

Extended educational models: the extension of technological and multidimensional knowledge. Educating for Artificial Intelligence, conscious processes, and a revolutionary approach.

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Abstract: The ongoing search for methods and models capable of deeply understanding human expectations and needs drives human ingenuity to interpret social and contextual dynamics into intelligent solutions and concrete tools. This goal leads to a pursuit of subjective and collective well-being, seeking technologies that not only respond to needs but also anticipate them by sensitively interpreting them. This scenario informs the purpose of this work, which seeks to understand how social inferences, arising from environmental relationships, can flow into automated yet conscious responses to socio-contextual stimuli. The creation of conscious and comprehensive feedback, within a constant experiential flow, is a key factor in optimizing relational processes.

This work aims to systematically examine the effects of human-AI interaction, focusing on their educational potential and their influence on the processes of perception and interpretation of environmental inferences. We will explore how AI contributes to restructuring cognitive models and meaningful decoding practices, impacting contextual representations and the ways in which individuals process, filter, and make sense of information from the socio-digital world, thus modifying its scope and extending it to forms and areas of multi-educational meaning.



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Introduction

The perennial and constant flame that nourishes knowledge moves and originates from curiosity for innovation, taking shape through social inferences and building itself around and for humanity. The path that has led humanity to structure itself by evolving alongside change has been permeated by indulging human curiosity and desire in an evolutionary process that has led us to positively transform ourselves

as well. What the environment has revealed, between transmitted stimuli and socio-environmental influences, has been interpreted and decoded by humanity, according to contextual-cultural adaptations that have transformed concepts into mental extensions structured around various common and easily shareable characteristics. Today, society is immersed in a process of total and continuous change, supported by the unstoppable growth of digital technology and its artifactual articulations, which arise from the constant environmental implications and their possible individual interpretations. The crucial role of these technologies is slowly transforming human relationships and their interactions, shaping processes and products. These characteristics are becoming tools for a conscious sharing of knowledge that unites cultures, becoming the cornerstone of an effective and shared digital revolution.

1. Extended social transformation and learning environment

The integration of technologies to support decision-making processes requires a structured strategy capable of managing change and its social and organizational implications. This transformation, fueled by the constant human drive for innovation, aims to foster balanced development between individual and collective needs. Society has progressively refined its capacity for adaptation, incorporating technologies through processes of verification and evaluation of the effects of their large-scale deployment.

This process of informal reading represents a significant element, which cannot be overlooked or considered marginal (Lorenzoni, 2024). Individuals must be ready to construct a new identity, a representation of themselves that does not conflict with the cognitive models provided digitally.

Artificial intelligence confronts the intrinsic complexity of educational systems, highlighting the need to comprehensively consider every dimension of knowledge acquisition, even those aspects not immediately observable. This scenario presents AI as the engine of a complex yet dynamic ecosystem, in which access to knowledge is mediated by advanced technological devices.

If and for these reasons, the supporting structure of knowledge acquisition mechanisms passes through the phenomena of contextual and phenomenal adaptation, the core of automation inferences passes through an algorithmic analysis that identifies and decodes the inputs received (Marchesani, 2024).

The cornerstone of generative AI are all those sophisticated algorithms that focus their work on the ability to learn data and the ability to make precise decisions in a short time. According to Floridi (2023), some essential characteristics can be highlighted that make AI an extension of human functions and a diverger of all the variables involved. Therefore, the preeminent and functional aspects can be briefly highlighted:

- Intelligent automation: AI enables the creation of complex task processes that relieve individuals of unnecessary workloads, allowing them to focus on more complex tasks;
- Personalization of experiential scales: procedures for analyzing personal interests and needs create fertile ground for personalizing experiences that facilitate positive learning based on a person's unique characteristics;

- Development of data-driven decision-making systems: the ability to examine and process infinite amounts of information in real time, providing the necessary responses for strategic decision-making;
- Improvement of operational and structural efficiency: in the education sector, this aspect allows for the optimization of educational practices, leading to improved quality of artifacts produced by contextual relationships;
- Innovation in human services and products: AI itself is giving rise to a new generation of products that can be defined as "intelligent," transforming not only the education sector but also all other sectors that contribute to building social identity.

Fully realizing the untapped potential of digital technologies requires a systematic commitment to transparency in the design and deployment of algorithms, leading to sensible safeguards and careful management. This vision offers the opportunity to develop truly effective, intelligent solutions that shape the social fabric (Xwnag et al., 2024).

A container ready to be filled with an infinite amount of data from diverse sources and capable of filling the gaps left by the cracks arising from a misinterpretation of reality itself. And the use of Big Data plays a central role in social evolution, becoming the engine of strategic decision-making (Zuccari, 2025).

The analysis and coexistence of infinite quantities of data requires the design of strategies that use Big Data structured around some key points that provide an account of the elements necessary for the completion and satisfaction of the pre-established objectives:

- Defining clear guidelines and objectives for analyzing the questions to which concrete answers are sought and the potential problems to be solved;
- Building significant investments in technological infrastructure to ensure a repository (electronic warehouse) for the storage, processing, and analysis of large amounts of data that constantly interact with feedback from the environment;
- Placing data quality management at the center of the process to minimize errors while ensuring data integrity and validity;
- Promoting a technological society because the future is created through approaches that are built and evolved for and with the data transmitted via technology.

In the digital age, data and its correct administration and delivery become the most valuable resources for leading society towards an innovative and competitive path, for a digital transformation that is highly stimulating and comprehensive (Crawford, 2021).

From a simple automation device, AI has transformed into a complex algorithmic ecosystem capable of adapting to different social nuances, learning from them, formulating hypotheses, and making decisions to resolve issues (Numerico, 2021). The debate shifts to contrasting visions: some analyze the uniqueness of the human essence as irreplicable, while others are open to a vision of digital humanities as increasingly pervasive and influential in society. A phenomenon shaped by ideologies, intrinsic values, and even economic interests dictated by power dynamics that identify its soul and fundamental structure (Feenberg, 1999).

The machine has the task of caring for and accompanying man towards unexplored areas, it must not replace him, trying to emulate him in his main functions,

concretely observing the nuances that substantiate the human character to try to get closer to the very essence of human nature.

2. Representation of the world between knowledge and technological reality

The field of reflection on the creation of technological artifacts leads us to think not only about the ways in which the device interfaces with the environment and the humans who experience it, but also in reference to the evolution between human intuitions and technological devices. Talking about creativity presents us with big questions arising from its complex nature, and from the difficulty in defining it associated with the complex structure of AI.

It traverses and connects heterogeneous spheres of human experience, taking the form of a random faculty, indeterminacy, and an ineffable nature. Due to this semantic openness, the concept becomes fluid, non-definitive, constantly immersed in a nuanced dimension that is difficult to interpret (Bartezaghi, 2021).

A cognitive process that develops with the origination of brain activity for the personal adjustment of emotions, an inner feeling that emanates and takes shape from the countless internal impulses that the individual must manage and control. The creative process, even in the technological field, is never a single or isolated act, but a gradually evolving exploratory journey, a process of constructing and reformulating everything that has been built.

An alternative reading to the classic consideration of creativity is offered by the paradigm of the trialogical theory of learning and creativity. The vision of a trialogical approach to learning (TLA) (Paavola & Hakkarainen, 2005), as opposed to monological and dialogical approaches, emphasizes the construction of shared products where comparison and experimentation become necessary and fundamental. The preeminent aspect appears to be the ability (TLA) to integrate multiple levels of learning: personal, collaborative, and contextual. Therefore, the process that makes creativity influential in a social context (Lakkala et al., 2012) occurs when moments of individual reflection are combined with moments of collective construction in relation to what happens externally.

It is emphasized that this principle highlights how the creative process emerges not only as a generator of new ideas and thoughts, but above all as the ability to revise and reformulate knowledge differently. AI plays a crucial role in all of this, reworking and decoding content, and at the same time, it complements it, offering various cues to amplify the co-construction of ideas and content.

The machine's ability to develop very high levels of positive meaning takes on a fundamental importance in the debate between diverse fields and sectors of the same nature. These fields of differentiated relevance lead us to consider, and question, whether machines are themselves endowed with consciousness, or are merely automated extensions structured and programmed by the human factor.

Considering AI as a conscious entity, particularly one capable of creating a representation of the world according to an individualistic vision, has long been a matter of debate. The debate shifts to whether AI can act according to a singular formal aptitude, often guaranteeing satisfactory responses to humanity. Today, this should not be considered merely a dream or a technological illusion, but rather a key interrogative for the development of modern society. Despite this theoretical uncertainty, the human desire to design artificial systems capable of perceiving, processing, and displaying forms of awareness similar to those of humans persists, highlighting the

difficult balance between the human phenomenon and the technological ambition to reproduce it.

Consciousness itself is defined as the ability to reflect on one's own existence and how it affects the surrounding environment to a greater or lesser extent through emotions, thoughts, and sensations. It integrates irreducible subjective states that seem impossible to replicate through algorithmic analysis alone. Neuroscience, however, subsequently highlighted how mental activity does not emerge from our consciousness but is the result of a cognitive process originating in our automatic processor, the brain, in a space-time continuum with emotions.

Being directly involved in research and the possibility of endowing with consciousness a tool many define as "cold" due to its natural implementation in the surrounding context, raises questions about the relationship between access to consciousness and qualitative consciousness. The former refers to the availability of information for cognitive processing, while the latter encompasses the individual subject's experience associated with mental states and cognitive styles. This allows us to pause and analyze the fact that the machine, thus structured, could process information without necessarily testing it qualitatively. And this is why it is important not only to process information, but, while processing the information, to try to understand what the moral effects of such a response might be.

If we consider the technological device capable of generating feelings, considering them in terms of the situations encountered, similar to our own, it would irreversibly trigger a disruption of the normal relational functions that comprise social activities created with other individuals. Relational patterns designed for sentient entities would be created, distorting existing social relationships through unnecessary forms of social interaction. The risks of a futuristic vision, of a rethinking of moral and ethical rights, which do not address exclusively human units, could cause an alteration of society itself. Therefore, it is important now to proceed cautiously and responsibly to avoid being overwhelmed by such conflicting feelings.

Creating and equipping AI devices with consciousness, if possible, raises serious ethical challenges. First, thinking of AI devices as sentient leads to considering and guaranteeing rights for the machine, just as those granted to human beings. A system endowed with consciousness and sensitive to multiple socio-contextual dimensions should not be interpreted as a complex and potentially problematic project. Critically analyzing possible scenarios allows us to leverage strengths and mitigate weaknesses, thus promoting a use of technology geared toward constructive and responsible outcomes.

3. Contextual awareness and augmented technology teaching

A society that fully immerses itself and builds its foundations in technologically influenced environments grows and develops according to cultural modalities and processes for the responsible use of hypermedia devices. The intrinsically multidisciplinary origin of AI promotes a substantial acceleration in the integration of humanistic and scientific cultures. This transversality creates a positive mix between mechanical automation systems and human-derived cognitive-sensory apparatuses.

Learning from everything that comes from the external environment, reasoning according to processes that originate from logical rules, perceiving thanks to mechanical sensors to carry out complex actions autonomously by communicating with

the surrounding environment according to linguistic forms shared by the environment, become the hallmarks of a total revolution in the technological world.

The exponential evolution of AI in recent years highlights the ability of contemporary societies to adapt to a rapid pace of technological development, capable of redefining both the present and future prospects. Mechanisms such as machine learning, generative AI, and natural language processing have introduced new forms of automated interaction, generating interpretative and operational models that contribute to the construction of the world through a continuous flow of algorithmic exchanges and inferences.

The construction of genuinely organized knowledge depends on the human race's ability to engage with devices through a shared and understood language. This key concept, even in the educational field, has led to the deconstruction of methodological canons based on the passive relationship between machine and human.

A process of emulation is leading AI proponents to reconsider the principles of that admittedly high-performance ecosystem, Generative AI. The automated nature of machines, driven by an information decoding system that utilizes all descriptive, structural, and identifying elements, requires society to move along parallel paths—paths that measure the consistency of knowledge and its similarities across diverse environments. On the other hand, it must weigh the influence of sensations, prior knowledge, and emotions in constructing shared and pervasive knowledge.

By creating short sentences that serve as external stimuli (prompts), AI can generate complete sources such as texts, essays, documents, letters, and anything else useful for providing concrete and complete responses to the stimuli received. To support this entire scenario, AI devices can emulate associative memory mechanisms, leveraging an algorithmic analysis process that identifies similarities and inconsistencies, allowing the machine to obtain values very close to the observed stimuli by replicating them for almost all of them.

The natural approach to adopting the innovations proposed by AI requires an experimental and exploratory framework. The school laboratory environment allows us to recognize the importance of an educational ecosystem for future generations, investing in the training of all internal resources within the institution to ensure an adequate understanding of the importance of these devices for contemporary education. The connection created through dialogue opens up new educational scenarios, enabling the personalization of content tailored to individual needs. Contact mediated by technological tools can create collective work opportunities, fostering a shared process of content analysis and decoding of received information.

The role of the teacher is shaping itself towards a new form of teacher-guide, best conducting the work of active exploration and experimentation that are the basis of conscious and satisfying teaching. However, it is necessary to observe the possible limitations of a knowledge-sharing process, as Floridi (2024) argues:

- Personal data protection, where the need to safeguard the rights of those who use technologies to share, create, and manage information makes data entered into devices easily acquired without any protection;
- Content transparency, allowing users to gain insight into what the machine represents as its final function;
- Response reliability, where the process of hallucination is used to define a learning deficit due to insufficient sources in the field or an initial bias toward a particular content;

- Inappropriate use of dialogue, where the unauthorized use of information obtained from dialogue can lead to forms of knowledge construction that disregard the sources from which the concept was derived;
- Individual responsibility, where each individual using AI devices is responsible for the artifacts produced by the machine at their request.

We need to look to the future with great optimism, take our destiny by the hand and revolutionize it, dressing it in authenticity and creativity. Creativity is the awareness of those who show themselves through different guises, which exhibit themselves according to the transport of the moment, reflections, and environmental influences.

Conclusions

If we consider how the technological universe unfolds and changes based on the cultural challenges it faces, and in this scenario, responsible use becomes essential for the creation of artifacts that do not distort the objectives they foster. New tools for machine learning, generative AI, and that ever-evolving dialogue open up new and interesting yet still entirely untapped scenarios. The technological fields of reference for AI represent everything that can be envisioned as a convergent soul between everything that constituted the humanities and sciences in the past. This univocal position will tip the balance in the direction that will lead us to a realignment of social functions, capable of regulating the actions performed through technological devices. Functions created to pursue and satisfy solutions aimed at social well-being, capable of concretely offering adaptable and functional products. In a positive vision of the future, it is essential to look around and hope that the educational innovation of AI devices will leave a tangible mark and support a new general culture, one built on the deepest human values.

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