.

The contribution aims to provide a pedagogical and didactic reading aimed at reflecting on the possible contribution of human intelligence, capable of creativity, and artificial intelligence inspired to human brain activity, to the learning personalisation in educational contexts.

Il pensiero umano sussiste in una situazione di predisposizione emotiva, definito da Heidegger come uno stato emotivo fondamentale. L'intelligenza artificiale mira al calcolo per il quale ogni intrusione emotiva rappresenta un intralcio.

Il contributo vuole fornire una lettura pedagogica e didattica tesa a riflettere sul possibile apporto dell'intelligenza umana, capace di creatività, e intelligenza artificiale, ispirata al cervello umano, alla personalizzazione dell'apprendimento in contesti formativi.

KEYWORDS

Human intelligence - pedagogical epistemology – aesthetical education

Intelligenza umana - epistemologia educativa- educazione estetica

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1. The theosis of an emotionally oriented digital pedagogy

The long history of educational processes, from the origins of languages and cultures to *paideia*, *humanitas*, and *bildung*, has always been disrupted by “technological artefacts”. They are the result and product of the daily human exercise of understanding reality and, in a circularity of influences, by chaotic and unexpected events, promoters of transformation and autopoietic generators of new paradigms (Bocchi, Ceruti, 2009; Sini, Pievani, 2020). The theoretical premises of a philosophy of educational experience are anchored in that element of the human factor that has resisted every technological disruption, namely the emotional dimension as the organisation of meaning and integration in every educational practice. Thought exists because it lives in a situation of emotional predisposition, in what Heidegger defined in 1927 as the fundamental emotional state. A state that impedes the progress of artificial intelligence, which only aims at calculation and rigour where any emotional intrusion represents a risk to be prevented. The pedagogical implications appear from this very premise to be decisive as an attempt to transcend old, albeit outdated, dichotomies between human intelligence, capable of creativity and wisdom, and artificial intelligence with ambitions to give birth to machines that learn and, in more evolved terms, machines inspired by the brain through the simulation of human neural networks. The relationship between technology-nature-life-wisdom-ethics spans the last two centuries and is evident first and foremost in the change in post-industrial digital pedagogy following the introduction of digital writing, a partial replacement for manual writing. The digital revolution, by modifying the languages of cultural and educational processes, has refounded knowledge by monopolising, at the hands of its great giants, a large part of people's real and emotional lives. A close look at the changing technological phenomena leads us to simultaneously witness states of passivity and oppression of the “technological” over the human factor and subversive movements of subject formation, also referred to in a recent conference as *realistic utopias*², which respond ecologically and aesthetically to such pervasive disruption.

For some decades, there has been a genuine promotion of investigations that are more attentive to unveiling hidden and submerged dimensions of human cognitive and training processes. This is so true that the treatment of the themes of learning, of educational action, of training in general, has in recent years known original in-

² The oxymoron takes up the title of the technology biennial organised by the Politecnico of Turin entitled “Utopie realiste: immaginare per realizzare un futuro migliore”, Torino, 18-21 April, 2024.

depth studies, linked to the diversified cultural and social framework in terms of cognitive styles.

It is, in fact, since the 1970s that educational, pedagogical, and didactic research, especially the Italian one, has opened to consider the incidence of deeper and more intimate components of the human being, unconscious and affective dimensions, coming to qualify them as inseparable, even determining, from cognitive and logical maturation. The human sciences have been reorganised in a structuralist and philosophical-analytical sense, in a phenomenological and dialectical perspective; pedagogical-didactic epistemology has been moving towards more dynamic lines of analysis emancipated from the procedures of a prescriptive scientificity; the image of “science made of sciences” has favoured the formulation of a scientific method that respects epistemic objectivity but at the same time is open to intersubjectivity; the categories of education and training have freed themselves from the constraints of idealistic and dogmatic investigations and have been refined beyond the pure meaning of linear intellectual maturity; the didactic *operari* has come to terms with the radical need to reflect on its own models of reference, freeing itself from the mechanism of impersonal procedures; the interaction between artificial intelligence and human intelligence has generated questions about the potential but also the risks of automation of people's learning, decision-making, training and transformative processes; the same idea of experience as a founding category of the educational process, Deweyanly understood as “ways of doing and suffering” (Dewey, 1938a), is today profoundly under scrutiny in the face of an elusive reality, in front of and within an irreal space, in which information imposes itself by “hiding” things and their meaning (cf. Han, 2021a; Boden, 2018).

These were the main steps that laid the foundations for reconsidering learning and training processes as an interweaving of experiences, as complex articulations of several dimensions, from the personal to the genetic, from the social to the cultural to the historical, from the rational to the irrational (cf. Lyotard, 1979; Granese, 1990; Laporta, 1996; Mazzoni, 2005, Cambi, 2006; Bruni, 2021a). These are issues that are radically embedded in our cultural, existential, social, identity paradigms. In other words, they are themes and issues that directly condition the ways in which we acquire and make our own knowledge and information and, consequently, elaborate our own visions of the world and of being-in-the-world (Briggs, Burke, 2005).

Certainly, the new digital order has shaken educational reflection and not only, since it has in fact undermined the modern and twentieth-century paradigm,

decreed the miniaturisation of things by entrusting absolute power to information and its technological visualisation. It has in a special way broken the link between the human being and the object world, aiming in intentions and in practice at an extreme improvement of human existence which, however, has lost those anchorages and fixed points that serve as irreplaceable agents in the search for meaning, identity, and the acquisition of freedom and autonomy.

It is evident that the human being today tends to count (data and information) but not to tell, has no historical continuity, but accumulates words and images, learns, and decides on an algorithmic basis without understanding the deeper meaning of things in a frantic attempt to find the most effective information for the convenient fulfilment of the moment. What counts, quoting Han (2021a, 2021b), is “the short-term effect”.

If we shift our attention to the educational sphere (theoretical and practical), we find that the focus has been on didactic efficiency, on the specific organisation of “doing education”, little consideration has been given to the general reflection on the impact of technologies, and also of school practices related to them, on minds, on unconscious dimensions, on intellectual development, especially of children who live in a time invaded and pervaded by technologies, monitored and influenced by the flow of computer stimuli.

In general, pedagogical intentionality has focused on the search for means and methodologies aimed at facilitating the transmission and acquisition of particular knowledge and arithmetic patterns. On the contrary, artificial intelligence requires greater disciplinary competence and deeper critical reflection of processes to be a facilitating factor in educational and training work. While everyone talks and writes about reflexivity and the education of critical thinking, the assumption that learning is simply a mechanical capacity, a pure ability to acquire knowledge by transmission and thanks to the power of memory, returns overbearingly. We must therefore take note of a debt of reason and its technological artefacts towards that aesthetic or techno-aesthetic education (Coccimiglio, Garista, 2020) capable of restoring enchantment, hope and creativity to the formation of the subject-person (Cambi, 2005).

If, therefore, on the one hand there is the social world that attracts by appealing to the power of the emotional and the passionate aspect, on the other hand there is the school world that paradoxically does not oppose a meaningful narrative, but insists on the strength of a cold and impersonal logic applied in both teaching and learning. This is a first problematic element that simultaneously exposes problems

within the two realities, that of social media, technology, and artificial intelligence and that of the formal educational model, the school. It could be said, without fear of exaggeration, that in today's media society both the mass-media world, a tireless producer of "documedial" capital put into circulation (Ferraris, 2014), and the contexts with educational intentionality, in constant tension and in perpetual, not always fruitful effort to modernise the disciplinary and didactic framework, pursue their respective objectives by resorting to linear-mechanistic paradigms that fail to grasp, indeed shatter, the relationship between education, as the acquisition of form and identity of the individual, life lived and the cultural dimension with all its symbolic, ethical and value-based bearing.

2. Knowledge Building and Pedagogical Research. The aesthetic-technological pathway.

What emerges as a basic assumption is that human beings in the technical system are distinguished by virtue of their emotions. No human being constructs knowledge, engages in complex thinking, takes meaningful decisions without emotions (cf. Nussbaum, 2001).

We know, in fact, that "emotion and cognition are supported by interdependent neural processes [...] the brain is a highly metabolically expensive tissue, and evolution would not have supported wasting energy and oxygen thinking about unimportant things. Briefly stated, we only think about the things that matter to us" (Immordino-Yang, 2017, p. 14).

On the other hand, still in the time of Socrates, there was no hierarchy of values and functions between soma and psyche. Plato himself, who was the first to make a clear distinction between body and soul, reason and psyche, mind and senses according to a relationship of dominance of the former terms over the latter, was forced to continually return to the theory that separated and subordinated in qualities and tasks the two parts in man so that the public would understand what was not obvious in his time (cf. Plato, *Phaedo* and *Republic*). At the dawn of Hellenic history, education was the fundamental question that was not consumed in the search for an answer, nor did it fade into obsessive attempts to fix the question in order to find the answer. Paideia as question was substantiated, in the archaic phase of Hellenic history, in the very act of endless questioning, it rested on the essence of the question (cf. Bruni, 2018).

Thought, therefore, feeds on desire and imagination, as a disposition and precondition for its development, and is at the same time nourished by pathos; artificial intelligence follows the obedience of calculation, is deprived of vitality, is apathetic and anaffective. Human thought has evolved in its continuous cycle of experimentation and play with the technological artefacts it has created and on which it has been able to mature a reflexive awareness, to construct realistic pedagogical utopias. The intelligence of the emotions reincarnates the educational experience, therefore, it does not reproduce, but is creative, rhizomatic; capable of criticism and reflection; generating visions of the future.

It goes without saying that such reasoning leads to an analysis of the processes that guide and operate within educational agencies. Which ultimately meant rethinking what happens in the school seen in a new sense as a place of affectivity, of feelings, of relationships that mature over a long time in which people spend many of their years in it.

The evidence that unites the side of scientific research in education and the universe of concrete practices and experiences is the specificity of the engine that drives both, reason and its exercise (rationality) as interpretative and practical criteria, but also the imaginative capacity, of play, the drive that leads man to interact with technological artefacts, creating educational innovations and giving life to the chiasm in which thematization and problematisation of lived experience generate new connections between knowledge and intelligence, the emotional and the artificial.

The task of education and pedagogical research therefore cannot be just to learn how to use technology but to make technology and the emotional state a basic condition of experiencing. "If the educational happening is a process always in the making, since it is the outcome of how practical-social constructs combine and how they take hold on bodies, one cannot, however, ignore the lines of flight of which these themselves are capable and which contribute to giving life to experience and experiencing" (Barone, Brabanti, 2022, p.11). Alongside a carefully designed knowledge-building process there must then be a technological experience understood as "creativity", a dynamo of connections and lines of escape in the spaces of play and proximal learning (Vigotsky) set up by a specifically pedagogical gaze. An educational scene therefore nourished by emotions that becomes a space for expansive learning, where the human mind can conquer new languages and capabilities. In this setting where the virtual forms of knowledge building can be experienced, the participants' educational experiences are historised, steeped in technological artefacts, personalising the interaction, the data, the educational

stories born from the exchange with artificial intelligence. From the narrative of the origins of technology, new stories of reciprocity and interaction are given life, hybridized on the aesthetic-technological path, where emotions become the mediator of that inner techno-artificial language, which can be experienced in a play space, understood as a formative device capable of “liberating” the subject, his potentialities, and not of subjecting him to the risk of shadow and oppression to which artificial intelligence induces him to think. As highlighted in Coccimiglio's volume on the ecology of the technological dedicated to Jacques Ellul (2023), technical creativity (producing artefacts, structuring social strategies, cooperatives) rests on a more original capacity to distance itself from operational praxis. Its use of skills of the imagination capable of opening to reciprocity and interaction, determinants in the processes of knowledge co-generation, capable of visualising the multiple formative directions of a pedagogical proposal.

3. Towards a policy of educational care and accountability of intelligences

Only A philosophy of educational experience should make it possible to leave the *anthropocene*, giving space to the *epoché*, activating new pro-tensions capable of going beyond the automatisms, often induced by the new digital, cultural and psychological technologies (Stiegler, 2012). *Anthropogenesis* and *Technogenesis* are the fields in which to rethink the relationships, dialogues, the link between man and technology, a relationship that, during the emergence, has seen a crushing of the conditioning of technologies against the autonomy of the subject and his formation. According to Stiegler, in fact, today technique is embedded in behaviour, we move from a behaviour assisted by technique to a behaviour dependent on technique (Coccimiglio, 2018, p. 45). Indeed, we might ask ourselves, thinking of the school or higher education context, in how many and which contexts have educational technologies left room for and been supported by an authentic educational relationship?

Stiegler goes beyond Foucault's intention to think of care as an educational device. In his biopolitics, Foucault showed how the communication techniques of the Greek period served both accounting and monitoring functions, but also in the constitution of the Stoic philosopher's “sublimation”, in the constitution of what he calls the techniques of the self, the 'care of the self' (Palmieri, 2000). Stiegler (2014), introducing the reflection on psychotechnology, intends to rethink the relationships between desire and technology; between emotions and the digital.

Through the etymology of the French word *savoir*, he associates knowledge with the flavour of everyday life. Artificial intelligence, on the other hand, presents itself as a possible solution to many activities that burden our daily life, and not only our educational and professional life. Knowledge is what gives flavour: the Latin root of the word knowledge is also the etymological root of the French word *savoir*, meaning taste or flavour. In Latin, having knowledge coincides with having “taste”. Knowledge for life, *savoir-vivre*, requires knowing how to cook, how to drive one's car, how to orient oneself in a landscape without having a GPS system, how to raise one's children, how to knit, how to bake bread. Human life for Stiegler is a life that has flavour. Caring for educational processes and the emotions that run through them is an act of knowledge and 'flavour', as Stiegler would say, characterised by the act of re-enchantment and thus capable of rethinking digital pedagogy in a relationship of care and authenticity (Bradley, Kennedy, 2021).

How then can education synthesise knowledge and tastes? In his text “Taking Care”, Stiegler (2014) addresses the topic of care with respect to relations between generations and with respect to the topic of attention. For Mortari, care and attention must once again be at the centre of educational processes (Idem, 2019). To quote Husserl, she states “to know oneself and transform oneself, it is first necessary to «have in one's gaze, eyes and mind» one's experiences”. This means being capable of attention to oneself: that attention which is expressed as inner concentration (Mortari, 2019, p. 153). In particular, Stiegler specifies that attention is the combination of what Husserl calls *retentions* and *protentions* (Stiegler, 2014). These dimensions determine that relationship with the technological artefact that does not diminish the human factor, the emotional experience. On the contrary, a relationship thus constituted determines the educational interaction dense with meaning and the creative act, capable of invention, thus propelling the evolutionary drive that has always accompanied the history of cultures. Care can thus be understood as that device of pedagogical learning, in which play, and invention can be staged, in which connections and interconnections are generated, new processes of crossing and construction of knowledge (Garista, 2022).

From the horizon traced so far, four perspectives of analysis emerge, interconnected by virtue of the epistemological perspective of complexity adopted, which connote the central aspects from which to move educational planning so that it can be transformed from utopia into the practice of meaning in formal, non-formal and informal educational settings, from an inclusive perspective and supportive of a responsible, ethical, hopeful citizenship.

Scholars such as Antonio Damasio (1994), Howard Gardner (2006) and Martha Nussbaum have shown how emotions are crucial for learning. Emotions connote the educational experiences that require a further step to be transformed into learning: a reflexive rationality, which we take from the model of Dewey's enquiry (cf. Dewey, 1938b), whereby technical rationality and the consequent mechanistic and linear conception of learning are superseded by the reflexive rationality equivalent to the conscious capacity to be critical, to make perplexity the research procedure. Morin develops his pedagogical epistemology (2014, 2017, 2022), in the critique of tacitly pursuing the desire to determine and schematise the complex processes of learning and teaching, opening to the unexpected, to uncertainty, to the aesthetic way in the construction of knowledge. Linked to this debate are the assumptions about artificial intelligence, in its current state of research, in which unlike human thought, it does not conceptualise or problematise knowledge. It is neither discursive nor does it question experience by constantly relating it to the exercise of thought. It aims to accumulate as much data as possible, it produces information that is disseminated in media communication channels that, although not born with the aim of being educational, become main sources of indoctrination.

In the light of these considerations, it is possible to outline possible pedagogical and didactic perspectives in line with the current complexity, attempting to stem the risks inherent in the digital order. It is clear, first of all, that the dualism between knowledge and environment must be overcome, a more realistic communion must be established between codified knowledge, typical of the formal subject areas, and informal knowledge, arising from everyday experience in the environment that each person goes through every day and drawn by the subject through a spontaneous learning process.

Teaching is not simplifying learning. It is not reducing all resistance. It cannot follow the digital process, which aims precisely at ordering and creating the world in the form of images and information that are accessible without obstacles, without effort, without creation. Learning, in fact, implies attention (incompatible with the hyperstimulation of digital communication), stability (incompatible with the absence of anchorage to the things of the world as opposed to non-things, information and data), relationships with the Other (incompatible with the loneliness of repetitive, self-referential relationships devoid of empathy), passion (incompatible with the cold calculation that aims to reproduce itself and which, following the logic of predictability, does not create the new but multiplies the equal), community (made up of body, physiognomy, relationships, ties, contrasts, experience, which forms the Self and puts us in relation with the gaze of the Other).

It ultimately implies a policy and work of care towards the self, towards the Other, towards educational worlds populated by technological artefacts but also by human subjects.

In the domain of the algorithm (Zellini, 2018; Talia, 2021) and in the eagerness to control human behaviour (Zuboff, 2019) within the current real that is now an expression of subjective constructions produced in quantity within media platforms, the focus is more directed towards the side of how to educate the “machine” and create learning systems, in order to improve human performance, than on the side of how and why to educate humans (Cf. Buckingham, 2009; Pedró, Subosa, Rivas, & Valverde, 2019; Rivoltella, Rossi, 2019). Artificial intelligence, and even more so Machine Learning, following the reasoning of this contribution will never be able to replace the free construction of knowledge generated by reflection, improvisation, personal participation in truly lived and shared spaces and places, creativity, and the subjective artistic dimension (Cf. Bruni, 2021b).

From this point of view, research, especially in neuroscience, neurobiology, and the development of artificial intelligence itself, have sanctioned the overcoming of traditional views of the mind, in particular its relationship with the brain. Indeed, it is accepted that cognitive capacities do not constitute an absolute guarantee for human and professional fulfilment, least of all if these capacities are the result of programmes, automatisms, memorisation, algorithms. Education is a complex process, impossible to perimeter and simplify. It passes through the communion of plural alphabets and a new, more articulated encyclopaedia of knowledge, which account for the transformative dynamics taking place and which, above all, respond to ways of thinking and living conceived as exercises in constant research. It is misleading and counterproductive to limit the issue of education to mere disquisitions around the possession of specific skills, of packages of knowledge deemed necessary, perpetuating the myth of a “domesticating education”. The profound need of this time and the people of our time lie in the redefinition of an all-round intellectual education.

An education in complex thinking, which passes through a new digital pedagogy and profoundly rethought didactic, becomes the medicine for the practice of confrontation, openness, decentralisation, discussion, critical deepening that opposes uniformity, the search for polyphonic hypotheses to build and experiment new and different approaches.

The qualitative leap can be given by the ability to integrate the disciplinary acquisitions with the emotional dimension of each one, to keep “heart”, “spirit”

and “hand” united, to recall Pestalozzi (1781-1787; 1825), encouraging a harmonious development of the body, soul, and spirit, resorting to methodologies based on exercise and relationships between educator and learner based on affectivity and free creativity. On the teaching side, it is care and relationship that become qualitative dimensions of educational action³.

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³ In addition to the national studies, in particular by De Monticelli (2012), Cambi (2015) and Bonetta (2016, 2017), Bruni (2019, 2022), the work of Heather A. Davis (2003), M.H. Immordino-Yang and A.R. Damasio (2007), P. Prinsloo (2017).

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