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Taxonomy of collaborator roles (CRediT)

In the context of research and scientific publications, the CRediT Taxonomy (Contributor Roles Taxonomy) is a standardized system used to classify and acknowledge the specific contributions of authors and collaborators in the research process and the development of scientific articles. The aim of this system is to promote transparency, equity, and proper recognition of the roles performed by each collaborator in scientific production.

Contributions

The author and their collaborators must explain the contributions made during the research process and the results achieved, in accordance with the guidelines outlined in the CRediT Taxonomy.

The CRediT Taxonomy includes 14 roles that can be used to determine the specific actions performed by researchers in the process, structuring, and presentation of research results.

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Distribution of participation roles through which an author can receive recognition in the publication (CRediT Taxonomy)*

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2. Data Curation	Management activities for annotating (producing metadata), cleaning data, and maintaining research data (including software code when necessary for data interpretation) for initial and later reuse.	https://credit.niso.org/contributor-roles/data-curation/ ID: f93e0f44-f2a4-4ea1-824a-4e0853b05c9d
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6. Methodology	Development or design of methodology; creation of models.	https://credit.niso.org/contributor-roles/methodology/ ID: f21e2be9-4e38-4ab7-8691-d6f72d5d5843
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Criterion	Description	Identification
9. Software	Programming, software development; design of software programs; implementation of computer code and supporting algorithms; testing of existing code components.	https://credit.niso.org/contributor-roles/software/ ID: f89c5233-01b0-4778-93e9-cc7d107aa2c8
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*The CRediT Taxonomy is applied to cases of documents or publications created by multiple authors; its purpose is to specify the type and extent of each collaborator's contribution in a multidisciplinary and collective work.

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The authors give credit without omission of any author and specify their contributions according to the CRediT Taxonomy (CRediT Taxonomy).

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Taxonomía de roles de los colaboradores (CRediT)

En el contexto de la investigación y las publicaciones científicas, la Taxonomía Credit (CRediT, siglas de *Contributor Roles Taxonomy*) es un sistema estandarizado para clasificar y reconocer las contribuciones específicas de los autores y colaboradores en los procesos de investigación y en la elaboración de artículos científicos. Este sistema tiene como objetivo promover la transparencia, la equidad y el reconocimiento adecuado de los roles desempeñados por cada uno de los colaboradores en la producción científica.

Contribuciones

El autor y sus colaboradores deben explicar las contribuciones que efectuaron en el proceso de la investigación y en los resultados alcanzados considerando la normativa expuesta en la Taxonomía CRediT.

La Taxonomía CRediT, incluye 14 roles, que se puede utilizar para determinar las acciones específicas que desempeñan los investigadores dentro del proceso, estructuración y presentación de los resultados de la investigación.

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Distribución de los roles de participación mediante la que un autor puede tener el reconocimiento en la publicación (Taxonomía CRediT)*

Criterio	Descripción	Identificación
1. Conceptualización	Ideas, formulación o evolución de metas y objetivos generales de investigación.	https://credit.niso.org/contributor-roles/conceptualization/ ID: 8b73531f-db56-4914-9502-4cc4d4d8ed73
2. Curación de datos	Actividades de gestión para anotar (producir metadatos), depurar datos y mantener datos de investigación (incluido el código de software, cuando sea necesario para interpretar los datos) para su uso inicial y posterior reutilización.	https://credit.niso.org/contributor-roles/data-curation/ ID: f93e0f44-f2a4-4ea1-824a-4e0853b05c9d
3. Análisis formal	Aplicación de técnicas estadísticas, matemáticas, computacionales u otras técnicas formales para analizar o sintetizar datos de estudios.	https://credit.niso.org/contributor-roles/formal-analysis/ ID: 95394cbd-4dc8-4735-b589-7e5f9e622b3f
4. Adquisición de financiación	Adquisición del apoyo financiero para el proyecto que conduce a esta publicación.	https://credit.niso.org/contributor-roles/funding-acquisition/ ID: 34ff6d68-132f-4438-a1f4-fba61ccf364a
5. Investigación	Llevar a cabo un proceso de investigación y exploración, específicamente realizando los experimentos o la recopilación de datos/evidencias.	https://credit.niso.org/contributor-roles/investigation/ ID: 2451924d-425e-4778-9f4c-36c848ca70c2
6. Metodología	Desarrollo o diseño de metodología; creación de modelos.	https://credit.niso.org/contributor-roles/methodology/ ID: f21e2be9-4e38-4ab7-8691-d6f72d5d5843
7. Administración de proyecto	Responsabilidad de supervisión, gestión, coordinación y liderazgo de la planificación y ejecución de las actividades de investigación, incluyendo la tutoría externa al equipo central en el caso de existir.	https://credit.niso.org/contributor-roles/project-administration/ ID: a693fe76-ea33-49ad-9dcc-5e4f3ac5f938
8. Recursos	Provisión de materiales de estudio, reactivos, materiales, pacientes, muestras de laboratorio, animales, instrumentación, recursos informáticos u otras herramientas de análisis.	https://credit.niso.org/contributor-roles/resources/ ID: ebd781f0-bf79-492c-ac21-b31b-9c3c990c

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Criterio	Descripción	Identificación
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The philosophy in times of digitization

La filosofía en tiempos de la digitalización

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Editorial

A categorical approach to philosophy in the age of digitalization

Humanity is going through a period marked by what is known as "digital ubiquity and algorithmic protagonism," in which philosophical inquiry requires us to rethink some fundamental questions, such as: How can we preserve ethical integrity, the formation of critical subjectivity, and a sense of community when artificial intelligence (AI) is redefining the human experience? For a better understanding of the contextual reality, it is necessary to briefly explain the categories mentioned above.

On the one hand, *digital ubiquity* refers to the constant, invisible, and cross-cutting presence of digital technologies in all areas of everyday life. It is important to understand that this is not just about access to the internet or devices, but also involves deep integration into learning, communication, work, emotional, entertainment, and leisure environments. This transforms the way we experience the world and relate to others. As Floridi (2021) argues, we live in an "infosphere" where the digital is no longer an environment, but a lived reality.

In the context of advanced digitalization, digital ubiquity not only describes the technical availability of connection anywhere and at any time, but also a way of life deeply mediated by devices, platforms, and computer systems that structure our daily actions. This phenomenon involves the dissolution of the boundaries between the physical and the virtual, and shapes a new way of existence marked by constant connectivity. As Byung-Chul Han (2014) states in *The Transparency Society,* "we no longer inhabit the world, we navigate it," which leads to an experience of the real as an interface, as an uninterrupted flow of data that must be interpreted, shared, or reacted to immediately.

This permanent hyperconnection is linked to what Antoinette Rouvroy (2013) calls "algorithmic government," i.e., a form of power that is not based on classical legal norms or Foucauldian panoptic surveillance, but on statistical prediction and behavioral anticipation. Instead of prohibiting or commanding, algorithms operate on probabilities, predict behaviors, and adapt digital offerings in terms of content, routes, deci-

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sions, and even emotions, without the need for visible coercion. This form of power, as explained by Rouvroy (2013), "operates in the preconscious," nullifying the very possibility of autonomous deliberation.

On the other hand, *algorithmic protagonism* refers to the growing role of algorithms as agents that mediate, filter, and anticipate our decisions, tastes, movements, and interactions. These systems not only organize information, but also govern experience. From social media to personalized education systems, algorithms have become invisible structures of power that condition what we see, think, and choose, raising urgent ethical and philosophical questions.

Algorithmic protagonism refers to the central role these resources play in the organization of knowledge, the management of attention, and the production of subjectivities. Platforms such as Google, YouTube, Instagram, TikTok, and the systems used in education personalize the experience to such an extent that what one sees or learns no longer depends on personal choice, but on predictive models. This, as Noam Chomsky (2011) warns, poses a paradox because while we are promised freedom and individualization, structures of ideological control are reinforced. In his critique of digital capitalism, Chomsky (2011) points out that large technology corporations not only sell products, but also "sell users to advertisers," turning our interactions into raw material for symbolic and commercial exploitation that gradually displaces people's consciousness.

Thus, the convergence of digital ubiquity and algorithmic protagonism demands a philosophical response that is not limited to a "technophobic" rejection or a naive celebration of innovation. As Han (2014) argues, it is a matter of recovering negativity, silence, and slow thinking in the face of information overload and the compulsion for positivity and exposure. For Rouvroy (2013), the challenge is to restore the "spaces of subjectivation," i.e., areas where the subject can reflect and act outside of algorithmic calculation. In other words, thinking critically about the digital age means understanding how technology reconfigures ethics, politics, and pedagogy. In this sense, philosophy is not a peripheral knowledge, but a condition of possibility for questioning the present and opening horizons of meaning beyond automated efficiency.

About the content of the journal

This issue of *Sophia, Philosophy of Education Collection,* is framed in a context where digitalization is not only a functional tool, but an *ontological*

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transformation that redefines knowledge, experience, and subjectivity. Technological acceleration, marked by the expansion of AI, has generated a profound reconfiguration of the ways we learn, teach, and inhabit the world.

Faced with this scenario, philosophy is essential for critically reflect on the processes that, in the name of progress, blur the boundaries between the human and the world of machines, between the educational and the technical. Likewise, the philosophy of technology becomes essential for understanding the meaning of technological reality and its implications in all areas of human existence.

Therefore, the main objective of *Sophia* 39 is to philosophically investigate the implications of digitalization, problematizing the role of ethics, subjectivity, language, education, and power in an environment mediated by intelligent technologies. This task is urgent, as the ideal of a neutral and universal technology—still present in many digital narratives—omits the ideological, epistemic, and affective conditions that shape our contemporary experiences. As Heidegger (1954) warns, technology is not merely an instrument, but a way of unveiling the world: "The way in which truth happens" (p. 19). In this sense, thinking about digitalization implies questioning the ways in which reality is revealed (and hidden) through technological mediation.

To fulfill the stated purpose, it is necessary to reclaim philosophy as an instigator of questioning in the face of digitization, which promises efficiency but overlooks human fragility. We must keep alive the question: Who are we as individuals and communities when the virtual predominates? Critical philosophy of technology—heir to Kant and Foucault's *pensée* critique—thus takes on a refreshing urgency and invites us to rethink the role of ethics in the face of automation. It leads us to consider how to delimit the field of AI from the human *ethos*, and to rethink who thinks when thinking digitally, how is subjectivity mediated by technology configured? How can we explain the dialogue between subjectivity and the phenomenology of technological existence?

We live in a time when digitalization is not only transforming social, economic, and educational practices, but also reconfiguring ways of thinking, inhabiting the world, and being. Philosophy, as a critical exercise in understanding and meaning, cannot remain oblivious to this technocultural restructuring. Faced with the rapid advance of digital technologies (mainly AI), there is a need to think philosophically about the limits, conditions, and possibilities of this transformation that affects both knowledge and subjectivity.

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Digitization raises new questions, but it also reactivates other fundamental questions, such as: How can we form critical subjectivities in a culture of algorithms? What place does ethics occupy when decisions are delegated to intelligent systems? How can we preserve ethical integrity, the formation of critical subjectivity, and a sense of community when AI redefines the human experience? How is the educational experience transformed in environments mediated by intelligent technologies? Does the school educate citizens or train docile users of algorithmic platforms?

The urgent need is to understand that the current scenario requires immediate contributions from digital education, in which schools play a leading role. This requires training and educating critical teachers who recognize the role of technology without losing sight of the educational mission; promoting interdisciplinary spaces to rethink otherness in digital contexts, taking into account the presence of others and avoiding pure labeling; deepening a philosophy educated in contingency (not in immediate access), thought out from error, delay, and deep reflection; understanding technological agency, the meaning of the body in virtual environments, and the role of the teacher as a figure of otherness in the face of increasingly naturalized AI.

The importance of the theme proposed in this issue of *Sophia* lies in its philosophical and educational relevance. In times when algorithms and language models increasingly mediate our decisions, emotions, and knowledge, philosophy faces the challenge of preserving its critical power without succumbing to technical fascination or reactionary rejection. Byung-Chul Han (2014) warns of the disappearance of negativity in the digital age, a logic of performance and transparency that excludes conflict, silence, and otherness as foundational moments of thought. In this context, the main issues revolve around how AI redefines the conditions of learning, teaching, and living; how subjectivities are formed in this new horizon; and what place ethics occupies when the limits of the human are displaced by machines that reason, dialogue, or even appear to have consciousness.

The ten papers approved for this edition explore these concerns from multiple approaches and trends. Some focus on the teaching of ethics as a limit to the power of AI, while others analyze the configuration of subjectivities through algorithmic platforms. Issues such as the feasibility of the Turing machine child, the role of *prompting* in the phenomenology of artificial language, the challenges of learning in the face of automated heuristics, and the frictions between personal development and digital optimization environments are also addressed. Special atten-

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tion should be paid to the texts that examine the devices of power in socio-emotional education, the youth experience of social media and the internet, and the transformations in teachers' perceptions of otherness in the age of AI. Taken together, they all warrant a rethinking and new research in pursuit of the construction and consolidation of knowledge.

The articles are divided into two sections of the journal: five articles related to the central theme and five articles in the miscellaneous section, whose reflections on the central theme contribute to the enrichment of the philosophical debate in this volume.

In the central theme, the reflection begins with the article "The question about ethics teaching as a boundary of artificial intelligence" by Alejandro Recio Sastre, from Ecuador, who sets out to answer the question: how can ethics be taught in a world where decisions are mediated by intelligent systems? He establishes ethics as the limit to AI without conscience or responsibility, arguing that "education faces great challenges in the face of the changes that ICT and AI are bringing about in social relations." The aim of the article is "to propose a theoretical approach that discusses the problems raised by transhumanist theses within education, given the current challenges posed by AI in relation to the learning of values."

The intellectual journey is undertaken by Hernando Barrios Tao, from Colombia, who presents the manuscript "Configuration of subjectivities through artificial intelligence systems," in which he argues that "artificial intelligence (AI) was configured as a system that impacted ways of being and existing, with the potential to invade the innermost being of human beings and reconfigure them in their social, ethical, identity, and ontological dynamics." The objective of this document is to "interpret the configuration of subjectivities through AI systems." It aims to analyze the construction of the self in the age of platforms and, in this vein, seeks to answer the question: What configurations of subjectivity emerge when identities are shaped by algorithms?

Along the same lines is the document "The feasibility of Turing's child machine" by Rodrigo Alfonso González Fernández, from Chile. The author analyzes the child machine project linked to programmed machine learning or digital computers, "showing that Turing's desideratum is not achievable through algorithms." He analyzes the reasons that "prevent the MT child from becoming a thinking adult mind" and presents an interesting analysis between the Turing test and simulation pedagogies. The text seeks to answer the question: is it possible to consider the feasibility of Turing's child machine in educational contexts?

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For his part, Jorge González Arocha, from Serbia, presents the article "Critical phenomenology of prompting in artificial intelligence," in which the author analyzes "the philosophy of *prompting* as a tool in the context of the rise of AI, particularly in large-scale language models (LLMs)." He seeks to explain how *prompting* is a mediating space between human intentionality, language, and the sociopolitical structures that shape interaction with these technologies. The main objective is to "examine how *prompting* reflects ethical, ontological, and epistemological tensions that emerge in the construction of meaning within AI systems." The author considers that "it is essential to adopt an interdisciplinary approach that combines technical development with philosophical reflection." By understanding *prompting* as an act of meaning, language, and power, the question it seeks to answer is: what does a critical phenomenology of *prompting* in AI reveal?

Next, authors Néstor Alexander Zambrano-González (Brazil) and Jordi Vallverdú Segura (Spain), in the article "Challenges of learning in the age of artificial heuristics," examine the keys to developing a comprehensive model of human cognition from a philosophical-educational perspective. They consider variables such as the multimodality of knowledge, the complementary role of languages, the imitative sensorimotor foundation, and the main role of imitation in learning and cognitive development in the early stages of life. The text reviews the impact of AI-based educational *chatbots,* using ChatGPT as a representative case study; it addresses the challenge of thinking beyond automated recommendations and attempts to answer the question: what does learning under the mediation of artificial heuristics imply?

In the miscellaneous section, the article "Friction and personal development in digital environments" by Iago Ramos Fernández from Spain discusses "how the 'lack of friction' in digital environments affects personal development." Friction is presented as a condition that forces us to come to terms with our limits and find our place among others. This approach is taken from Rousseau's anthropological theory, specifically the dichotomy between negative and positive education, i.e., the differences between a formative process that forces us to be aware of our existence and a formative process that dilutes us into cultural products. The question it seeks to answer is: where do friction, error, and resistance fit as conditions of human development in hyper-optimized environments?

Next the article "Captures and ruptures in the power dispositive of social-emotional education" by Francisco de Borja Castro-Serrano and

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José Miguel Garay Rivera, from Chile. The authors critically reflect on the current educational institutionality in light of how power is organized in society. The aim of the paper is to "examine, philosophically, the social field and the notion of dispositive based on Deleuze's reading of Foucault, opening up an analysis of power in education tensioned by its classic plot of capture vs. a potentially critical and transformative path via escape." The education-emotions binomial opens other "educational cartographies" for thinking about knowledge and ways of intervening in the emotional sphere, assessing the management of affects, their mechanisms of power, but also, their critical ethical-political openings. In analyzing affective capture and the management of subjectivity, they propose to answer the question: How do power dispositive operate in digital social-emotional education?

The article "The relationship between young people and social networks in virtual spaces" by José Rolando Alegría-Morán, from Chile, continues this line of reflection. The author recognizes the importance of "the phenomena of the internet in the development of individuals, understanding that a large part of everyday actions are mediated by virtual elements." The objective is to explore the possibility that today's young people view their social networks as spaces that can be inhabited and not as technological tools valued for their usefulness and user experience. By understanding virtuality as an existential territory, the document seeks to answer the question: What does it mean for young people to inhabit social networks as an extension of the world?

The manuscript "Teachers' perceptions of otherness in the age of artificial intelligence" by Ricardo Alberto Reza Flores (Mexico), Rosa Maria Vicari (Brazil), Cristiano Galafassi (Brazil), and Mireia Usart Rodríguez (Spain) continues the reflection process. The authors consider the need to recognize the "other" in their uniqueness from the perspective of otherness to establish meaningful social bonds, especially in teaching. The objective of the manuscript is to "assess, from the paradigms of higher education teachers in Mexico City, how they recognize otherness and its possible existence in AI." It is established that from post-human nomadism, otherness could be understood in the future with "general AI" or "super AI," as organic, artificial, or hybrid. In this regard, considering otherness in times of dematerialized interaction, they propose to answer the question: How do teachers perceive others in an era where the artificial simulates humanity?

The volume closes with the document "Artificial intelligence and the risk of a reversed analogy" by Juan David Quiceno Osorio, from Peru.

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This work aims to present the general elements that allow for a discussion of the reality of AI and its place in the world as a technological object. The author raises the need to reverse the "analogy of intelligence," which is primarily human and only derivative in nature. To this end, he takes a conceptual journey through some important aspects of human intelligence provided by philosophy and establishes a distinction between mechanical and technological objects with the intention of highlighting some of the specific characteristics of AI. The text reflects on the danger of reducing living beings to algorithmic patterns and leads the researcher to answer the question: is there a risk of a reverse analogy, where the human is interpreted from the artificial?

The set of ideas, reflections, and findings presented in this issue of *Sophia, Philosophy of Education Collection*, aims to open new spaces for philosophical criticism, resistance, and the reimagining of the present, reminding us that technology is not a destination but one of the problems that human beings must face, something that must be thought about and not simply used. Philosophy, as Foucault (1984) said, is not a discipline of knowledge, but a practice of freedom: "The attempt to know how and to what extent it would be possible to think otherwise" (p. 9). Thus, thinking about digitalization from a philosophical perspective implies not simply adapting to the digital age, but radically questioning it.

Issue 39 of *Sophia* aims to open not a manual of solutions, but a critical set of philosophical questions: to recover Kantian anxiety in the face of the unknown, Socratic dialogue in digital environments, and human fragility in the face of algorithmic perfection. Digitalization cannot rewrite human dignity or extinguish thought. Only a philosophy that renounces technocratic and instrumentalist ideologization can guarantee authentic ethical and civic education.

With this issue, *Sophia* reaffirms its commitment to a philosophy that questions the present, thinks rigorously about technical devices, and contributes to the strengthening of humanistic thought in an increasingly automated world.

Floralba del Rocío Aguilar-Gordón
Editora

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The Question about Ethics Teaching as Boundary of Artificial Intelligence

La pregunta por la enseñanza de la ética como límite de la inteligencia artificial

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Abstract

Education faces important challenges in front of moves that the Information Technologies and Artificial Intelligence are bringing about, in fact along COVID-19 pandemic the systematization of virtual education took place. On another hand, the transhumanism as current of thought is setting up imaginaries about the future. Transhumanist tradition thinkers and other outsiders of this current are paying attention to the education's future in light of educational technologies developing. Thereby, the aim is to propose a theorical approach over the troubles brought forward in the education, according to present challenges that they have been laid down by AI with regard to values learning. Thus, it will not engage with deontological codes for cyborgs or for machines capable of learning, nor will it seek to propose pedagogical model changes in response to technological innovation. Rather, starting from philosophical transhumanist documents review and critic documents with transhumanism it will particularize in the controversy about what scopes will get the AI inside of education's future projection, inasmuch as it is not sure if the machines will achieve to work functions of teaching, neither what the students could learn trough of them moreover in relationship to learning of the ethics.

Keywords

Information Technologies, Educational Technology, Virtual Education, Artificial Intelligence, Transhumanism, Ethics.

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Resumen

La educación afronta grandes retos ante los cambios que las tecnologías de la información (TIC) y la inteligencia artificial (IA) están produciendo en las relaciones sociales, de hecho, durante la pandemia de COVID-19 se experimentó la sistematización de la educación virtual. Por otro lado, el transhumanismo como corriente de pensamiento está construyendo imaginarios sobre el futuro. Algunos pensadores de raigambre transhumanista y otros foráneos a esta corriente se preocupan acerca del futuro de la educación a tenor del desarrollo de la tecnología educacional. De este modo, el objetivo es proponer un tratamiento teórico que discurra sobre los problemas que suscitan las tesis transhumanistas dentro de la educación, merced a los actuales desafíos implantados por la IA a propósito del aprendizaje de valores. En consecuencia, no se van a contemplar códigos deontológicos para cíborgs o máquinas con capacidad de aprender, ni se tratará de explicar la conversión de modelos pedagógicos conforme a las innovaciones tecnológicas. Más bien, a partir de una revisión de documentos filosóficos transhumanistas y críticos del transhumanismo, se enfocará en la polémica sobre qué alcances tendrá la IA en la proyección futura de la educación, ya que no está claro si llegarán las máquinas a desempeñar funciones de enseñanza, ni qué podrían aprender los estudiantes con ellas fundamentalmente en lo que respecta al aprendizaje de la ética.

Palabras clave

Tecnologías de la información, tecnología educacional, educación virtual, inteligencia artificial, transhumanismo, ética.

Introduction

To ask whether a robot could teach ethics is not a trivial question, nor is it a trick question to provoke agitated discourses full of controversy. Rather, this question symbolizes a non-return in the uncritical trust placed in the use of technologies. It is interesting to present the way in which virtual learning programs, as well as artificial intelligences, are taking over educational activities and institutions, which presents a moment that has not been reached by chance. A series of changes in the organization of society had been taking place beforehand, including new ways of producing, trading, consuming and sharing information. These changes explain the fact that the advance of instrumental rationality, accompanied by a battery of new technologies, leads us to wonder about the possibility of a robot teaching ethics. It is not new that machines and AI programs are doing more and more human jobs, in other words, making humans unemployed.

Therefore, the idea to be defended in this manuscript is that artificial intelligence (AI) applied to education finds its most decisive limitation in the teaching and learning of ethics. The way in which social imaginaries are conceived and created around information and communication technologies (ICT) and AI today unfailingly leads to the question «could a robot teach ethics?» Thus, two independent positions are considered, but they are still part of the same fallacious argument when it comes to conceiving education in relation to technologies and their po-

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tential transformations. The first position considers that the current educational system and pedagogical practices allow for changes that envision innovations in line with the context in which current educational subjects are immersed, around whom processes that integrate new technologies are built. The other position sees in the technologies, especially in AI, a substitute for education, which historically was entrusted with improving human beings; according to transhumanists, technologies and scientific advances will perfect the human species.

Hence, the aim of this manuscript is to confront the idea that machines can teach, considering as an insurmountable limit the teaching and learning of ethics in particular and of matters of the human spirit in general.

The first problem that arises is the transfer of the classroom to digital screens and the replacement of face-to-face educational technology by virtual platforms, which anticipates situations perfectly fit into transhumanist imaginaries. Likewise, the hybridization between face-to-face and virtuality, increasingly mediated by AI programs, is a reality in at least part of the world. Another problem lies in the replacement of human labor by robots and AI systems, which considerably reduces the number of available jobs. The paradigm shifts that are being generated around the conception of work also affect education, largely because it had been configured in relation to employability within capitalist instructional spaces, extending to different productive, administrative, commercial and training functions.

In accordance with the problems formulated, concern arises about the possible replacement of human teachers by educational platforms, applications and even, in the perhaps not so distant future, by robots with a high level of interaction with students. Although this is feasible, it still has many limitations, and the basic controversy comes from the teaching and the discussion of ethical values, where AI could fulfill certain roles that, in no case, would completely replace the work of a human teacher. In this sense, it is worthwhile to go into the reformulation of education beyond instruction or the mere acquisition of learning and values by transmission, memorization and replication. Another issue that should be mentioned goes back to transhumanism's own conception of human improvement, which is exclusively focused on the improvement of characteristics, abilities, skills and even behaviors. But this notion of improvement or enhancement does not exactly coincide with the improvements that education should achieve, since the mere empowerment of critical thinking, which addresses issues of thought, is something that AI

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programs and robotic systems in general fail to apply in all their complexity, multidimensionality and diversity.

Currently, the irruption of artificial intelligences in everyday life and, with it, in teaching and learning processes, generates as much fascination as fear. For this reason, it is important to review the origins of these theoretical problems that concern education, which do not arise only from the irruption of AI - an immediately topical issue - but have been originating since the emergence of industrial production relations and new forms of consumption and enjoyment, accompanied by the exchange and generation of information through ICTs. For at least three decades, there has been promising improvements in the human species thanks to technologies, which brings education into play. Education, as a system and practice, was not prepared to face the changes brought by technological development, nor do technologies bring about changes in humans capable of completely replacing education. Namely, if training in values to achieve a cosmopolitan humanity and guiding individuals towards forms of coexistence based on dignity and respect for freedom are aspects of educational training in values, it is an exclusive domain of teaching and learning among humans, something that machines would presumably not be able to learn fully and, therefore, would not be able to teach.

The type of research carried out is based on an interpretative paradigm from a hermeneutic methodological approach. The research design is documentary, because no empirical field data or experimental or quasi-experimental research procedures are used. The hermeneutic method used takes the texts of the bibliography as documents on which to base the interpretations on the subject; these texts are therefore used to document the issues to be addressed and are systematically reviewed in the light of the problem posed. The search for relevant texts for the research process has resorted mainly to sources available on the Internet, and on scientific databases. PDF books by authors relevant to the subject of the manuscript have also been obtained from the recommendation of academic experts in very different philosophical and pedagogical currents, with whom informal conversations have been held (not included in congresses, seminars, webinars or reports of research groups and projects) on the topic to be explored.

Finally, the manuscript has a body of arguments divided into four sections: the first focuses on the process of digitization of education, taking as a starting point the crisis caused by COVID-19, when ICTs gained unprecedented momentum in educational processes. The second focuses on the transformation of educational institutions, which is in tune with

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the breakdown of disciplinary industrial societies and the rise of an economy based on consumption and data sharing in cyberspace. The third explores the economic and social issues surrounding the replacement of human labor by machines, which does not leave education indifferent. The fourth delves into the debates of transhumanism around human enhancement and the idea that education could be replaced by technologies for this purpose.

The digitization of education since the emergence of COVID-19

The crisis caused by the pandemic brought with it the urgent need to implement online education programs for an indeterminate period in practically all the countries of the world, due to the obligation to maintain a rigorous social distance. This situation made it necessary to implement distance education programs, so ICTs were necessarily involved in educational development. This process had already been taking place before in some areas, but the obligation of isolation accelerated it.

The situation experienced by the educational system brought with it a series of novelties deployed on the possibilities offered by ICTs when executing teaching-learning processes. Arundhati Roy (2020) argues that the widespread disruption, due to COVID-19, caused the previous normality to be yearned for as a way of denying the irreducible transformations that occurred since 2020, although many of the changes that have occurred are likely to persist, there is also «the opportunity to rethink the end-of-the-world machine we have built for ourselves» (p. 60).

A decade ago, for example, the cell phone was a device rejected by most teachers in learning activities and spaces, in fact, its presence was demonized in classrooms as a distraction for students. However, today, due to the need to replace face-to-face classes with teleducation, the cell phone has become an essential tool for many tasks involving remote interaction, both for students and teachers. In many circumstances, the cell phone is even the device from which to follow classes or perform online tasks. Maurizio Ferraris (2008) argues that something very different happens with the cell phone from what happens with access to new technologies by poor people: normally poor people are excluded from enjoying the latest technological advances, but when it comes to the cell phone people have it «without owning a house, indeed, a person can have one because is homeless» (p. 47). Ferraris (2020) argues that humanity is

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witnessing a «documedial revolution» in which human behaviors are recorded making praxis a *poiesis*. For Ferraris (2020) everything that can be recorded becomes valuable, in such a way that «zapping on television is wasting time, scrolling the cell phone is not, and the difference lies in the fact that zapping did not leave a record, while being on the Internet does» (p. 46). Education is already immersed in this new *documedial poiesis*.

In a paper entitled «Responsibility in the education of cyborgs», by Monica Ramirez Pavelic (2011), it was predicted that the next transformations to be experienced by humans, beings in constant change given their unfinished nature, are inescapably related to technologies; thus, the next modifications may no longer follow the usual parameters within the human, since the next step will be the cyborg, which will bring with it increasingly patent moral dilemmas. First, students have access to it, «affecting the ideas and interests of children and young people, whose conversations often revolve around this or that model of cell phone or game» (p. 7). Then, over the past decade, the use of digital technologies by learners went from being under conditions of subversion with respect to the attention usually claimed by the teacher's authority to being an irreplaceable input for the entire educational community.

The introduction of increasingly varied technologies in educational activities implies that it is much more advisable to promote their responsible use, if humanism in education is to be maintained. One of the problems facing humanism in education today, and specifically in educational practice, lies in the absence of ethical guidelines that promote the rational use of technologies by users. Miranda Orrego and Grijalva Alvear (2020) point out that despite the fact that *tablets* allow school children to access a large amount of data from the Internet, most of them «approach the teacher to show that they have finished their activity», which would show that the «link established between the child and the teacher exceeds the *tablet,* the latter supports or not what the teacher says, but does not replace it» (p. 199). However, the mediation of the teacher in the activities with digital devices does not prevent the requirement of adaptation to the instrumental rationality of the technological-digital operations from avoiding the processes of review and self-questioning about the way they are used, as well as the uncritical truthfulness with which the contents provided from the network are assumed.

Digitizing educational processes anticipates the hybridization between humans and technology, as a starting point in the formation of cyborgs. Haraway (1995) describes the cyborg as a cybernetic organism in which the organic and the mechanical converge, but it is also an object of

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the imagination, a product of science-fiction, which can cross the border with social reality to demand changes. For the author, the cyborg is not configured according to the opposition between the public and the private, in such a way that it «defines a technological *polis* based partially on a revolution of social relations in the *oikos*, the home» (p. 256). Although, on the other hand, he refers to the ludic use of ICTs as a way of consummating the end of public life, which enables the rise of a military and economic organization on the margins of the majority and, especially, of women:

> Technologies such as video games and highly miniaturized television receivers seem crucial to the production of modern forms of 'private life'. Video game culture is above all oriented towards individual competition and alien warfare. Here generic, high-tech imaginations are produced that can result in the destruction of the planet and a science-fictional escape from its consequences (p. 288).

The year 2020 demonstrated that the potentiality offered by ICT and cyberspace can also encompass areas such as the School and rapidly change habits that seemed unchangeable -such as the face-to-face classroom for the virtual education class-. This, without taking into account many elements that had traditionally been considered essential to the educational task. Before the prohibition of classes, a way was sought to keep the contact between the different actors involved in education through online programs, which were implemented with some success, although not without difficulties and details. Expósito and Marsollier (2020) indicate that, according to the study they conducted in Argentina, which mainly surveyed teachers, there was evidence of a decrease in student performance. Although there was a positive use of pedagogical-didactic resources by teachers and family support to students, inequalities in access to technologies, a factor related to the cultural capital of each family, could not be avoided.

Despite the proliferation of cyberspace, now systematically applied to education, the problems related to unequal educational access continued and will probably continue. This is more a political than a technical issue and technological-instrumental rationality alone will not solve it. However, the struggles for social rights will also be more strongly installed in the claim for access to technological means that, among other things, allow free education in cyberspace. Perhaps this is a space without a defined place where human beings can claim their dignity in a moral and political sense, although, paradoxically, immersion in cyberspace

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contributes to transmute the traditional notions of what is human and what is dignified.

The characterization of technological devices and digital relations in the discourses of certain critics, theorists and thinkers, even before the forced social distancing of 2020, raises the question of whether the supposed advances that humanity is experiencing do not also contribute to entrenching ineluctable systems of domination. During the first months of 2020, authors such as Franco «Bifo» Berardi (2020) insisted on suspicions of a use of technologies taken to the extreme of totalitarian domination of human life. Specifically, the author speculates on the possibility - for him improbable - of «a techno-totalitarian form in which bodies will be forever distributed, controlled, commanded at a distance» (p. 44), although he later argues that a capitalist totalitarianism in which the circulation of capital is not stopped, but which withholds bodies, would not succeed given that it underestimates subjectivity and the harmful effects on the psyche and the economy. Regardless of this, it is possible to notice how the author introduces a hypothetical dystopian scenario that takes technologies as the only indispensable executors of a supposed totalitarian order.

Likewise, it is worth mentioning Byung-Chul Han (2020), who, with regard to the success of *big data* in controlling the pandemic in China and other countries in the East, reaffirms his distrust of technological advances for the benefit of citizens and raises the advent of «a digital police regime» (p. 110). Han (2015) qualifies *big data* as a mechanism for extracting knowledge from subjective aspects that respond to the mere arbitrariness of individuals, it is «a necessary aid that makes up for the lack of objective data» (p. 88). According to Han (2016) the saturation of data in hyper-informed societies does not represent the access to forms of truth and, rather, accuses an important emptiness where only data abound in the absence of theoretical concepts carrying meaning. In particular, *big data*, according to the warning of Niño Morales *et al.* (2024), has a direct impact on the development of politics, «since the information generated is used as a tool by rulers and political parties to provide and offer targeted information for specific purposes, in the search for and attainment of power» (pp. 250-251).

Another relevant reflection is provided by Markus Gabriel (2020) when he states:

> The coronavirus highlights the systemic weaknesses of the dominant ideology of the 21st century. One of them is the erroneous belief that scientific and technological progress can drive human and moral pro-

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> gress. This belief encourages us to trust that scientific experts can solve common social problems. Coronavirus should be a demonstration of this for all to see (p. 131).

What Gabriel (2020) points to is the absence of a relationship between technological and scientific development with the level of morality of societies, which questions whether a higher level of technological and scientific knowledge really improves human beings from a moral point of view, thanks to the ability to coexist better within local, community, socio-political and geo-political spaces.

Cyberspace relations and the dismemberment of the School in the post-industrial age

Sloterdijk (2006) identifies education with a process of anthropogenesis corresponding to the domestication of *animal-sapiens* for the formation of *man-sapiens*. He considers that education is a masquerade of civilization, whose starting point corresponds to the moment when «speaking men live together in larger groups and are linked not only to the houses of language but also to built houses, they are also subjected to the field of forces of sedentary ways of life» (p. 57). Leopoldo Tillería (2020) emphasizes that Sloterdijk proposes «upbringing instead of education» (p. 68). Today, cyberspace has risen above what Sloterdijk (2006) calls «literate associations of forced friendship» (p. 24), what nations became between the nineteenth and twentieth centuries, just when «humanism became pragmatic and programmatic» (pp. 24-25). As opposed to the formative programs aimed at a public with common readings that cement filial ties in the cyberspace on which social networks emerge, associations of individuals are taking shape, exchanging small messages, whose sharing occurs according to social relations based on daily life, friendship, work or pleasures, but not according to national culturalization and civility programs programmed by the state for the creation of a common public.

The exchange in social networks is not epistolary, nor does it even require a high level of literacy; in most cases it is enough to be able to read and write in a functional way. Cyberspace linking groups can be formed from many different types of relationships, coming from different spheres of social and personal life, such as family, co-workers, partners, colleagues, nights out, friendships abroad, etc. Friendship in a social network, being or not in a group, often outlines a person's structure of preferences and companionship. It is not the national fraternity that unites people around

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social networks, nor do state educational programs establish a bond, its participants are often users without a necessary vocation for writing, in fact, there are also those who resort to images (memes, *sefies,* etc.) and even to tiny fragments of voice that cannot be called speeches, whose emission is produced through the recorder built into the *smartphone*. In this way, everyday life simply emerges, accompanied by a voracious tendency to show tastes, slogans, affinities, bodies, feelings, experiences, etc., in which the subjects usually appear as a showcase for consumers.

The education that could emerge from here disrupts the obsolete programs that nation-states implemented through schools since the establishment of universal education. State educational programs have been forcibly adapting to a globalized world, but without altering the domestication component with which they have tried to mold the new global citizens, as a function of the market and business and as a replacement for the national citizen. Moreover, the trend towards the technologization of educational processes does not fail to generate alarming scenarios for the future. However, any alarm is undermined by the public's almost blind trust in the digital spaces of which they are users, which has been affirmed since the COVID-19 pandemic. Since the emergence of digital devices, their indiscriminate use within many educational contexts presents one of the most pressing problems for the critical component within education: during the time that individuals use these devices as users, they operate them with an uncritical attitude.

The degree of speed in the transmission of information offered by ICTs, as well as their power to put entire populations in communication, apparently provide the opportunity to think of a digital democracy that is more efficient, direct and transparent in the governance of public affairs. According to Quintanilla Fisac (2002), digital democracy could increase the levels of citizen participation in public affairs and the connection between political representatives and their constituents could be improved, although he does not believe that it is possible:

> The most important challenges and solutions for the development of democracy have little to do with the use of information technologies to organize voting, to make continuous consultations with the population on political issues, or to substantially improve the problems of legitimacy and efficiency that political representatives have in their communication with voters (p. 639).

Democracy does not necessarily improve if citizens find greater communicative possibilities; it could even get worse if we pay attention

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to the opprobrium and insults exchanged by sympathizers of different political parties in social network chats. The improvement of democracy, as well as the improvement of social coexistence, does not come in any case from an increase in the technological power of each user; however, even the presence of ICTs in human relations contributes to the reflection of serious flaws that humanity has been dragging along and that now become visible more quickly in cyberspace. The composition of political disputes in social networks shows a greater verbal violence that, in fact, on more than a few occasions materializes in the public space. Specifically, in the political sphere, the festering of irreconcilable ideological positions comes from an ideological subject that is prototypical of the previous century, whose decadence is noticeable in cyberspace, but also with violent drifts.

The basic challenge lies in the possibility of cyberspace becoming a community of educated citizens sufficiently prepared to participate in public affairs, beyond the ups and downs of ideological politics. One of the problems in this regard is the devaluation of the state in educational policy. According to Khvastunova (2020) the contribution of States to educational plans generates programs that seem to be increasingly prone to satisfy mercantile demand and the returns of private capital. The relevance of education has to be reviewed in light of the new educational challenges for public coexistence, both digital and physical.

Regarding the above, Sibilia (2006) says that the educational institutions that emerged at the pace of industrial societies, like many other current institutions, are in crisis; paradoxically, the control and disciplining mechanisms «of the past are gaining sophistication, some are intensifying and others are changing radically» (p. 27). New subjectivities are emerging, thrown into the market and driven by the digitalization of social relations, these new subjectivities are not apprehended within the disciplinary devices, the school and the classroom are no longer the primary places where, from childhood, subjectivity is forged. The ideological man of industrial societies cannot face (or resist) the collapse of the institutional walls in which dominion over bodies was exercised in order to turn them into productive force. This new situation «is quite different from the scenario of modern society at its industrial boom, and therefore, it can be assumed that new modes of subjectivation are emerging» (pp. 32-33). The school space was one of the foundations of disciplining, destined to discipline bodies for industrial development. But with the rise of new technologies, the human being becomes expendable and replaceable by machines, so that consumption rises as a way of generating wealth

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-this will be discussed in more detail in the next section- therefore, the way of exercising effective control over individuals configures new formative scenarios, as well as it simultaneously constitutes new resistances from the educational sphere itself.

When Haraway (1995) raises the futuristic of the informatics of domination in the idealized spaces of advanced capitalist societies in the school, the author sees the place of pairing between the needs of high-tech capital and public education. In the school, elements of selection intervene to create an education for the masses, making them ignorant and distant from science; also in higher education, directed by industry, mechanisms of control and selection intervene «by the multinationals of science (especially electronics and biotechnology companies); numerous elites of privileged education in a progressively bimodal society» (p. 294). A concern that Adela Cortina (2024) points out is the constant widening of the digital gap, aggravated by the introduction of AI to education, since most educational institutions around the world do not have access to the Internet. Despite the promises of personalization and automation of learning from the technological-educational market, with platforms that through «ratification» techniques generate the incentives to retain their learner clients, here «inequalities widen, because the well-placed receive attention from people, while the masses are in the hands of intelligent machines» (p. 218).

Today, Silicon Valley introduces all the ingredients for imagining the exclusive and exclusionary school of the future as a model of selection and class division according to knowledge. Within the top-ranking schools, studies will be offered to keep a group of individuals in the social elite. The counterpart will be a multitude of traditional schools, including universities, with serious shortcomings in offering state-of-the-art scientific knowledge to their students.

The increasing participation of technologies in production and the redefinition of work

The automation of various productive activities, management and services contributes to the loss of employment for human beings. Rifkin (2014) gives an account of how in almost all sectors, not only industrials, the impact of new technologies causes disengagement of employees. «Automation, robotics and Artificial Intelligence are eliminating jobs in management tasks and in the service sector at the same rate as in the

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manufacturing and logistics sectors» (p. 161). Not spared are knowledge workers, who are also becoming expendable. The streamlining of algorithms and the development of AI contribute to the ability of machines to make discoveries, propose hypotheses, translate languages, etc. AI is also being applied to document analysis in professional fields whose workers would never have suspected it. The truth is that there are computer programs -predating today's artificial intelligences- capable of doing the work of many professionals more efficiently than humans, giving equal or better results and at very low cost. Rifkin (2014) predicts that over the course of this century «an increasing share of society's productive economic activity will be in the 'hands' of intelligent technology overseen by small groups of highly skilled professionals and technicians» (p. 168).

Consequently, with the automation of jobs, the demand for labor will decrease. It could be argued that it does not seem to be affecting the educational field, since at least for now no school or university would allow robots to perform the same tasks as teachers. But it is worth noting that at present, there are instructional and programming activities directed from robots to other robots. The economist Santiago Niño Becerra (2020) states in this regard:

> The supply of labor is already greater than the demand for labor, and structural unemployment is increasing. But technology will gradually reduce the need for labor and, in any case, demand professionals with very high qualifications and experience. In fact, we are entering scenarios in which robots are already teaching other robots how to perform tasks and in others where machines are already programming machines (p. 392).

For this author, the level of unemployment that will be generated by new technologies and AI is a cause for concern; the forecasts are not encouraging and, although technological development will create new types of employment, it is estimated that these will not satisfactorily cover all the available labor supply. The question therefore arises as to what to do with the mass of workers who will be deprived of gainful employment. Even more worrying is the question of what will be the use of secondary and higher education if machines and robots take over most of the technical and administrative jobs that traditionally required a large number of skilled workers.

One issue that cannot be overlooked is the fact that robots are already programming other robots, which does not exclude the possibility that they will end up carrying out teaching tasks for humans -if we re-

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duce teaching to a kind of instructional programming. Cortina (2024) comments on a case regarding the use of robots in tasks that have normally been performed by humans: in 2010, Michael Anderson and Susan Leigh Anderson programmed an assistive robot called Nao, whose main function was to remind elderly patients when to take their medication and to establish when to stop taking it. But the particularity of Nao was that it could choose the degree of insistence to make the reminders, and could even decide not to insist, in order to respect the autonomy of the patients, of course always informing the corresponding human supervisor. The Andersons considered that the robot was capable of making basic ethical decisions, although such decisions - as Cortina points out - are based on moral principles installed in the robot's programming.

This case leaves open a question no less relevant to the educational field: could a robot be entrusted with the education of one or more people, just as Nao was granted the care of the elderly? If a robot has a margin of choice when caring for the elderly, insofar as it decides when it should not overstep the limits of someone's personal autonomy, then that same robot, based on the criteria of its programming, would be able to offer a lesson in ethics and even give examples to its students based on its choices in practice. It is worth arguing, however, that under these hypothetical teachings given by the robot would always be operating the principles of its programming, i.e., algorithms by means of which it calculates what is most convenient. Cortina (2024) classifies this type of programming within the level of «roboethics» that has to do with «machine ethics» (p. 93). At this level, an ethical code is installed in robots and a certain degree of autonomy is attributed to them, so that humans can judge to what extent the robot operates according to an ethical code and to what extent the program applied by the machine is appropriate. Just as a code can be applied by a robot, it can also be taught by it, if its action is recorded by the algorithmic program as a kind of good or appropriate action.

On the other hand, taking up again the problem of automation in relation to human jobs, the activities that robots are able to perform make it necessary to go deeper into the concept of work. One of the authors who takes on this task is Ferraris (2020, p. 164), who realizes that automation will cause the disappearance of a large part of jobs, as well as the reduction of the costs of goods and services. However, he argues that the conception of work must be broadened. For Ferraris (2020), consumption, by generating profit, will also fit as work, since «human labor as production will be a phenomenon quantitatively too rare to be an economically significant element» (p. 165). The paradigm shift of labor involves

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the production of value through the consumption of data. Beyond the awareness of working -according to the example presented by the author- if a pack animal creates value without being aware of working, then, also a porn viewer will be working insofar as he produces data and thus wealth. Likewise, Ferraris (2020) indicates that there is no place for considering work as alienation, i.e. there is no way to relate work to activities that imply enjoyment for the person or people who perform them, because it would lead to the conclusion that those who enjoy their work should not really receive a salary: «If you enjoy it, it is not work» (p. 172). The author is careful to present «as a hope, what in the West is perceived as a threat» (p. 173), in relation to the incessant loss of jobs and the position of the human being as a dispensable entity in production.

With respect to the above, it can be seen that Ferraris' proposal dimensions the concept of work on much wider margins than mankind has so far believed, not overlooking the fact that if consumption is equated to work, then, also to consume would require an instruction, which would entail the need to teach ethical guidelines that would allow the creation and interpretation of the ethical codes that regulate the consumer's profession. In fact, without being considered a profession, consumers all over the world urgently require codes of ethics. But for the moment, the trend is not towards the idea of a consumer code of ethics. The consumer considers himself to be free, and this is how many market analysts see it; starting from freedom is a legitimately ethical point, but its definition in consumption tends to belittle any kind of obligation or deontological agreement, and the simple fact of proposing them is often portrayed as contrary to freedom.

In practice, consumer freedom is a fiction of economic science: the consumer is only driven by data frequencies that ICT tunes to the affective frequencies of subjects, these fluctuate in the social composition of desires and passions, in turn moving crowds in the order of pre-designed consumption preferences. Today, there are AI systems capable of offering consumers the good or service they are looking for according to the characteristics deduced from the data they provide in their web searches and participation in social networks, but, although these programs are in some cases very effective in locating preferences, there is no evidence of consumer ethics. There is so much voracity of the consumer that it puts the sustainability of planet Earth at risk. Caring for the Earth is an activity not entirely contemplated as a form of work because, if there are unsuspected conceptual dimensions in the definition of work, caring for human communities, biodiversity and the environment would also be in-

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cluded in this definition. This work does not generate immediate returns in the sense of «documedial» value, but it can produce relevant balances in the long term.

Another problem deriving from the conceptual crisis of work concerns the meaning of education in a world where training is no longer a guarantee of insertion in the labor market. If machines occupy more and more human jobs and their supervision will foreseeably require only a handful of hyper-skilled and hyper-specialized human technicians in control functions, then training understood as education will be reduced to select groups of people whose access to it will be privatized in financial terms, which will bring with it very demanding, rigorous and exclusive selection mechanisms for those who cannot afford to pay for accessing this type of education. These selection and exclusion mechanisms respond to the rise of econobiopolitics, which Villacañas (2020) considers as the neoliberal reduction of biopolitics, whose purpose is the conversion of «the human being into a *cyborg* better adapted to the suffering of a permanent crisis stabilized as nature. The best adapted is now not selected by the biological load but by the implanting of the best *Homo economicus*» (p. 185). This readaptation to the permanent crisis would be implemented from the internalization of a logic of productive-financial performance that would not discriminate between human and artificial intelligences. The technological would be blurred in the human flesh itself. In this way, it can be affirmed that education is no longer properly such, since it has lost the purpose for which it was conceived. According to Ferrando's (2019) the characterization of *paideia* is:

> The formal education of its citizens -in the *Polis* of the ancient Greeks- (although not everyone had access to it), and also the informal participation in culture, promoting an identification process of the individual with the political *ethos* (p. 91).

Today education is stripped of the *paideia* that originally founded it. The conception of education in industrial societies has been linked to the idea that the training of human beings is worthwhile, according to the benefits to be gained from instruction in the productive apparatus. This notion of education has increased to the point of perishing those fields of knowledge that do not have immediate productive or financial results, as they do not respond to a sufficient demand of students because they do not guarantee a promising professional future. With the entry of robots into productive and labor activities, education, understood as instruction that interests individuals to the extent that it prepares them to perform

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more or less specialized work, also succumbs. Nevertheless, the reduction of jobs does not necessarily make education disappear, because it has a much greater meaning than instruction or preparation for the development of a particular profession or job. A scenario is opening up where vindicating the «paidetics» component inherent to education will be a way of keeping its integral sense alive.

Margins of possibility for ethical education in a transhuman context

Transhumanism is a philosophical movement that reflects on possible scenarios in a future horizon, under the assumption that technical and techno-scientific advances will substantially modify the human being. In this way, transhumanism does not try to develop technical abilities of humans from their natural capacities, thus what education does in a traditional sense, but rather, it promotes «transforming the human being into another type of entity, into an entity with another nature or without any nature. For this project, very diverse technological modalities are used» (Marcos, 2021, p. 1). The controversies opened by transhumanist imaginaries also loom over education, given that both the spaces and the practices and theories that are evident in education are susceptible to be influenced by the complexities brought by ICT in the cognitive, sociocultural, technoscientific, economic and political dimensions.

One of the most striking AI programs today is AlphaZero, capable of learning by itself to play strategy games. So far, AlphaZero's great achievements can be counted in chess, where it has demonstrated intuition, creativity, the ability to take risks, and even to generate beauty on the board. These characteristics correspond to human traits and qualities that until a few years ago were unthinkable for an AI program. At the end of 2017, AlphaZero beat StockFish, considered the best chess program and with which grandmasters learned - the fact that they improve their technique by resorting to AI programs already says a lot about the potential alternatives of learning with AI programs. In an interview with the world champion Magnus Carlsen (Garcia, 2019), he acknowledged that his own style of play was modified once he began to take ideas from AlphaZero, in fact, many chess scholars note that the world champion's style has become much more aggressive, speculative and disruptive with respect to the rules of opening and positioning established and recommended by the chess academy. Apart from the achievements of AlphaZero, other

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versions such as AlphaFold perform with high prediction accuracy in the field of genetics.

Long gone is the 1997 victory of the Deeper Blue version of IBM's Deep Blue computer against the then world chess champion Garri Kasparov. Bostrom and Yudkowsky (2011) argue that Deep Blue «became the world chess champion, but it cannot even play checkers, let alone drive or make a scientific discovery» (p. 3) (own translation). Deep Blue could calculate «the relationship between a move and its possible future consequences more accurately than programmers» (p. 4), yet this computational system could not transfer its calculations to areas other than the game of chess, nor did it have the ability to draw consequences from one game to another. However, AlphaZero can learn, which shows that in twenty years AI has managed to cross an important barrier: from functioning as a system programmed to execute predetermined actions according to complex calculations to being able to improvise in decision making taking into account previous situations. The AI can decide whether or not to move a pawn, but one wonders whether it can also make a decision that is considered ethical or whether a kind of ethicity can be attributed to one of its decisions.

Possibly education is the field where AI can demonstrate its scope and, presumably, also where its ineluctable limitations become evident. With respect to learning, Sánchez Ramírez and Juárez Landín, (2017) show that there are already robots that intervene in teaching processes, and are proving useful for humans to learn languages, science and technology. On the other hand, López Ramírez and Andrade Sosa (2013) highlight the advantages of education through robotics and with robots, which contribute to stimulate the construction and reconstruction of knowledge from the learning subjects. Likewise, the authors emphasize the importance of the construction of robots to reinforce the ethical criteria of students, by critically and argumentatively discriminating between the beneficial purposes of technology and the damage that can be caused if they are used for ethically illicit purposes. AI programs do not know the moral purposes for which they can be used, so far, just as they are incapable of questioning their existence, they have no capacity to ask themselves about the good or evil intrinsic to the morality of actions independently of the codes with which they are programmed; neither can they show the moral lawfulness of the purposes for which they were created.

As far as learning with robots is concerned, it is possible for the learner to stimulate his or her abilities independently of the teacher's intervention and without the need for textbooks. Just the fact of proposing

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that a human teacher can be replaced by a robot establishes an ontological equivalence between AI and human beings, a latent problem in the definitions and concepts of current ontology, since, as Tillería Aqueveque (2022) argues, «so far it has not been clear what are those human attributes that would be hypothetically outside the heuristic possibilities of an intelligent machine» (p. 62). If these attributes are not defined with precision, then, an AI could never be denied the role of a teacher, as can countless professions (discussed in the previous section).

The programmer may be aware of the consequences and purposes of the programs he or she creates. But with advances in AI, we may witness a very different scenario, which professional chess players have begun to experience, the reversal of learning programs: it could be the AI that programs the way the learner learns, based on the discovery of new ways of learning. Bostrom (2003) predicts the replacement of humans by more autonomous and independent forms of life thanks to the implementation of new technologies and scientific advances, twenty years ago he stated that «we could face the prospect of real artificial intelligence. New cognitive tools will be built with which to combine artificial intelligence with the technological interface» (pp. 4-5) (own translation), which would completely annul human intervention in all life processes, including educational ones. It is obvious that if an AI entity were to create an educational program, even today, it would require human programmers with sufficient pedagogical advice and supervision, however, if AI already has the capacity to learn, overcome its own mistakes and improve its techniques, nothing prevents an AI system from reaching pedagogical programming, reaching facets and assuming factors not noticed by humans -automation of teaching and learning.

Educational practices are being reoriented to social relations within a post-organic environment, Sibilia (2006) wonders which are the most demanded human forms nowadays, to which the author finds a possible answer within the complexity of the issue: «they are those modalities that best adapt to the integrated circuits of global capitalism, those that our society requires to be able to function properly» (p. 262). Thus bodies and minds merge in connections mediated by technologies that form networks more complex than traditional political and economic spaces. Klichowski (2015) speculates on the possibility that an intelligent machine manages to stimulate «the growth of human intelligence and enable its transfer from a human body to a machine (robot) or to a given system created by machines» (p. 433) (own translation). Klichowski (2015) points out that transhumanist thinking involves making the effort

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to imagine life that maximizes experiences to unsuspected limits. Transhumanism allows rethinking and redefining traditional anthropological conceptions and contemplating new solutions to problems that are indecipherable for current humans. The improvement of future generations is an approach that accompanies these new challenges, which inexorably involves education as well:

> Education has been the formal process of making people better. It is education that has to be redesigned in the transhumanist concept, moreover, taking into account the fact that changing man through technology and education are ethically equal categories of action, and that technology is (and always will be) more effective than education (p. 437) (own translation).

In this sense, Sorgner (2021) considers education and genetic improvement as two parallel and equivalent processes of human improvement, without discriminating between biotechnologically induced modifications and those that are didactically-pedagogically established. He points out that education aims at an improvement or enhancement of the child's life from the transmission of cultural values from the «parents» or legal guardians -where the family environment would be included by extension, although the author does not mention it-. Similarly, Sorgner (2015) argues that eugenics applied to children would also come from the hand of the decision of some legal guardians. «It is always uncertain whether genetic enhancement will yield beneficial results. In any case, it is also an open question whether education will have beneficial consequences in any specific case» (p. 35).

Whether through technology or technoscientific advances applied to genetic modification, the proponents of transhumanism are taking for granted that education and eugenics have the same ontological value, which inevitably leads to equate them ethically. However, although both processes may share the same purpose, namely human improvement, they are not carried out through identical elements and, therefore, collaterally the results may be very different. Moreover, it is assumed that education also trains the human subject to exercise critical thinking; so far, there is no implant or injection that artificially fosters it. In fact, critical thinking enables each subject, in the exercise of his / her reflection and capacity to reason, to submit to judgment even the type of education he / she received or is receiving; and if that same subject had gone through genetic modifications that his / her parents eventually decided to make during the childhood, critical thinking would provide him / her with the

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capacity to value them beyond the immediate results, perhaps in terms of justice or existential state.

Education is a social process, requiring the relationship between student and teacher; between students and between teachers, with institutions, etc. Normally, transhumanists support the use of technologies to transform humans, however, Terrones (2018) qualifies that «the modalities adopted by enhancement are very varied, ranging from enhancement by means of drugs to the integration of our mind in machines, to genetic manipulation» (p. 62). The use of technological and/or technoscientific resources to enhance capacities or qualities presupposes and plans changes aimed at improving one or several humans, but does not follow the procedural pattern that accompanies educational activities, since the latter modify individuals from roles and social relations framed in an institutional framework and customs. Educational activities are permeated by problems and learning styles, also in response to the needs of the learning subjects and the social environments where they are developed. A machine may be able to program a teaching plan, but it would still be unable to improvise according to the particularities that would be presented to it. The presence of the teacher is irreplaceable, because he/she is a necessary moral subject in any teaching and learning process, even though robots are capable of strengthening certain skills and abilities in learners with great efficiency.

Technologies and AI can provide important advantages in educational processes: they stand out for their effectiveness in bringing individuals into contact remotely, contributing to data analysis, calculation, anticipation, prediction, data storage capacity and speed in the search for information; these are some of the many possibilities that AI provides for the improvement of educational processes. What is worrying is not the intervention of technologies in teaching and learning procedures, but rather the attempt to ontologically and axiologically equate human improvement through technoscientific advances with human improvement through education. As Khvastunova (2020) states «a machine, by definition, cannot be spiritual» (p. 887) (own translation), so that the conversion of humans to machines or the digitalization of people should not be imposed, in any case, as a single path of improvement. The author also says that it is necessary to adopt different options, «because a person is an intelligent, creative and, most importantly, free creature, that can always offer an alternative to the dismal future of the digital singularity» (p. 887) (own translation).

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On the other hand, it is convenient to break away from the idea of education as mere learning in order to aspire to a development model, as humanist authors such as De Zubiría Samper (2006) state. Often humanistic pedagogical trends fall into an exaltation of the human without taking into account the displacement that the subject is having in what Ferrando (2019) calls the «post-anthropocentrism» (p. 105). In these circumstances, development is not only limited to the human and its interests, but also, doubly, technological and environmental development to avoid a future collapse that exceeds the aspirations that for millennia forged the Anthropocene. Particularly in the paradigm shift that is opening up the transhumanist philosophy, which is but a current of thought within the complex posthumanist and postanthropocentric context, we are beginning to foresee what will most likely be the new tensions in the medium term: conserving nature at the cost of limiting the technological progress that poses the greatest risks to life on Earth and the need to generate scientific and technological advances that are not harmful to the environment but that contribute to human betterment. In the midst of this polarization between the development of the technosphere and the need not to deteriorate the Earth's natural processes while guaranteeing its sustainability, there are debates from which we will tend to think about the future of education, within the hybridization of humans with machines and diverse intelligences.

The educational sphere, with the currently predominant pedagogical system and models, has not yet inserted itself within this polarization that will constitute the contradictions within social and geopolitical relations in an increasingly near future. According to Terrones (2018) the relationship between biological and artificial intelligence is rapidly tightening. The Singularity, which represents the booming stage of technological growth, brings with it the risk that «intelligent machines could dispense with any human influence» (p. 66). If this were to happen, education might be the last possible redoubt of humanization in a world that is technically efficient but devoid of meaning.

Conclusions

The continuous presence and advance of digital devices and virtual spaces in the development of education is largely motivated by an unrestricted trust of societies in technologies and their innovations. Since 2020, the proliferation of educational alternatives based on virtuality and the

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systematic use of technological means to pursue learning has been increasing, and the scope of technological innovations applied to the educational sphere seems to have no end, much more so since 2022, when AI became a technology for public use. Like an avalanche, AI *apps* covered new market niches, offered alternatives for accessing, receiving, collecting and transmitting knowledge, which put at risk the occupation of jobs that seemed to be only human domain. Education was not exempt from this new wave of possibilities offered by AIs, but the truth is that confidence in digitization and new technologies had been imposing itself as an almost inescapable reality for educators, students and educational institutions since before.

With this panorama, transhumanism has for several decades been analyzing the imaginaries that seek to anticipate possible scenarios, thanks to technological advances. However, there are several issues to be addressed in the present, despite the transhumanist promises of a future with a myriad of human improvements brought about by techno-scientific advances. It should be borne in mind that the technological horizon is not *per se* surrendered to transhumanist approaches or to linearities that respond to established narratives and discourses, because often the readings that are made in this regard tend to magnify both the most optimistic and the most pessimistic visions of the development of technologies. It can be said that the transhumanist current can sometimes create innocuous concepts with no real opportunity to flourish.

As far as education is concerned and the question that is the title of this manuscript, it can be stated without delay that an education managed exclusively by virtual programs, artificial intelligences and machines programmed to optimize learning processes is highly debatable. As far as the teaching of ethics, whether a robot can become competent as a teacher is a question that arises only from the unusual trust placed in technologies. Of course, there is the possibility of programming a robot to deliver a lecture on utilitarianism, formalism, or any other ethical doctrine one might consider, but usually ethics education entails doing more than lecturing. Dialogue, deliberation, and all forms of exchange of ideas in ethics education are essential practices, not least because not everyone necessarily has to be convinced that one or another ethical perspective is best in practice and indisputable in theory. Likewise, ethical issues are often intertwined with sociopolitical issues; so, a robot and any AI program would have a hard time interacting fully in the context in which students are immersed in the classroom.

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A robot programmed to learn deontological codes would probably also be successful in transmitting them and making them known with some clarity, precision and even elegance, but the way it teaches those codes may fail in any discussion among humans, since humans are quite unpredictable when it comes to discussing values. Humans tend to speak on the basis of passions, sometimes we seek to rationalize them, sometimes we pass off a sentimental approach as rational and universalistic, generalizing it to other cases or trying to put others «in the place of». In fact, not infrequently we humans interact motivated by feelings and passions and then find points of rationality that give meaning to communication and action. Thus, in dialogic contexts, if by chance a robot were to learn a formalistic code of ethics in conversations between ethics experts, it might not do very well in a bioethics committee, because these committees imply necessary agreements when making a decision in a particular case. A robot that assimilates some deontological points of view would almost certainly act in a biased way, without experiencing the situations and events that allow the flexibility required for joint decision-making. In the same way, within an ethics class, the robot would suffer from the same details.

Ethics does not only consist of gathering information; a code of ethics is not only acquired by virtue of absolute values, because sometimes situations arise in practice that merit decisions that are not systematized according to an established doctrine. If the robot were capable of learning and even improvising, its criteria would not be the most reliable or the most recommendable, because its deontological configuration would respond to very particularized cases, when in ethics it is a question of projecting regulations of a universal nature, or at least, if this is not desired, regulations that can serve as a reference point for the great majority of humans. This does not mean that everything that an AI can contribute in the field of morality is disposable, but, in any case, fortunately, deontological structures do not respond only to algorithmic relations, calculations and axioms, much less to preprogrammed elements.

The configuration of an ethical cyborg would require the hybridization of technology and AI with biological and natural components, however, in this process, mechanical compounds may predominate by preventing a personal development where the individual is exposed to learning through negative experiences. Algorithms do not admit the negative because their operational logic is based on continuous positivity. Algorithms apply a program, they do not question its veracity, they simply operate possibilities within preset rules of the game. However, hu-

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mans, when it comes to discussing values and deliberating on possible actions, can sometimes resort to negative experiences around an uncritically taken-for-granted approach. They can also question the rules of the game by virtue of their needs, thus showing certain margins of creativity around the interpretation of normative codes and practice, from personal experience, but also imagining how this experience could occur in the case of others.

Education can provide other perspectives and offer alternative conceptions and logics, as long as these are not limited to programming mentalities, since it is possible to see how in many situations education has been considered as a kind of programming of human beings (instruction), even before AI and educational technologies appeared. If education is considered as mere programming directed at human beings or cyborgs, the replacement of teachers by machines could be anticipated and ethics would no longer have anything to teach.

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Configuration of Subjectivities through Artificial Intelligence Systems

Configuración de subjetividades mediante sistemas de inteligencia artificial

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Abstract

Artificial Intelligences (AIs) were configured as systems that impacted ways of being and existing, with the potential to invade the interiority of human beings and reconfigure their social, ethical, identity, and ontological dynamics. The article aims to interpret the configuration of subjectivities through AI systems. The review and selection methodology for texts (N = 74) was carried out using the PRISMA model, with temporal criteria (2016-2024), in the interfaces and Boolean Operators of EBSCO, Science, and Scielo. Using analogical hermeneutics, which integrates utopian and dystopian voices in an analogy or *phronesis*, the texts were interpreted regarding the impact of these systems on human beings. The results indicate its influence on the dynamics or ipseity of the development of subjectivities, with the potential to configure them as prosuming, disembodied, algorithmic, hyper-related, hyper-informed, hybrid, and, in short, artificial. In each case, benefits are established for empowering their creativity, autonomy, sociability, and diversity, risks of dissatisfaction, datafication, superficiality, fracture, and substitution of the self, as well as opportunities for human development, empathy, decision-making, and identity processes. The conclusions highlight the potential of AI to invade and reconfigure subjectivities and the abundant literature on its technological, social, and educational aspects, but a paucity of studies on its impact on human beings.

Keywords

Philosophy, Artificial Intelligence, Human Development, Big Data, Algorithm, Identity.

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Resumen

Las inteligencias artificiales (IA) se configuraron como sistemas que impactaron los modos de estar y ser, con el potencial para invadir la interioridad del ser humano y reconfigurarlo en sus dinámicas sociales, éticas, identitarias y ontológicas. El artículo tiene como objetivo interpretar la configuración de las subjetividades, mediante sistemas de IA. La metodología de revisión y elección de textos (N = 74) se realizó bajo el modelo PRISMA, con criterios temporales (2016-2024), en las interfaces y los operadores booleanos de EBSCO, Science y Scielo. Mediante la hermenéutica analógica, que integra voces utópicas y distópicas en una analogía o *phronesis*, se interpretaron los textos acerca del impacto de estos sistemas en el ser humano. Los resultados indican su influjo en la dinámica o *ipseidad* del desarrollo de las subjetividades con el potencial de configurarlas como prosumidoras, descorporizadas, algorítmicas, hiperrelacionadas, hiperinformadas, híbridas y, en definitiva, artificiales. En cada caso se establecen beneficios para empoderar su creatividad, autonomía, sociabilidad y diversidad, riesgos de insatisfacción, datificación, superficialidad, fractura y sustitución del yo; así como oportunidades para el desarrollo humano, empatía, toma de decisiones y proceso identitario. Las conclusiones refieren el potencial de la IA para invadir y reconfigurar las subjetividades y la abundante literatura sobre sus aspectos tecnológicos, sociales y educativos, pero la escasez de estudios sobre su impacto en el ser humano.

Palabras clave

Filosofía, inteligencia artificial, desarrollo humano, datos, algoritmo, identidad.

Introduction

Artificial intelligence (AI) with its star device, the *smartphone*, which for Sadin (2022) has become the «idol of our time», has marked new ways of being and being in the virtual, mixed and expanded worlds, which, according to Leyton (2022), open up the problem of an ever greater deterritorialization and blurring between reality and symbolic representation, with the consequences indicated by Lázaro (2022): the individual, while experiencing contradictory and critical feelings when living as himself, only perceives sensations.

By integrating devices, data and algorithms, these intelligent systems raise another side of the problem: their impact on the interiority of the human being. This invasion is possible because, according to Sadin (2018), these «technical-anthropological» systems can ensure, optimize, anticipate actions and became totems with answers for life, until propitiating a *gekeism* or eroticized and exclusive relationship between individual and device, with features of submission until becoming *another self*, partially superior to the individual. The last point of the problematic lies, both for Han (2014) and Acevedo (2022), in the configuration of a new panopticon, now digital and without watchmen, whose strength lies in its strategies to generate anxiety, addictions and dissatisfactions, as well as to subtly seduce the individual.

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This problem opens the idea to defend: AI systems have the power to impact, configure subjectivities, their mentalities and permanently redefine their relationships with themselves, with others and with the new metaverses. In this sense, the objective of this article is to interpret the configuration of subjectivities, by means of strong AI systems, through an analogical hermeneutics, in order to establish benefits, risks and opportunities for their integral development.

The relevance of the topic lies in the impact of AI on the ways of being of individuals, because, according to Arbeláez *et al.* (2021), AI on the one hand went from transforming living spaces to altering and subverting subjectivities, and on the other, according to Muros (2011), this invasion of interiority (*psyché*) is directed to configure new virtual identities. For Firth *et al.* (2019), the capacity of the digital environment can even affect brain structure, functioning and development.

The topicality of the subject of AI lies not only in its impact on all areas in which life develops: social, cultural, health, educational, commercial and labor, as was traced a few years ago in the Stanford University Report (Stone, 2016); but, in that it arrived to life itself with promises to overcome the alleged shortcomings of the human being with transhumanist proposals, which indicates a challenge for the human (Barrios Tao *et al.*, 2020). Finally, the theme of AI traces its topicality by its strength, in the words of Floridi *et al.* (2018), to invade the interiority of individuals with the potential to model them, manipulate them, govern them, in short, reconfigure them.

The methodology for interpreting texts on the impact of these systems on the configuration of subjectivities will be analogical hermeneutics, which allows a balance or analogy between the voices that indicate threats and those that point out benefits in the relation between AI and subjectivities. For Beuchot (2016), this hermeneutic makes it possible to understand texts located at extremes by considering the influence of AIs in the configuration of subjectivities. Thus, this methodology makes it possible to overcome the interpretative dualism of the relationship between AI and humans, which moves between detractors and defenders or between hopeful and apocalyptic (James *et al.*, 2023; Bakiner, 2023).

This article begins by presenting references on subjectivities and their static (selfhood) and dynamic (ipseity) dimensions, as well as on the process of mutual construction between AI systems and subjects. Likewise, the dynamics and polysemy of the AI construct are reviewed, focusing on the strong systems, whose capacity allows them to invade the interiority of the human being. Subsequently, the methodology for the review and

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interpretation of the texts is developed. The third moment presents the results, based on the emerging themes. Finally, the results are discussed in relation to a balanced vision between AI and subjectivities.

Subjectivities and strong AI systems

In the subject and devices relationship, Foucault (1987) defined the subject not as an entity of predetermined or pre-existing character, but as the result of various factors such as discursive practices, norms, relations and power devices, exercised on the body, within the framework of society. However, this somatocratic model proposed by Foucault (2009), in which physical power is exercised over the body at micro- and macro-social levels, would be ineffective, according to Urabayen and León (2016), to understand the new governance techniques exercised by AI, which arrived at the decorporalization and the exercise of power over the interiority of the subject.

On the other hand, in the polysemic dimension of both subject and subjectivity, while Zemelman (2010) considers that the subject becomes a subjectivity when it is concretized in its various historical moments, for Piedrahita (2014) subject and subjectivity refer to a stable state of being, while subjectivation is a process that is affirmed «in the difference, in the mutation of itself and in the rupture with its present» (p. 16). According to Ricoeur (2006), subjectivities are dynamized by narrative identity as a bridge between their condition of stability (selfhood) and that of dynamicity (ipseity). This identity combines traits of permanence and change. For López (2017), while selfhood refers to the biological character, identifiable and reidentifiable as himself and determines the individual character as a set of signs that allow distinguishing a person, ipseity implies variations or transformations of the individual, considered as a being in project with influences from his sociocultural environment.

In the mutual process of construction between subjectivities and AI, it is fundamental to consider ipseity, related to the psychological and the variable that presents the person as a being-in-project, according to López (2017), a being subject to change in his own environment. In the new digital panopticon, indicated by Han (2014), the subject is the target of power oriented to his interior (*psyché*) through seduction, and his behavior is activated from affective channels that engage human desire. The consequence is, for Piedrahita (2014), a mass of separate individuals who trade with their appearance. In the end, for Cabañes (2022), this pa-

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nopticon reconfigures their identities through seduction, their data and devices, to the point of turning them into the sum of their relationships with their devices.

In human interaction, the boundaries between physical and digital spaces are increasingly blurred. Hence, some factors involved in the identity construction of subjectivities in the physical reality are recognizable in the formation of the virtual one, i.e., according to Garzón (2021), common patterns are evident in the identity of individuals in their physical and virtual lives. For De la Vega (2020), this digital identity configures the «social self» understood as the mode of presentation of the individual to others, influenced by this digital environment and constructed by multiple factors, thus referred to by both Gómez (2014) and Piedrahita (2014): activities, experiences, relationships and cultural patterns, values and even fiction, among others.

As for AI, the polysemy of its meaning lies in the dynamics of its advances, which transcended from considering it as an activity that creates machines to automate human tasks, to a set of knowledge that integrates computational, social and human sciences aimed at designing intelligent systems applicable to different areas of life: transportation, health, education, culture (Pedró, 2019). This conceptual dynamic led Kaplan and Haenlein (2019) to classify them into narrow, general and strong, according to their ability to emulate human capabilities. The weak and general ones automate human practices and offer welfare, while the strong ones are designed to act on human beings with capabilities to mimic languages and emotions, and their goal is to incorporate reason and even consciousness. Thus, these authors refer that strong AI could be considered as analytical (cognitive intelligence), emotional (human-inspired) and humanized (social intelligence).

The European Commission (2020) considers that the potential of strong AI systems lies in the integration of devices, data, algorithms and new realities, with possibilities to emulate and impact personal and social life and invade individual interiority. For Sadin (2018) they are «contemporary digital creatures» characterized by their incorporeality, extreme speed, metaphorical analogy, with respect to our gender and are endowed with a cognitive power that overflows that of their creators. For his part, O'Neil (2017) considers that the soul of these systems are algorithms, which can become weapons of destruction due to their potential to profile individuals, insert themselves into the inner life, trapping the projects and experiences of subjectivities.

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In the end, AIs are determined as agents or entities acting on behalf of others with underlying economic gears (O'Neil, 2017) and with increased possibilities to «co-construct, co-constitute, and co-configure» with the human (Ihde & Malafouris, 2019; Barrios Tao *et al*., 2020). In Sadin's (2018) terms, at the same time as the human constructs and configures these systems, he is reconfigured by them with his subtle and effective performances towards a «robotic administration of existences» (p. 27).

Methodology

The methodology is located in the interpretative approach oriented to understand the configuration of subjectivities, through strong AI systems. The literature review was conducted with the steps of the PRISMA model indicated by Page *et al*. (2021). In the first step of the model, texts were identified by the combination of English, Spanish and Portuguese descriptors («artificial intelligence», «subjectivity», «subject», «identity», «self»), according to the interfaces and Boolean operators of EBSCO, Science and Scielo, and in the time frame 2016-2024 (N = 537). The next filtering step was performed considering documentary typology (research articles, books by relevant authors), languages, and areas of social sciences and humanities (excluded n-405; temporal selection N = 132). The subsequent eligibility phase was carried out with criteria of accessibility and quality of sources (excluded n-38; temporary selection N = 94). The last inclusion step considered texts relevant to achieving the article's objective and other relevant texts were contemplated (excluded n-20; final selection N = 74).

Analogical hermeneutics allowed us to understand the included texts, which put forward extreme interpretations, utopias and dystopias about the impact of AIs on the configuration of subjectivities. For Beuchot (2016), this hermeneutics is determined as a «politics of interpretation» and «interpretation of politics» and contributes with the «de-totalization» of univocal meanings and the «retotalization» of equivocal ones, to arrive at a prudential, analogical or balanced interpretation. Thus, in the interpretation of the impact of AIs, both the risks of dystopian or equivocal voices and the benefits indicated by univocal or utopian voices and the opportunities or *phronesis* of AI systems in shaping subjectivities can be considered.

The interpretive design was conducted through the three-phaseanalogical hermeneutics: syntactic, semantic and pragmatic (Beuchot, 2016). In the first, a matrix was structured by means of the seven emerging

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thematic units related to the guiding purpose: prosumer (p), disembodied (c), algorithmic (g), hyperrelated (r), hyperinformed (i), hybrid (h), artificial (f). In semantics, both univocal (u) and equivocal (e) voices were identified and characterized. Finally, in the pragmatic phase, balanced or analogical elements (a) were established between the previous voices.

Table 1
Emerging thematic units

Subjectivities (Thematic units)	Univocity (u) (Benefits)	Equivocity (e) (Risks)	Analogy (a) (Opportunities)
Prosumers (p)	Creation	Consumption	AI for personal and social development
2. Disembodied (c)	New presence	Datification	AI to inhabit the digital world
3. Algorithmic (g)	Autonomy	Heteronomy	AI for decision making
4. Hyperrelated (r)	Sociability	Fictitious linkage	AI to strengthen empathy
5. Hyperinformed (i)	Communication	Superficiality	AI to deepen knowledge
6. Hybrids (h)	Diversity	Fragmentation	IA for identity development
7. Artificial (f)	Reconstruction of the self	Substitution of the self	AI for digital self

Source: own elaboration based on Beuchot's (2016) analogical hermeneutics.

Results

The results are structured from the seven emerging thematic units, corresponding with the following sections. Their descriptive presentation is developed between the utopian or univocal voices (u) and those dystopian or equivocal (e), and closes with the analogical voices (a), which synthesize the balance or *phronesis* of the impact of AIs on subjectivities.

Prosumer subjectivities (p), between creation (u) and consumption (e)

The first configuration of subjectivities is their condition of prosumers, producing and consuming that which is produced. The utopian voices (u) relate productivity with creativity. Sequeiros *et al.* (2022) propose how video games inspire individuals through the creation of avatars. This immersive experience activates emotions, challenges and competitiveness. For his part, Sadin (2022) refers to this creativity to exhibit on social net-

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works, according to one's capabilities. In particular, Instagram represents the possibility of promoting one's own image, a sort of «self-entrepreneurship of life» (p. 165).

Dystopian voices (e) consider the invasive and dynamic strategies of AIs. In terms of consumption, Debord (2008) and Sibilia (2008) sounded initial warnings about the induction of spectacle and the hatching of intimacy to be exhibited and consumed. Subsequently, neoliberalism, constituted as a dominant existential form, under the logic of the market, developed strategies of seduction, dissatisfaction and narcissism to model individuals between two opposing forms of existence (Rodriguez *et al*., 2019). In terms of Piedrahita (2014), prosumers, hedonists and narcissists, on the one hand, and social producers, generators of products, on the other.

While for Han (2014) individuals are seduced to produce content and induced to consume it, for Rodriguez *et al*. (2019) they become entrepreneurs of themselves motivated by permanent dissatisfaction and by the activation of narcissism (Pessina, 2016), which, for Sadin (2022), is reflected in the passion for *selfies*. Thus, for Sibilia (2008) *Homo sapiens* is reconfigured as a disposable and consumer individual: both «bought and sold product» (p. 35), to whom is sold the illusion of a full life or lasting happiness, through accelerated consumption (Pinedo Cantillo, 2024).

In this way, according to Pessina (2016), the productive society configures unsatisfied, undefined, confused subjectivities, with the desire to satisfy their lacks and realize their ideals. In terms of Linares (2018) they are configured as «containers that must be crammed without ever being satisfied» (p. 127), oversaturated and dulled beings who consider that they have everything, however, their reality is to consume and store more and more every day. This dissatisfaction is mixed with indignation, dissociation and disapproval of everything. In the end, an experiential dispossession or the loss of the capacity to take a position in the world is configured.

On the other hand, Sequeiros *et al*. (2022) refer to capitalist logics in video games, through avatars that dynamize degrees of immersion, emotional activation and challenges to interact with other users. Likewise, Ko and Park (2021) indicate how these created, customized or personalized avatars exert power, performance and attachment on the user's willingness to spend money on them. Creation and consumption intensifies in proportion to the user's identification with their avatars: the more they identify, the greater their sense of ownership. Thus, for Chung *et al*. (2024) consumption increases to the extent of the motivation to decorate, customize or personalize them.

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Analogical voices (a) are presented between alerts and opportunities, a *phronesis* that integrates benefits and takes care of risks. Personal and social development would be the convergence of AI opportunities in this first theme. The European Commission (2020) advocates the strengthening of creativity and productivity to contribute to the overall welfare, with the proper warnings not to become commodities. For Pedró (2019) biotechnological advances will always provide opportunities for inclusion and human and social development, with due precautions to avoid increasing inequalities.

Decorporized subjectivities (c), between new presentiality (u) and datafication (e)

The body not only establishes individual identity and makes possible its relationship with the world, but also determines its being, i.e., one does not have a body, one is a body (Ortega and Gasset, 2013). The body could be expanded through new ways of presenting oneself in the digital world. Utopian voices (u) are traced from the promises indicated, both by Sadin (2018) that devices harmonized with the body would «indefinitely increase its powers of apprehension» (p. 96), and by Linares (2018) that they would enhance its functionality to inhabit new, mixed and augmented realities, with the potential to configure sensations, emotions, thoughts and actions to it, as well as to reorder the way of conceiving and valuing them. Moreover, according to Veliev (2024), enhancing functional capabilities by means of nanodevices integrated into the body.

In contrast, inhabiting metaverses induces the blurring of the body, with the risk of turning individuals into data profiled by algorithms. Dystopian voices (e) such as Muros (2011) indicate risks of blurring and diluting the body into devices, data, nodes, networks, and algorithms, and other voices such as Sadin (2018) refer to «the dissolution of the body into digital limbos» as a «definitive victory of calculation over all organic life» (p. 150). Hence, in order to be and inhabit digital worlds, the body is no longer necessary, devices and thumbs suffice, which reveals its fragility and vulnerability (Linares, 2018).

For Linares (2018), disembodiment inaugurated new ways of acting, perceiving, feeling and thinking, altering the spatiotemporal experience of vital spheres. Moreover, the «passage from bodies to profiles» (Barrios & Díaz, 2024), i.e., bodily dispossession, configures subjectivities profiled with information, data and algorithms, and according to Pinedo Cantillo (2024) it moves from subjects to consumable data packages. This

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step begins with practices of datafication, metrification, quantification and digitization (Cabañes, 2022; Couldry & Mejias, 2019; Lupton, 2016; Moore & Robinson, 2016). In short, for Chan (2022) a «digitized self» or according to Linares (2018) a «networked individualism» that functions more as a connected individual than as a social being. Thus, Andersen (2021) refers to subjectivities that are geolocalized and naked in their tastes, fears and habits, with the risk of being manipulated and governed.

In their vital areas, subjectivities are determined as profiles, consistent or not with the individual reality, with the risk of being used to the detriment of those. For O'Neil (2017) and Cardon (2018), public systems assess and decide on these profiles, based on their data histories and the evaluations generated by others. Moreover, Feldman and Sandoval (2018) evidence how these profiled subjectivities are manipulated to match their behaviors with factors of submissiveness, quality, and assumed social normalities.

On the other hand, the profiles turn the body into capital, in terms of Piedrahita (2014) bodies of desire are configured, object of consumer aesthetics, performed and trapped in discourses of power. Asla (2019) indicates a bio-enhancement, through the reengineering of the body, a transhumanist practice that induces the obsolescence of the body, inducing the subject to be conceived as poorly constructed, rigid and unadaptable to technologies. In the end, Linares (2018) poses an ontological problem: what will happen when the extended living space breaks the limits of human corporeality, cognition and sensibility. For Sadin (2018) the new route would be an «anthrobology,» an integrative discourse between man, robot, and logos, i.e., an «unprecedented coupling between physiological organisms and digital codes» (p. 31).

Analogical voices (a) integrate opportunities to inhabit and participate as citizens in digital scenarios, with the care of the body, existential and relational place to not subscribe as anonymous profiles and commodified data. For Lozano (2016) mixed universes allow strengthening meeting spaces with the possibility of being with greater and permanent availability to participate in all vital areas, in what Huici and Dávila (2016) call an «asynchronous relational simultaneity» (p. 765).

Algorithmic subjectivities (g), between autonomy (u) and heteronomy

Utopian (u) voices (Benvenuti *et al.* (2023); Van den Berg & Du Plessis, 2023) point to benefits for cultivating individual autonomy and critical

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thinking, due to the possibilities for accessing and participating in the digital world. While for Sadin (2018) basic actions such as accessing data or taking *selfies* opens illusions of self-sufficiency, independence and greater autonomy, for Larrondo & Grandi (2021) and Linares (2018) preserving and having data in digital interfaces could be considered as a benefit for the permanent constitution of the subject, as well as for its free expression.

On the other hand, having digital information on vital aspects would allow strengthening autonomy by presenting one's own perception of reality and disassociating oneself from the crowds and herds that cohabit virtual worlds. In Sadin's (2022) words, subjectivities could construct their own narratives, make themselves heard and «wring the necks of the discourses that are supposed to emerge from the 'official' order» (p. 199).

In contrast, dystopian(e) voices such as Sadin (2022) consider that the *smartphone* creates a mirage that intermingles sovereignty and subordination or subjection to heteronomous mercantilist rules. Linares (2018) indicates the paradox of subjectivities as they move between information and ignorance. On the other hand, Veliev (2024) raises risks because of the deep link between device-subjectivity: the device went from prosthesis to absolute referent. Consequently, Sadin (2018) considers that subjectivity is configured as «a new type of domestic animal, impalpable, integrated, continuously modulable» (p. 29) and trained by the device that gives it cognitive powers superior to its immediate apprehension of things.

In another image-data integration, according to Valderrama (2017), individuals verify and authenticate themselves through their «like» responses or symbolic emoticons, with the threat of being manipulated and molded, for Piedrahita (2014), through seduction, generating simulated and impostor behaviors. Other authors evidence the integration of data-algorithms, oriented to *psyché*, with direct and indirect strategies, conscious and unconscious, to modify behaviors by influencing emotions, attitudes, thoughts, motivations, concepts, ideologies, values and identities (Veliev, 2024; Chan, 2022; Cardon, 2018).

In the data-emotion binomial, Chan *et al.* (2023) analyze immersive experiences in the metaverse related to influence on affectivity, while Daşdemir (2022) studies the relationship between visual stimuli in augmented reality applications and emotional states of immersive readers. At deeper levels, Chan (2022) refers results on the digital impact on neurobiological levels, brain function, mind and behavior.

De Vos' (2018b) interpretation goes beyond the question of how digitization shapes or alters brains, to analyze «how neuropsychological models are shaping digitality.» That is, digital platforms have already been

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instructed by psychological theories and models: «the Internet is structured like a psychologist», the network is designed to shape, guide and mold our psychology.

Moreover, ethical behaviors are also targeted by algorithmic configuration. While for Bašić and Quercia (2022) the care of self-image or social image influences individual behavior, Dear *et al.* (2019) consider that image exposure and the perception of being watched influence honest or dishonest behaviors. However, Litvinova *et al.* (2023) indicate that triggering cues about image concerns to promote honesty in the physical reality would not have the same effect in the virtual one.

There are authors who indicate risks channeled by algorithms, through configurations for colonizing, uniform and subordinate collective performances (Castellanos, 2019; Couldry & Mejias, 2019; Cardon, 2018). The shift to a collective heteronomy configures new masses converted into algorithmic data, which curtails the collective power to represent, decide and choose. According to Sadin (2018), this «algorithmic governmentality» orients political actions based on data, statistics and projective inferences leading to an «electronic administration of life» (p. 138).

Bermúdez (2017a) presents results on the subjectivities-politics-technologies relationship. Political practices are characterized by passionate, compulsive, multimodal and incidental communication with media strategies of videos, images, animations, links and messages that build a syntax with emotion, affect and discomfort. The author's research (2017b) continues to consider new digital languages and writings linked to political interests, which manage to politically subjectivize young people who produce and consume them.

Subjectivities are hidden in nicknames, which, for Shebanova and Yablonska (2019), are forms of self-presentation, with a personal purpose that would affect their emotional and behavioral performance, while for Zhou *et al.* (2021) they would be part of their identity and affect their behaviors and decisions. From another angle, Hernandez (2020) indicates risks due to the impossibility to dispose of the profiled and acquired data with or without the consent of the individual. Thus, passing or accidental situations become eternal goods that mark and bind subjects to memories and experiences. Linares (2018) refers that these profiles configure subjectivities with a certain «digital immortality» (p. 144), without the right to be forgotten.

The last dystopia is paradoxical, according to Castellanos (2019), an excess of individual autonomy, at the same time as a confused self-determination. According to Sadin (2022), the supposed power generated by the

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smartphone leads the subject to not listen to other voices, to the point of considering himself self-sufficient and supreme voice, a tyrant individual who conflates in a «mortal nihilism» (p. 272) configured in a triad: loss of his self-esteem, use of instruments that assume power (social networks) and with a vengeful will for supposed humiliations suffered. For Linares (2018) the result is a neurotic, tribal and closed-minded subjectivity, willing only to believe that of the similar group, geographically or affectively close.

Phronetic voices (a) indicate opportunities for AIs when healthier and more productive relationships with devices are strengthened, if excessive anthropomorphism and associated ethical problems are avoided, according to Sadin (2022). On the other hand, both Veliev (2024) and the European Commission (2020) invoke care to create more resilient systems with personal data and more transparent and predictable dealings to strengthen individual autonomy. The voices of Nunes *et al*. (2022) and Villalba (2020) call for safeguarding the responsibility of those involved in the chains of production, configuration and use of AIs.

Hyperrelated subjectivities (r), between sociability (u) and fictitious bonding (e)

Digital scenarios contributed to the strengthening of interpersonal relationships. Utopian voices (u) such as Suárez (2019) evidence that platforms, networks, new realities and devices delineate new forms of relationships and exchanges between individuals. In the healthcare field, Shevchuk *et al*. (2021) point out benefits for the doctor-patient relationship, through telemedicine practices, while Veliev (2024) and Ishengoma (2022) agree on the improvement of care when systems are configured with accompanying roles, communication and emotional support, as well as benefits for social connection and self-esteem in the practice of video games. Sioni *et al*. (2017) evidence the overcoming of social phobias of those who are uncomfortable with face-to-face contacts. Indirect interactions through avatars as well as virtual achievements could reinforce self-identification and a stronger and more positive sense of self.

The central angle of dystopian voices (e) is linked to the types of agents with whom digital relationships are established: real people with profiles, profiles with profiles, individuals with AIs, AIs with profiles, among others. In Bianchi's statistics (2024), these relationships integrate new actors, *chatbots*, which merits considering figures on flows and traffic operated by those: between 2013-2023 the average is 51%, with the risk that more than a third corresponds with malicious *bots*. The threat ari-

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ses if one considers that in these digital interactions there is no certainty about the interlocutors.

Consequently, while Chan *et al*. (2023) indicate that in these universes interpersonal relationships are not taken care of, Sadin (2022) refers to a mechanics that «attracts to itself an infinity of human monads that only aspire to appease their affections and to capture the attention of others» (p. 161) and in contrast, according to Pinedo Cantillo (2024), to disappear, expel or ignore the other.

For Sadin (2022), in social networks the person as an acting being is undone and individuals appear enclosed in glass cages that prohibit all listening, fruitful exchange and fruitful alliance, in other words, one lives in «the oxymoron of a collective isolation» (p. 290). Hence, its social dimension is blurred by atmospheres characterized by indifference to the presence of the other, remission to one's own fate and loneliness. The subjects do not act within the framework of a collectivity, but in their own sense, with the deterioration of interdependence ties. In synthesis, the author indicates the risk of a «fracture of society», which is no longer constituted by plural beings, but by a profusion of «monads satisfied to enjoy what suits them» (p. 134).

Another angle is the configuration of interpersonal relationships based on flattery and gratification, as well as on logics of following, viralization and replication, which illusionize with a proximity and interrelation with famous people (Sadin, 2022). For Veliev (2024) and Ishengoma (2022) the extreme risk occurs when human qualities are attributed to AIs, which would degrade interpersonal relationships of care, love and friendship, due to the substitution of the other, the reification of people and the conviction that AIs can not only imitate these relationships, but replace them. Thus, Jiménez (2019) refers underlying pathologies in practices such as marriages with holograms, and Limón (2024) reports on suicide when the sense of reality is lost and relationships with artificial creations are developed.

Finally, the neuroscientific results of Firth *et al*. (2019) refer affectations for participation and social cognition in relation to the degrees of superficiality of digital relationships. There, apparent hyper-successful individuals are shown, manipulated with fictitious images and with whom users are confronted. By generating unrealistic expectations of themselves, mental health is affected and could lead to suicide.

The *phronetic* visions (a) suggest taking care of the quality of communication and digital relationships. Turkle (2015) intercedes for conversation and its healing capacity, as well as for the rescue of spaces to normalize it. Likewise, he considers the need not to replace human inte-

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ractions with technological assistants, due to the fact that machines are not designed to embody the complexity necessary to be a human. In this sense Craig and Georgieva (2018) cry out for the use of new realities for social good and foster empathy. On the other hand, Han (2020) advocates nurturing rituals to bring people closer together and avoid alienation from human presence, and Floridi *et al.* (2018) indicate opportunities when harnessing the predictive power of AIs to strengthen human self-determination and foster social cohesion.

Hyper-informed subjectivities (i), between communication (u) and superficiality (e)

Early utopian voices (u) consider benefits for greater and instantaneous communication and information about all aspects of daily and political life, as well as for performing catharsis in the face of the anxieties of the times (Linares, 2018; Sadin, 2022). For both Benvenuti *et al.* (2023) and Marzal (2023), scientific information and content would benefit the construction of knowledge, contribute to the cognitive dimension, the development of skills and decision making.

On the other hand, Firth *et al.* (2019) evidence cognitive benefits of those who use the Internet for some brain areas, in relation to storage in factual memory due to the possibility of freeing resources and cognitive abilities and thus using it in new functions and tasks. Also, to reach new levels of human intelligence with greater analytical thinking and transactive memory capabilities in everyday situations.

Finally, for Sadin (2022) the benefits impact freedom of expression and self-determination by the possibility of accessing relevant information, which configures a new face of freedom of expression that disables the moral duty to verify individual expressions. Thus, according to James *et al.* (2023), skills and critical thinking regarding life issues could be strengthened, with the possibility of establishing equal relationships with health professionals, education, among others.

In contrast, dystopian voices (e) begin by determining the nature of digital hyperinformation. While Sadin (2022) refers to it as inflated discourses, «uninterrupted deluge of verbs», «flood of logorrhea», «perpetual tide of words» (p. 157 ff.) and warns about the risk of becoming noise that increases deafness, because the interest is not to listen, but to express each one's own opinions; on his side, Han (2020) is more concise and sharp indicating that both information, communication and calculation are nothing more than pornography of knowledge.

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Devices turned into fetishes open the risk of absolutizing hyperinformation, configuring a «new pragmatic idealism» (Linares, 2018, p. 132), in which reality is reduced to media and informational representations, filtered by individual prejudices. Thus, subjectivities slash their capacities to discover, question and experience reality, revealing themselves with a paradox: full of information, but with many unknowns at the same time. Hyperinformed, but uncritical, ignorant, superficial or semi-formed (Galparsoro, 2017; Arruda & Nabuco, 2020). Moreover, enclosed in their own information and conceptions, due to strategies of bubble filters, echo chambers and macro insinuations that do not allow them to get out of their micro universes (Castellanos, 2019; Nguyen, 2020) or in the so-called «spherization of life» (Sadin, 2022), which consists of an individual development inside a bubble, with a lot of information and directed to their particular interests.

On the other hand, excessive information, without filters for its veracity, overflows the limits of individual expression and brings the absolutization of positions. Full confidence in this information amplifies circulating tendencies, provokes inhibitory and unscrupulous escapes, with extreme risks of turning *smartphones* into «nuclear weapons» (Linares, 2018, p. 130). Thus, tyrants locked in their bubbles and a society oriented to intrusion, voyeurism, lapidary moral judgment and public lynching are configured (Sadin, 2022; Han, 2020; Linares, 2018).

Finally, Firth *et al*. (2019) evidence negative cognitive consequences such as difficulty focusing attention on cognitive activities and greater ease of distraction. Ventral brain current is lower when gathering information online, due to the failure to recruit enough brain regions to store long-term information. In addition, attention *deficits* are caused by reduced participation in academic and social activities, interference with sleep, and decreased creative thinking.

AIs open opportunities (a), according to Lozano (2016), to supply and facilitate communication between people and society, for the benefit of citizen participation. Benvenuti *et al*. (2023) indicate the care of critical thinking in the face of hyperinformation to cooperate in the construction of knowledge, while Larrondo and Grandi (2021) advocate moderation when generating content, as well as its review, analysis and monitoring.

Hybrid subjectivities (h), between diversity (u) and fragmentation (e)

Inhabiting new universes diversifies the development of *ipseity* with the same speed as advances and configures a process of identity hybridization in which *ego-related* concepts are integrated: real self (perceived as it

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is), ideal self (perceived as it would like to be), social self (as others perceive it) and ideal social self (as it would like to be seen). The utopian voices (u) start with Huang *et al.* (2021) about benefits when subjectivities freely present themselves and reconstruct their identity online, as well as effects on individual well-being in digital identity reconfiguration: happiness in presenting positive self-images, self-esteem because of selective self-presentations, autonomy and level of self-acceptance.

Chan (2022) points out benefits for self-esteem, in relation to digital self-representations that would influence their behaviors, as well as for a better expression of the «true self», rather than the «real self», i.e., in Dengah and Snodgras' (2020) terms, a selective expression of the various facets of the self and its true and diverse manifestations. Thus, creating, customizing and personalizing avatars are described as positive or desired experiences, as they allow exploring identities and relationships between real and ideal selves with their avatars. Likewise, Green *et al.* (2021) show benefits for players with low self-esteem, when they reconfigure their individual esteem by customizing positive traits in their avatars and minimizing the negative ones. On the other hand, Galvis and Obando (2016) refer to possibilities for reconfiguring genders through these virtual creations by confronting hegemonic discourses on inequalities and gender, and projecting emancipatory practices on relationships and roles. Finally, T'ng and Pau (2020) show the strengthening of motivation when players strive for achievement, express a desire for progress, face challenges and feel satisfied when they reach their goals.

Dystopian voices (e) start with the warning about an impalpable hybridization that mixes bodies and digital codes with the emergence of «anthrobiology» (*anthro-robot-logos*) in the sense of a new human condition configured, seconded or duplicated by robots (Sadin, 2018, p. 29). For Veliev (2024) and Castro (2022) this subjectivity-IA hybridization affects personality, freedom of action and poses dynamic and changing modes of individuation and delocalization of subjectivities, according to the levels of communication and invaded interiority, through stimuli to the central nervous system.

Another type of hybridization is linked to identity. While Garzón (2021) proposes a hybrid identity, social subjectivity at the same time as fictitious, an integration of the social self and the *online* self, Veliev (2024) determines «digital identity» (p. 52) as a form of self-consciousness, a bridge between physical and digital worlds, with risks for self-conceptualization, self-identification, the mind and its capacities, and for psychosocial, cultural and social dimensions. This «virtual identity» is transformed

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into a «morphodynamic-mutividual» identity, in which plural, temporal and aesthetic processes are included in simulated environments (Leyton, 2022). In this sense, Acevedo (2022) considers that this «multi-identity» is configured by the fragmentation of individual identity.

Using technologies results in releasing repressed experiences, creating avatars and entrenching oneself in fictitious selves different from what one is, according to Valderrama (2017), with the consequent multiplicity of identities and an infinity of masks in devices, networks and applications. For Turkle (2015) users decide what and how they show themselves, which ends up being the fantasy of who they wish to be, thus, for Valderrama (2017) a «proteo effect» or change of who one is would be generated, threatening self-perception and behaviors and fragmenting between identified and quantified selves. Consequently, Leyton (2022) indicates risks of supplanting, consciously or not, the personal identity by the virtual one, the real self by the virtual one, in the words of Chung *et al.* (2024): a fracture between real and ideal *ego*.

The universe of networks configures an illusory inclusion of all social classes moving at the same level, due to the possibility of inflated individual representations (Sadin, 2022). Hence, Suárez (2014) analyzes this fragmentation from the difference between person and character. The latter is constructed with data and is determined as «a life without self». In this unfolding, the persona devours the person and the digital reputation conditions the possibilities of real life and reifies identity.

If for Huang *et al.* (2021) this fracturing configures strategic, misleading and false self-presentations with affectation for self-esteem and well-being, for Lemenager *et al.* (2020) it generates deficiencies and impairments in physical, social and emotional self-conception. Both Litvinova *et al.* (2023) and Huang *et al.* (2021) report factors that reconstruct and fracture identity: attraction of partners, vanity, social compensation, self-exploration, personal safety, anonymity and online protection. They also point out strategies to alter it: modification or concealment of information, deceptive self-presentation, image enhancement and physical attractiveness, exaggeration of physical, socioeconomic and personality traits.

In the field of video games, Green *et al.* (2021) indicate the temporary alteration of the video player's self-perception, induced by mental association with his or her avatar. Ko and Park (2021) indicate that when configuring it, they represent an ideal self, with projection of another dreamed self. Sequeiros *et al.* (2022) report effects on the mind and self-image, with effects on appearances of the real self and changes in perceptions, beliefs and behaviors. Litvinova *et al.* (2023) show that identifying

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with the avatar can hide the self or also activate identities different and even opposite to real life. And Lemanger *et al*. (2020) warn about risks of discrepancies between self-image and *ego*, which would induce feelings of incompetence, anxiety, fear and depression.

Finally, both Sioni *et al*. (2017) indicate psychosocial risks such as dependence and mental health affectations. Veliev (2024) points out threats to identity formation and understanding, personal development, self-esteem, self-awareness and self-presentation. Huang *et al*. (2021) report negative psychological outcomes on false self-presentations and situations of anxiety, depression, stress, and loneliness. Fraser *et al*. (2023) evidenced risks of escapism from reality and absence of meaning in life.

Analogical voices (a) start from a fundamental aspect for identity development: the relationship with oneself. Both Huang *et al*. (2021) and Suárez (2019) point out the care of digital identity dynamics and the complexity of its reconstruction due to its fluidity and the influence of cultural contexts, personal attributes and social roles. Veliev (2024) considers opportunities to strengthen identity development when the technological impact on human beings is understood and respect for individuality and independence is taken care of. This can be integrated with equitable and inclusive platforms that address multiple factors and recognize individuals as plural beings in permanent redefinition of identity (Garzón, 2021). Finally, Turkle's (2015) metaphor related to the fourth chair poses a guiding question in identity configuration: «Who do we become when we talk to machines?» (p. 349).

Artificial subjectivities (f), between reconstruction (u) and substitution of the self (e).

The last moment arrives at an ontological issue, still under investigation: the configuration of subjectivities shifts from reconstructing to substituting the self. While Chan (2022) theorizes about the increase of the performative capacities of the individual, Arbeláez *et al*. (2021) raise ontological questions about AIs aimed at transforming the human being into a different entity.

Univocal voices (u) raise benefits for reconstructing the self by strengthening self-esteem to the extent of recognizing one's own attitudes and talents in digital systems (Sadin, 2022). The first experiences indicated by Sung *et al*. (2011) conceived digital places as creative platforms that allowed social activities, breaking spatial-temporal limitations, interaction and identity reconstruction. Later, Chan *et al*. (2023) evidenced

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immersive experiences in the metaverse with positive influence on affective states and pro-environmental attitudes. For Acevedo (2022) these experiences of video gamers indicate a «precognitive force» (p. 51) that facilitates their identity reconstruction.

Reconstructing and replacing the self is related to the creation and identification of the individual with profiles, holograms and avatars. Leyton's (2022) initial equivocal (e) voices point out risks of supplanting the real self by the virtual one, blurring and hiding the subject, replacing the individual essence, its interiority and moral ideas. Sadin (2022) refers to the generation of representations of the self and T'ng and Pau (2020) indicate degrees of identification with avatars: representations of the self, psychological attachments, affective developments, up to the consideration of the avatar as *alter ego*.

Litvinova *et al*. (2023) indicate that the initial step in configuring artificial subjectivities is their multidimensional identification with avatars created through cognitive connections, mental associations or attachments associated with assimilating desires, characteristics, values, attitudes, beliefs, norms, behaviors and psychological states. The next stage would be a kind of embodied presence of avatars, with risks of discrepancies between real and virtual selves, as well as their use to escape reality (Green *et al*., 2021). The final step, noted by Fraser *et al*. (2023), would be to experience alternative virtual lives.

Regarding affective bonds with avatars, T'ng and Pau (2020) refer to the dynamics of creation, embodiment and intensification, which leads to considering them as part of oneself and becoming equal in their actions, feelings, identities and values. Fraser *et al*. (2023) evidence attachments, emotional bonds and self-conceptions between individuals and avatars. Hence, these representations of the self reveal psychological properties, visual images of the self (Chung *et al*., 2024). In terms of Green *et al*. (2021), we have repressed versions of the *psyche*, with the risk pointed out by Leyton, (2022): «The individual portrays himself without being himself, the avatar is the image that the subject gives of himself inside an artificial space» (p. 85).

If Litvinova *et al*. (2023) indicate that the individual-avatar integration can arrive at identity substitution and become its real self or its ideal self, Veliev (2024) - in the framework of anthropomorphization or attribution of human qualities to AIs - arrives at the risk of substitution and identification with artificial beings or agencies. Chan (2022) warns about the frontier of considering them as other selves or as people through a conscious, voluntary, intentional and goal-directed process, through online access, transactions

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and communications. Eventually, the original self would be represented in the digital persona. The consequence is pointed out by Choi *et al*. (2018): the fracture between the real self and the digital persona; the former would be threatened in favor of the latter. Likewise, the other would be substituted, when created personas are equated with other humans.

The step of hybridization reaches the formation of artificial personalities. For Lazarus (2022), the subjectivities defined by their avatars are determined as digital images that draw the fugue of the subject. Moreover, they dissolve as speculative objects of digital aesthetics, in which profiles, mirrors and images are reflected. In short, these artificial subjectivities would embody algorithms that make anonymity impossible in these powerful technological industries that control their movements.

For De Vos (2018a), the ultimate point is that it is the digital avatar who is living the life of the individual, who by permanently connecting is spared the task of living. Faced with these digital *totems*, this new religion preserves the discourse of the disappearance of the believing subject, hence it could be paraphrased: it is no longer me, it is the avatar who lives in me. However, no matter how much the being is subcontracted to an avatar, the individual cannot withdraw or disappear because his existence remains.

Analogical voices (a) such as Arbeláez *et al*. (2021) warn against the ontological problem of the possibilities of AI to alter the human condition to change its identity and genetic integrity, to weaken the protagonism of people in the construction of themselves and their environment. In this configuration of artificial subjectivities, Aoun (2017) raises the need to return towards the understanding of what it means and how the human functions.

Discussion

The first point of discussion relates to the dynamics and implications of the irreversible advances of AIs. On the one hand, it is necessary to consider the complexity of these systems that integrate benefits, threats and opportunities to assess their sociocultural, economic and political influences, as well as their potential to reshape human life itself. In the face of this powerful phenomenon, the temptations of evasion or condemnation are unnecessary; the way forward is to confront it comprehensively.

In the face of Linares' (2018) consideration, the human being is not up to the power that his technological productions hold, of the capacities that exceed his representation and imagination, and of the emerging individual responsibilities, as well as in the face of voices about the decla-

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ration of obsolescence of the human and risks of dissolving the modern subject emerged from the humanist tradition as a singular and free being, conscious and responsible for his acts, now trapped between being animal and machine, between flesh and mathematics (Sadin, 2018). In the face of this Aoun (2017) raises the need to intensify the care of the human, starting from understanding what it means to be human: understanding its functioning, its new languages and the cultivation of the human in AIs.

A third aspect is the recovery of that which humanizes, the return to rituals, some more «humanizing» than others. In the face of hyperinformation and the divinization of devices, Han (2020) proposes strengthening the ritual of thinking, while Turkle (2015) defends conversation. It is necessary to recover these rituals in the sacred spaces of the person, the family and society, which have been displaced by the devices that capture individual and social attention and life.

The fourth aspect is a call to scientific knowledge that has the human being at its center. Education, philosophy, theology and bioethics should cultivate the wisdom that allows to understand and face the challenges of AIs that model with values, both character and personality (Terrones Rodríguez & Rocha Bernardi, 2024), for the sense and understanding of the human being. Prudent analysis must be a *phronetic* exercise that allows embracing the complexity of the advances of AI systems and their impact on life (Asla, 2019).

Conclusions

The study demonstrated how AIs have surpassed the external influence on life scenarios and the problematic has transgressed to an invasive influence oriented to the interiority of individuals and the reconfiguration of their identities, through imitations, representations and identifications with the new agencies created in those worlds. Likewise, the guiding idea about the impact of AI on subjectivities, on their characterization and identity was developed. Profiles, holograms and avatars not only denote new relationships, communications and bodies, but also become new forms of production and consumption and configure new subjectivities.

The interpretation of the texts allowed developing the objective of interpreting the configuration of subjectivities through strong AI systems, and through analogical hermeneutics it was evidenced how AI advances dynamize benefits, risks and opportunities for subjectivities in their integration with devices, data and algorithms.

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On the other hand, the conclusions indicate an incipient development of studies oriented to consider the impact of strong AI systems on human beings, as opposed to the abundance of research on the influence and application of these systems in the market, innovation and education. While the latest revolutions express the integration of the human in the new neurotechnological advances, metaverses, among others, research on the meaning, influence and understanding of the human still awaits results.

The topicality of the subject is traced by the open questions that allow to advance in new researches around the subjectivities in metaverses and the ontology of the new artificial agencies determined as assistants, citizens, *teacherbots,* among others. On the other hand, the challenges of the configurations of the human being, through neurotechnological, genotypic, nanotechnological and neuroscientific developments.

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The Feasibility of Turing's Child-Machine
La factibilidad del niño-máquina de Turing

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Abstract

According to the philosophers of Artificial Intelligence (AI), Turing Machines and the Imitation Game are the most important concepts proposed by Alan Turing. The Child-Machine Project, which projects learning machines via digital computers, is less known, although it is no less important. According to Turing's project, a programmed machine needs to be a Child-Machine to turn into an adult mind, one that understands, judges, and distinguishes. In this article, I argue that Turing's desideratum is not realizable only with algorithms. In the first section, I introduce the problem, while in the second I briefly analyze concepts such as algorithms, Turing Machines, and their relation. In the third section, I deal with Machine Intelligence and the Child-Machine Project. In the fourth section, I look at a form of understanding which is the basis of the Chinese Room Argument: introspection and reflective thinking, two factors that enable the process by which results are revised. In the fifth section, I analyze why those processes of revision are the stumbling block of classical AI or GOFAI; as I argue, introspection and reflective thinking are the cognitive faculties that prevent the child-machine from becoming a "thinking adult mind".

Keywords

Child-Machine, Thinking Adult Mind, Turing Machines, Algorithms, Introspection, Machine Intelligence.

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Resumen

La máquina de Turing (MT) y el controvertido "juego de la imitación" son los aportes más reconocidos de Alan Turing en la filosofía de la inteligencia artificial (IA). El proyecto del niño-máquina, directamente ligado al aprendizaje de máquinas programadas o computadores digitales, no es tan reconocido, aunque no es menos importante. Según dicho proyecto, una máquina programada debe aprender como un niño, si ha de convertirse en una "mente adulta pensante", esto es, que juzgue, que entienda, que distinga. En este artículo se muestra que ese desiderátum de Turing no es realizable mediante algoritmos. Mientras que en la primera sección se introduce al problema, en la segunda se da un breve recuento histórico de los algoritmos, las máquinas de Turing y de su relación. En la tercera sección se aborda el concepto *machine intelligence* y el proyecto del niño-máquina. En la cuarta sección se muestra que una forma de entendimiento ("la habitación china" de Searle) da lugar a la introspección y reflexión crítica, que no son reductibles al funcionamiento de programas. Finalmente, en la quinta sección se argumenta que el proceso de la introspección y la reflexión crítica, son la "piedra de tope" de la IA clásica; en efecto, es la ausencia de ambas capacidades lo que impide que el niño-MT se convierta en una mente adulta pensante.

Palabras clave

Niño-máquina, mente adulta pensante, máquinas de Turing, algoritmos, introspección, inteligencia de máquina.

Our problem, then, is how to program a machine to imitate the brain to make it think.
Alan Turing, BBC interview (1951)

Education is not the learning of facts, but the training of the mind to think.
Albert Einstein

Introduction

Artificial intelligence (AI) is a discipline that aims at creating programmed machines capable of imitating human intelligence. It is, then, an anthropocentric approach to intelligence. An interesting issue, linked to the discipline, is that Turing, who is considered one of the creators of AI, devised, in addition to the machine named after him, a method to establish whether it is justified to attribute mental states to digital computers. This method is based on a game, the famous and controversial «imitation game», described in detail below. But that was not Turing's only contribution to AI. Another that is less discussed is the child-machine project, i.e., the proposal that a computer program should be capable of learning just like a child. Such a project represents a remarkable challenge for AI, because it consists of projecting a program that learns like a child to eventually become a *thinking adult mind*. In what sense «thinking»? In that of

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understanding and judging the true and the false, the clear and the ambiguous, and the solvable from the unsolvable.

In view of Turing's optimism, the aim of this article is to examine the following problem: can the child-machine project be carried out? But the question is, why could it not be carried out? As Turing himself points out, the child-machine must become an adult mind through learning. And this, as is well known, includes a series of key faculties for the development of intelligence: memory, reasoning, introspection, critical reflection, etc. It is precisely these last two capacities that represent a crucial stumbling block for Turing's project, as examined here. Indeed, the idea defended in this paper is that the mind's capacity for introspection and critical reflection *is not reducible* to the functioning of computer programs, which are only based on algorithms with automatic information processing. Precisely, the proposed argument is that, since the algorithms are mechanical and automatic, and do not require any *insight* or introspection, they do not allow for critical reflection, which is key in a thinking adult mind. This problem is a current and controversial issue in AI, due to *deep learning*. For this reason, a conceptual analysis method is used to test whether this type of AI with its machine learning achieves *insights* and critical reflection, which are key for an adult mind to learn effectively.

The article is divided into five sections. The first section gives a brief historical account of algorithms and Turing machines; it is intended to give readers a thorough understanding of the implications of the algorithmic operation of a program. The second revolves around two problems: on the one hand, how Turing elaborated the concept of *machine intelligence*, which is fundamental for understanding classical AI and *deep learning*; on the other hand, how his proposed method for testing mental states in programmed machines became a learning project based on algorithms: the child-machine project. The third part deals with a challenge to classical - or strong, in Searle's terms (1980, 1990) - AI based on a form of understanding: linguistics; as argued on the basis of the counterexample of «the Chinese room», introspection is not reducible to the operation of programs, on the contrary, they are not capable of generating it. Fourth, the idea is further developed as to why this capability, and the critical reflection to which it gives rise, are the *cornerstone* of classical AI; indeed, without introspection and critical reflection, the mind is not capable of revising the meaning of the rules that are automatically followed, so as to actually learn. Finally, the last section examines the most important conclusions of the analysis carried out in the paper.

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From algorithms to Turing machines

The imitation of intelligent behavior is the central goal of classical AI. By classical I mean GOFAI (*good old fashioned artificial intelligence*)[1], AI that imitates human intelligence with the paradigm of rules and representations in mind. As Marvin Minsky would say: the goal of AI is the creation of machines programmed to perform tasks that require the same intelligence as if they were done by humans. Such tasks include simple activities such as playing checkers, or more complex ones, such as COVID-19 detection. In a way, GOFAI assumes that all problems can be approached algorithmically, i.e., that they can be solved by a set of finite steps, one of them being recursive. Therefore, classical AI builds machines that are able to mimic human intelligent behavior, the linguistic one, through algorithmic processing. But what are algorithms, a concept in vogue in our time?

Algorithms, despite their prevalence in today's world, are not new. They were popularized by the Persian mathematician Abu Ja'Far Mohammed ibn Mûsâ al-Khowârazim around 825 A.D. (Penrose, 1989, pp. 41-44), but they were known much earlier. For example, Euclid's algorithm, which consists of a set of rules for finding the greatest common denominator (GCM) of two integers. Given this problem, the algorithm has finite rules and steps, with the third step being recursive:

i. Divide number and divisor, noting result and remainder (R);
ii. If R = 0, *halt*;
iii. If R ≠ 0, take previous divisor and remainder to execute step 1.

We can apply an example of this process with the numbers 99 and 15:

Number	Number divisor	Result	Remainder
99	15	6	9
15	9	1	6
9	6	1	3
6	3	2	0

Then, the algorithm yields the following result: the GCM between 99 and 15 is the integer 3. Just like that, a human can *automatically operate* with Euclid's algorithm (I return to the importance of Euclid's algorithm in the last section).

Another concept that is linked to that of algorithm is that of «recursive decomposition», i.e., the simplification of a complex operation

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into mechanical steps. For example, one can decompose multiplication recursively like this, into addition and subtraction, respectively (Block, 1990, p. 256):

M x N = A
The rules of this new algorithm are as follows:
i. Add 1 times M to A and subtract 1 to N;
ii. Si N = 0, *halt*;
iii. If N ≠ 0, execute step i.

For example, 3 x 3 can be recursively decomposed into additions and subtractions, until a result is reached, algorithmically, that stops information processing.

M	x	N	=	A
3		3		0
3		2		3
3		1		6
3		0		9

Note that this new algorithm is a *multiplication machine*: it implements a program automatically and thus operates recursively by decomposing a more complex problem, multiplication, into simpler and more mechanical steps, addition and subtraction.

However, an algorithm is not exclusively about mathematics. To find the key to the lock on a key ring, an algorithm can be applied in which one recursively moves to the next key to the left if the one in one's hand does not fit. And so it can operate until it finds the key at which point the process stops. If one night, a drunken neighbor tried to find the key, he could execute the same algorithm and would do so despite being semi-conscious, because to operate algorithmically does not require consciousness, nor any *insight*. On the contrary, these are completely absent in serial processing.

Precisely, algorithms are machines because they are operated automatically, based on a mechanism that is recursive. It is worth noting that no introspective effort, *insight* or ingenuity is required to implement an algorithm. For example, the inebriated neighbor could search for the key while semi-conscious (*i.e.*, sleepwalking) and still implement the «find the key» algorithm mechanically.

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The presence of algorithms is impressive today (*cf*. Kowalkiewicz, 2024). They are everywhere because they are the essence of what computing is and of the enormous facilities it provides. Such action processes information, transforming *inputs* into *outputs* automatically and mechanically, on the basis of a program that includes rules for the transformation expressed in conditional formulas of «If... then...». Therefore, running a program consists of the implementation of an algorithm capable of processing information. This is why the concepts of algorithm and computer program overlap. A program operates algorithmically, while an algorithm is a program for solving a problem.

Turing (1936) was —from a historical point of view—the one who clarified the definition of computation. He did so by introducing a definition in the form of an abstract machine, the so-called Turing machine (TM). In particular, TMs were postulated as a way of addressing the *entscheidungsproblem* posed by the mathematician David Hillbert. In view of this problem, we try to determine whether an algorithm X enables us to infer by means of a computable function all the theorems of first-order logic (formal language with quantifiers that reach variables of individuals, with predicates and functions whose arguments are constants or variables of individuals). This section does not delve into the *entscheidungsproblem* itself, suffice it to say that, thanks to it, Turing devised TMs as abstract devices that define precisely what it is to compute. Moreover, as a result of this problem, Turing aimed to find a method to characterize all computable functions.

Computing is, then, transforming an *input* into *output* on the basis of a set of rules or a program (and, therefore, an algorithm). In fact, a TM simply implements a computable function, which is linked to two fundamental notions: «machine» and «mechanical procedure» (we return to these notions below, in the light of the analysis of the *machine intelligence* concept). An TM is precisely a mechanical device that implements definable computational procedures by means of finite steps, i.e. it implements an algorithm. The TM has a discrete set of possible states that are finite in number (although potentially huge). This gives such a machine a very large (but finite) number of possible computations.

The *inputs* (*i. e.* numbers) are unlimited in size and the external storage capacity of the TM, where it writes, or the tape, is unlimited, as are the *outputs.* The TM, by definition, does not internalize external data or computations, but operates on the given data or computations in the most immediate operations. This idea is crucial to understand why a TM does not require *insights* and introspection (discussed again below).

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As Penrose (1989) points out, the unlimited size of *inputs* and *outputs*, and the unlimited storage capacity of the tape, which is infinite, account for the highly idealized, abstract and mathematical character of a TM: «It is the unlimited nature of the *input*, the computational space, and the *output* that indicates that we are dealing with a mathematical idealization rather than something that could be constructed in practice» (p. 35) (own translation).

Thus, an TM usually characterizes as an infinite tape, with a head that reads and writes symbols according to a program (the rules of the algorithm). The head «remembers» some of the symbols: it is in an internal state $_{q1}$, $_{q2}$, $_{qn}$, etc., at a time $_{tn}$. Then, by reading a symbol (the *input*) and being in an internal state, it will generate an *output* depending on the program, which will lead the TM to delete or keep the symbol read, and move to a new state, if so stipulated by the rules.

For example, it is possible to make a TM add 3 + 2, with integers (Kim, 2006, pp. 125-128), given the following tape state (in this notation the number *n* is represented by the sequence of *n*, where each one occupies one square and only one):

#	#	1	1	1	+	1	1	#	#
		↑q_0							

It is important to note that all the instructions of a TM, which is discrete states[2] or clicks, are expressed in a machine table. In this case, the actions are described by the rules of the following program:

	q_0	q_1
1	1D q_0	# Halt
+	1D q_0	
#	# I q_1	

What the machine will do is that, given the internal state $_{q0}$ of the head, it will read *input* 1 and generate *output:* not write, move to the right and continue at $_{q0}$:

#	#	1	1	1	+	1	1	#	#
			↑q_0						

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Then, it will read the next 1, not write, move to the right and continue at $_{q0}$:

#	#	1	1	1	+	1	1	#	#
				↑q_0					

Then, when reading the third 1, it will not write, it will move to the right (and continue in $_{q0}$), as we see below:

#	#	1	1	1	+	1	1	#	#
					↑q_0				

Subsequently, something «novel» will happen: it will read the *input* +, change it to a 1, move to the right and continue at $_{q0}$:

#	#	1	1	1	1	1	1	#	#
						↑q_0			

When it finds the next 1, it will leave it untouched, move to the right and continue at $_{q0}$. And it will do exactly the same with the next 1:

#	#	1	1	1	1	1	1	#	#
							↑q_0		

Again something new will happen when it reads # and is at $_{q0}$. Then, the *output* it will generate will be: it will not write, will move to the left and go to $_{q1}$:

#	#	1	1	1	1	1	1	#	#
								↑q_0	

Finally, being at q1 and reading 1, it will write # and *halt,* as illustrated*:*

#	#	1	1	1	1	1	#	#	#
							↑q_0		

Consequently, the TM processes algorithmically, based on the rules of a program, indicated in the machine table, with the rules of this one, which are expressed in conditionals of the form «if... then...». And

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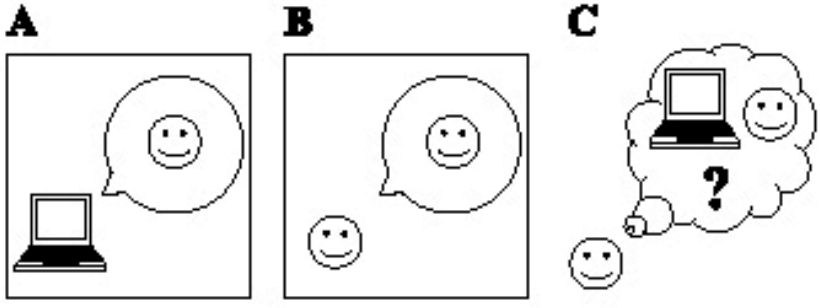
so, supposedly, it solves all problems requiring algorithmic solution. It is important to note that all problems, according to Turing, can have an algorithmic approach, even when learning is required. This is precisely what inspired him to conceive the child-machine project, as discussed in the next section. This project was born precisely as a consequence of eliminating the question «can machines think» (Turing, 1950).

Machine intelligence and Turing's machine-child project

Despite its presence today, the concept *machine intelligence* was originally conceived by Alan Turing in the 1950's. Bearing in mind the problem of linguistic understanding and how it represented a key to assign mental states to machines, Turing devised a way to evade the question «can machines think?». He did so for the following reason: the terms «think» and «machine» can generate dissent, in the face of people's alternative usages, which can lead to a sort of Gallup-type poll. In effect, Turing wants to move away from definitions, by leading to the uses of the concepts.

As a way of evading the analysis of the terms «thinking» and «machine», Turing proposed an empirical method to gather evidence of the existence of mental states in programmed machines: the imitation game. Although there are at least two versions of the game[3], tradition has interpreted it as a kind of standard version, as illustrated in Figure 1. In this version, the game consists of a programmed machine impersonating a person, fooling interrogators (Saygin *et al.*, 2000), while a person answers truthfully from a second room. The judges or interrogators, after five-minute rounds of questions, are tasked with discerning whether they are in the presence of a machine or a person, based on the typed answers alone.

Figure 1
Standard illustration of the «imitation game»



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Now Turing describes precisely: who can be interrogators and what kind of questions can be asked. Regarding the first point, he argues that the interrogators have to be "average", i.e., they cannot be specialists in computer science or similar, because this would give them an advantage with respect to discovering the machine. Regarding the second point, he specifies that the questions have to be average as well, so as not to give an obvious advantage to humans. Consequently, the interrogators and the machines must be average so as not to give humans an advantage in discovering the machines. But which ones can participate in the game?

Turing states that the machines in question are digital computers (programmed machines). These have the basic architecture of processing, drive and control in their operation. Moreover, they are digital because they operate by manipulating symbols according to the rules of a program. Hence, digital computers process information syntactically, given the algorithms they implement (we return to the importance of syntax in symbolic manipulation below).

Keeping in mind the imitation game -in its standard version- and the participants in it, Turing (1950) made a prediction:

> I believe that in about fifty years it will be possible to program a computer, with a memory capacity of[109], to participate in the Imitation Game so efficiently that a lay interrogator will have no more than a 70% chance of making the correct identification after five minutes of interrogation. I think the original question, can machines think, is too absurd for further analysis (p. 49).

Of course, Turing's prediction is as controversial as his test and is so for two important reasons. First, it fails to realize that the context of the prediction involves the philosophy of mind and AI. Second, the discipline of AI philosophy begins with a particular description by Babbage (in Swade, 2000) of one of his machines:

> Babbage speaks of *teaching the machine to foresee* [...] At other times he states that the machine *knows*. [...] The analogy between these acts and mental processes forced me to the figurative use of such terms. The use of these was found to be economical and expressive, and I prefer to continue to use them rather than substitute long circumlocutions (pp. 103-104) (own translation) (emphasis added).

Babbage doubts that his machine can be assigned mental states in an entirely literal way. Instead, he proposes that such adjudication is done by conceptual economy, or as a way of avoiding long circumlocutions. In this way, Turing's prediction is relativized in the field of philosophical

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reflection, which attempts to examine and argue regarding the existence of mental states in programmed machines. But Turing (1950) faced two even more serious objections, as detailed below:

> Could the machine do anything different from what man does? This objection is very powerful, but we can say that, nevertheless, if a machine can be built to play the game of imitation successfully, we need not take it upon ourselves (p. 42) (own translation).

He then proceeds to ask the following question, with an objection that has important philosophical overtones because of the type of situation posed, clearly hypothetical: «We are not asking whether digital computers can perform well in the game, or whether there are in the present, but *whether there are imaginable computers that could perform well*» (p. 43) (own translation) (original emphasis).

As can be seen, Turing proposes a sort of thought experiment in relation to the intellectual capacity of digital computers. There must be *possible digital computers* that can pass the test. If, optimistically, it is assumed that there can be such digital computers, the question is: in what sense must they be intelligent in answering the questions?

After anticipating a number of possible objections to the prediction[4], Turing concludes that the best way to conceive of a digital computer capable of performing well in the imitation game is by learning. But not just any learning, but that of a child-machine. With this, Turing puts on the table that it is through education and learning that we will be able to have programmed machines that can *imitate intelligent human behavior*. In what sense of «imitate»?

A question that is important to clarify is the type of functionalism to which Turing finally ascribes (Putnam, 1967, 1968). In view of the game of imitation, it is not necessary to replicate the physical or biological properties of the brain, since the game allows differentiating mental capacities from such properties[5]. According to this type of TM functionalism, it is better to imitate the mind of a child, since it is like a notebook, with simple (programmable) mechanisms and blank pages. This is key to understanding how Turing argues that the mind can be mechanized and that any successful imitation of the machine-brain will replicate it and its intelligent capacity. Thus, the mind of a child-machine can be transformed into an adult mind and will do so in terms of how one who thinks, reasons and understands learns (Feldman, 2009, pp. 70-72).

Turing's (1950) words regarding his project of the machine-child are as follows:

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> In the process of trying to imitate a human mind we are conditioned to think quite a bit about the processes it was subjected to in order to arrive at its present state. We can note three components:
>
> 1. The initial state of mind at birth;
>
> 2. The education it has received;
>
> 3. Other experience, not describable as education, that it has had.

Turing (1950) proposes, then, in the following way a specific type of learning, to imitate what an adult mind does. For that purpose, he even assumes that a child's mind has mechanisms that may be, by all accounts, algorithmic:

> Instead of trying to produce a program to simulate the human mind, why do not we rather try to simulate one that is like that of a child? If subjected to proper education, one would get an adult mind. Perhaps the child's brain is something like a notebook one buys at an office supply store. Little mechanisms and a lot of blank pages (p. 62) (own translation).

The question remains, however, whether the child-machine project is viable as Turing originally conceived it. Precisely, in the following sections it is shown that, since there are parts of learning that depend on introspection, the child-machine project is not feasible in the way Turing thought (*i. e.* only by means of algorithms). There are difficulties in principle for a child-machine to transform into an adult mind, which is precisely what Turing proposed to conduct the long-term AI project.

«The Chinese room» and its Cartesian puzzle

One issue worth emphasizing is that, in addition to the behaviorism that is attributed to it, the Turing test is underpinned by a kind of Cartesianism. This is because, as we know, Descartes (1994, pp. 112-113) proposed that there are two unequivocal signs of intelligence: the use of conventional linguistic signs and intelligent action, guided by reasons. In relation to the first point, the French philosopher states that only human beings are capable of using conventional signs, since animals are only capable of using natural signs. For example, John is able to say «I love Mary» or «Mary is loved by me», two sentences that mean the same thing. In contrast, animals are only able to react to stimuli in a natural way. If a dog's leg is pricked, it will howl in pain and it will do so because of its own nature, i.e., because of the disposition of its organs. On the other hand, John can give

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reasons for why he loves Mary, but Bobby, John's dog, only acts according to the propensity of his organs when he howls in pain.

Turing inherits a Cartesian prejudice, namely, that the use and handling of language is a sign of intelligence (Descartes, 1994, pp. 112-113). In this sense, the game of imitation is nothing more than a sequel to Descartes' ideas regarding reason and intelligence. Indeed, the fact that the digital computer, with adequate programming, storage and speed, is capable of responding as a person would, deceiving interrogators, indicates that language or linguistic behavior is that which makes it possible to *verify the existence of intelligence*. Note that, although Turing argues that *there should only be possible computers* that pass the test, doing so indicates that we are in the presence of an acid test of intelligence, at least with respect to the existence of mental states in programmed machines.

But there is another Cartesian element that must be emphasized, and that is the question of linguistic understanding. This can only be detected internally. John Searle (1980) is emphatic when he speaks of his thought experiment against GOFAI, which he calls "strong AI" (p. 67). The Chinese room thought experiment is intended against the thesis that the mind is a computer program or *software*. In the room, Searle is a native English speaker, who speaks some degree of French and no Chinese. How does he know this? Internally: if an Englishman is presented, he will understand everything he says; if a Frenchman is presented, he will understand part of what he says; if a Chinese person is presented speaking to him, he will understand absolutely nothing. Consequently, it is examined and determined whether a language is understood internally, thanks to introspection (more on this point below). How could programmed machines understand a language, then?

Two GOFAI researchers, Roger Schank and Robert Abelson (1977), conceived of linguistic understanding in an anti-Cartesian way, i.e., by appealing to the recursive decomposition of elements. As will be recalled, this goes from the complex to the simpler, until a level of mechanical simplicity is reached. For example, what do you do when you have to understand a word? Understanding a word is possible because there are three clearly differentiated stages: that of bringing it in, that of matching it with a list to make it fit with some other word, and that of retrieving the associated syntactic and semantic information. It is important to note that these three levels are mechanical, because they bring in, collate and retrieve information, respectively. According to this model of understanding linguistically, there is no sort of Cartesian *self* that thinks and corro-

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borates what the word means. On the contrary, there are only mechanical, algorithmic steps that process information.

Now, Schank and Abelson's theory can be extrapolated to understanding stories and answering questions about information that is not explicitly developed in them. Such a question is asked by a programmed computer: SAM (*script applier mechanism*)[6]. The system operates in a similar way to understanding a word: there are a number of *scripts* or stories stored in memory, there are stories that come in, these are matched with the first ones, and then questions can be answered about information that is not explicitly stated. One point worth noting is that an ideal version of SAM would certainly pass the Turing test. That is, depending on the *scripts*, and the stories, the computer might be able to provide information that is not directly alluded to in them, which certainly counts as intelligent behavior. However, Searle does not think that SAM understands stories and is intelligent. That would only occur if strong AI were true.

On the basis of what Schank and Abelson (1977) advocated, Searle (1980) is determined to show that strong AI is a false theory. One way to show the falsity of a theory is to ask what would happen if the mind operated in accordance with it, i.e., what would happen if the mind operated in accordance with the postulates of strong AI; consequently, he proposes to falsify it by indicating what would happen if the mind operated in accordance with this theoretical approach.

Thus, we return to the scenario of the thought experiment. As known, in Chinese there is no alphabet, but ideograms, i.e., pictorial representations of events, things, and so on. Chinese speakers know the meaning of ideograms by virtue of their form, which is essential to the thought experiment and to the fact that computing is manipulating symbols based on that form and rules. The speaker is locked in a room, which has an *input* slit, an *output* slit, a data bank of Chinese *scripts* (which he only sees as meaningless symbols) and a rule book for manipulating the symbols. Now, there are a number of native Chinese speakers outside the room sending ideograms through the *input* slit. The subject takes those ideograms, compares them to the data bank, and proceeds to manipulate those symbols by virtue of their shape, thanks to the rule book, which is written in English. The rulebook stipulates that if, for example, ideograms 81, 99 and 100 are together, the subject must send ideograms 1 and 7 through the *output* slit.

Of course, the subject has no idea what he is doing with the ideograms, except manipulating them. In fact, he only manipulates symbols syntactically by virtue of their form, and thanks to the rules of the book.

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He does not understand, then, what the ideograms mean, let alone understand that native Chinese speakers are sending him stories and questions to get answers through the *output* slit. The speakers could even be insulting the subject of the experiment and the subject would not notice in the least. One thing is clear, given the Chinese room scenario, the individual has no linguistic understanding of Chinese whatsoever, nor are there any associated mental states. He just manipulates symbols without knowing what they mean and despite the fact that the Chinese speakers believe that there is another Chinese speaker locked in the room. In other words, the symbols are just forms manipulated by virtue of the rules of the book, in the case of Searle, who does not understand what all this symbolic manipulation is about. The attentive reader will recall that the scenario described is analogous to the Turing test, but there is an important difference with it. In the case of the imitation game, Turing's prediction is that in the year 2000 the average interrogator will have no more than a 70% chance of discovering the computer. However, in the Chinese room all the interrogators (*i. e.,* the native Chinese speakers outside the room) are fooled.

There are a number of objections to the Chinese room thought experiment[7]. Two are the most popular and seductive. The first is that Searle is only part of a system. The whole of it possesses linguistic understanding of Chinese, even though there is no clear *locus* of that understanding. Searle, then, cannot claim that the totality of the system has no linguistic understanding, since it is likely that the room, plus the slits, the data bank, and the rule book are capable of understanding Chinese. This philosopher defends himself against the system objection by emphasizing that if the room understood, all sorts of subsystems could have mental states without our knowing it. He even asserts that he could internalize all the elements of the room, such as the *input* slit, the *output* slit, the data bank and the rule book (which he could memorize). All symbolic processing could then be done internally. Given the importance of this point, I return to it below.

The second important objection is that of the robot. According to this objection, if there were a robot that causally anchored symbols in the environment through the use of transducers, it could understand the meaning of Chinese symbols. Clearly, this objection adds a novel element: that symbols have meaning to the extent that they are anchored in the environment. Searle answers this objection with a new thought experiment: he is now in the robot's head, receiving Chinese symbols from the transducers, and sending Chinese symbols to the robot's moving elements, so

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as to produce the appropriate response. Surprisingly, the Chinese room scenario is replicated again, because it receives symbols whose meanings it does not know, and sends symbols, whose meanings it also ignores. Consequently, the robot does not seem a sufficiently convincing argument, at least as far as linguistic understanding is concerned.

In this regard, it is clear that both the system and the robot are based on a Cartesian element. Think of Searle's scenario internalizing the elements of the system. However, there is only one element that he cannot internalize: himself. Thanks to introspection he can realize that he understands English and not Chinese. In other words, if Searle were to internalize all the elements of the system, there would be only one that he could not internalize, namely himself, who is the one running the experiment. This is why the Chinese Room has, despite Searle, a Cartesian bias (Gonzalez, 2012). It has it because, like most mental experiments about the nature of the mind, it is introspection that is in charge of indicating in what way what is described by a theory is true or false. In the case of the Chinese room, introspection would show, according to Searle, in what way the strong AI is false[8].

Introspection cannot be reduced to the operation of an algorithm. This Cartesian element of introspection involves a bias that cannot be characterized algorithmically, as discussed below, and which is linked to critical reflection.

Introspection and critical reflection are the «stumbling blocks» of classical AI

In this final section, we show in what sense introspection cannot in principle be reduced to the operation of algorithms. If this is so, the child-TM learning project falters. It does so because there is a good portion of such learning that, analogous to linguistic understanding, depends on introspection, which leads to the realization that an algorithmic process is, for example, wrong to achieve a result. And the reverse is also true of algorithms: it is not necessary to have *insight* or introspection to reach a result. Recall Euclid's algorithm: to determine the MCD of 99 and 15 a series of steps were followed, in a mechanical way, until the result was reached, 3 is the MCD of both numbers. While it could be argued that the machine could understand that 3 is the MCD of 99 and 15, such an assumption would be doubtful if one assumes an additional element: that the machine could employ a faulty algorithm, with rules that lead to a *loop*, to recursion without stopping, when trying to find various MCDs

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with wrong rules. In such a case, the machine could not be said to understand the result. Then, there is a crucial difference between understanding a problem and solution, and not doing so.

For example, if a programmed machine were instructed to follow finite rules to find an odd number by adding two odd numbers, the programmed machine would not find the solution to the problem, because the problem simply has no solution. Indeed, would the machine understand that the *loop* without stopping is the product of an algorithm that seeks the solution to a problem that does not have one? Discovering such a difficulty is part of a process involving introspection, which is necessary in order not to follow meaningless rules. In view of this difficulty, one could conclude that algorithms are too serial and linear, and that since they do not resort to a process of introspection, which facilitates critical reflection, they are not able to establish that there are some rule-followings that simply do not make sense.

The automatism of the algorithmic steps does not lead to any conscious psychological experience, as is the case with the Chinese room. In the case of 99 and 15, and their highest common denominator, there is no psychological experience in relation to mathematics. In fact, the algorithm could be followed by someone ignorant of mathematics, as well as by an expert in it. Neither would have any interesting psychological experience associated with the execution of the algorithm, and for this reason no conscious mental states are produced in any sense. Thus, no agent following the rules of Euclid's algorithm will have a conscious psychological experience associated with following those rules. The same, *mutatis mutandis*, is true of the algorithm for obtaining an odd number by adding two odd numbers. Just as there are no conscious states associated with the execution of Euclid's algorithm, there are no conscious states associated with the execution of a failed algorithm, which is key to the machine not understanding that the problem is nonsense.

As Penrose (1989, pp. 141-143) emphasizes, the *halting problem* is insoluble if there is no conscious introspection and experience associated with mathematical *insights* (mathematical intuitions) that indicate whether, for example, a mathematical problem is unsolvable. To some extent, classical AI pays a high price, because of the nature of the algorithms. Since they do not require *insights* or introspection, all the negative consequences follow in relation to solving problems whose solution does not have an algorithmic approach. In relation to what has been examined in this section, it turns out that the child-machine could not become an adult mind, because thanks to introspection, only introspection is able

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to make an agent realize if an algorithm will stop. The TM-child, lacking introspection, will fail to realize and understand the non-solvability of some mathematical problems, which makes it unable to become a conscious adult mind, i.e., capable of critical reflection and understanding in the face of the meaninglessness of a problem.

Such critical reflection follows a pattern very similar to Socratic reflection, key to certain educational processes, as it is a constant search for truth through irony and *elenchos* (*i. e.*, refutational questions that make sense only in the context of certain statements). Just as critical reflection in the case of algorithms, *elenchos* illuminates the typical critical reflection of an adult, who doubts, who understands, who affirms, and who is key to applying the Socratic method, which questions the meaning of some statements. Contrary to what Corballis (2007) believes, with his thesis about recursion as a unique characteristic of the human species, the educational process that leads to a thinking adult mind cannot rely solely on such recursion. It leads to automatic and serial cognition, which rightly lacks critical reflection, and the typical process of the adult mind that doubts and returns to itself through introspection. In fact, this cognitive process can be related to the imaginative, interpretative and generative capacity of thinking, which, despite Corballis, is not the product of a mechanical process. Thinking is, in a Socratic sense, questioning, imagining and interpreting contextually. Precisely in relation to the introspection and critical reflection typical of an adult thinking mind advocated here, Bailin and Siegel (2002) emphasize that:

> Thinking that is primarily driven by the evaluation or critique of ideas or products *is not algorithmic, but has a generative and imaginative component.* The application of criteria is not a mechanical process, but involves the interpretation of circumstances, and an imaginative judgment regarding the applicability of criteria in different circumstances, and whether the criteria are satisfied (p. 187) (own translation) (emphasis added).

Certainly, the so-called Socratic method is intimately linked to this generative, imaginative dimension of thought, which consists precisely in not following rules automatically, and in questioning the meaning or meaninglessness of some of them. In fact, from the point of view of empirical evidence, there are studies that suggest that the critical reflection typical of adults is key in relation to positive results in higher education. Despite Turing, there is empirical evidence showing how humans become thinking adult minds, and how this unique feature of the human mind enables academic achievement. In fact, there are studies that rightly ex-

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plore the relationship between reflective thinking, critical thinking, self-monitoring, and positive outcomes in college education (Ghanizadeh, 2017). Another study comes to similar conclusions: critical, reflective, and creative thinking is critical to academic achievement (Akpur, 2020).

In summary, algorithms enhance learning, but they also have important limitations. By not requiring introspection, they make the associated problem solving simply non-existent. An old and simple algorithm, such as Euclid's, shows precisely how introspection is completely absent in information processing, with all the negative consequences that follow. The questions are: Would Turing have the same enthusiasm for the child-machine learning project if he had realized the limitation of algorithms? Would he have defended the idea that the child-machine can learn based on them and become an adult-mind, without the capacity for critical reflection? An intuitive answer to both questions is that the philosopher and mathematician might not have argued so passionately for the possibility that programmed machines can learn without developing a kind of Socratic reflection. Or, at least, that a child-machine can eventually become a genuine adult mind by learning *only with the help of algorithms*, which is the purpose of his controversial AI learning project.

Conclusion

This paper has developed an unavoidable problem for classical AI or GOFAI: that algorithmic processing leaves out introspection and critical reflection. In particular, it has been examined how negative consequences follow from the absence of both of these cognitive processes, which are key for a child's mind to transform into a truly thinking adult mind.

To show the problems of classical AI or GOFAI, the operation of simple algorithms, such as Euclid's, or of some that do not have detention, such as the aforementioned search for an odd number by adding two odd numbers, has been described. In both cases, what was stated above is confirmed: that the absence of introspection and critical reflection represents a stumbling block for genuine learning, especially in the child-TM project mode. Indeed, this lack limits what he projects, particularly in terms of how a mind can fail to follow rules automatically.

To reach such a conclusion, five sections have been developed. The first consisted of presenting the problem to be examined in the essay. The second, on the other hand, gave a historical account of algorithms and their relation to TMs. The third section addressed the concept of *machine*

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learning, as Turing understands it, and how this concept relates to the child-machine learning project. The fourth section discussed the Chinese room problem and how the Chinese room leaves out understanding, introspection and critical reflection, all key cognitive processes for learning. The fifth and final section addressed why these processes are the cornerstone of classical AI. In particular, it was examined in what sense the algorithms leave out introspection, which has negative consequences for the child-TM learning project. Indeed, such a project is limited to pure information processing and, consequently, difficulties for the child-machine to transform into a thinking adult mind.

Following similar guidelines to Weizenbaum (1984) and Smith (2019), who explore the shortcomings of AI in terms of developing the ability to judge without ethical commitment and responsible action, it has been criticized how the child-TM project responds to *an exclusively algorithmic conception of intelligence*, i.e., which only relies on the operation of a programmable machine that calculates and processes information by manipulating symbols through the rules of a program. Because of its algorithmic character, introspection is left out, and difficulties such as the *halting problem* remain unsolved. All problems that are solved by appealing to introspection and reflective, imaginative and critical thinking are also left out. It is worth asking, then, can the adult thinking mind be mechanizable in purely algorithmic terms, as Turing claims? Can such a thinking mind be reached by a child who only learns on the basis of algorithms? Here the answer has been negative: the child-machine project is not feasible as Turing conceived it, i.e., only in terms of algorithms, since these are incapable of generating introspection and reflective-critical-imaginative thinking. The algorithmic learning project lacks these fundamental processes in education, despite philosopher-mathematician Alan Turing's determined defense of his machine-child.

Notes

1 In this paper, GOFAI and classical AI are used interchangeably. Later, it refers to how cognitivism is embodied in what Searle calls strong AI. In a way, all these terms mean the same thing, because the basic assumption is that the mind is, as a matter of fact, a programmed serial and algorithmic processing computer. That is, GOFAI, classical AI, cognitivism, and strong AI all rely on one theory, namely, the computational theory of mind (as described by Block, 1990).

2 By discrete states it is meant that a TM cannot be in degrees, but in limited, precise, definable states. For example, 1.5 is graded between 1 and 2, whereas 0 and 1 are discrete states.

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3 For a more thorough examination (*cf.* Gonzalez, 2015). This essay shows why the identification of the gender of the participants is not casual in the Imitation Game: to have the female linguistic behavior does not require having the female brain, which shows the crucial difference between the physical properties of the brain and its intellectual capabilities.

4 Turing advances nine possible objections to his Imitation Game: the theological, the heads-in-the-sand, the mathematical, the consciousness argument, the multiple disabilities argument, the Lady Lovelace argument, the continuity of the nervous system, the informality of behavior, and the extrasensory perception argument (Turing, 1950, pp. 49-60). For reasons of space only these objections are mentioned here.

5 Turing, despite the comments of some (*i. e.* Block, 1990, pp. 248-253) is not a behaviorist, but a functionalist. One can review how TM functionalism is antibiological (Putnam, 1967, 1968; Block, 1990, 1995; Heil, 2004; Gonzalez, 2011).

6 For a review of how SAM works one can review the works of another *chatbot*: ELIZA (Weizenbaum, 1984).

7 *Cf.* Block (1995) and Preston and Bishop (2002).

8 For reasons of space we only record that, given the objections to the thought experiment, the Chinese room raises reasonable doubt that strong AI is true. But it is less clear that Searle's thought experiment definitively disproves strong AI. Thus, downgrading the result of the thought experiment to reasonable doubt rather than refutation saves the objections of the system, the robot, among many others.

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Critical Phenomenology of Prompting in Artificial Intelligence

Fenomenología crítica del prompting en la inteligencia artificial

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Abstract

This paper analyzes the philosophy of *prompting* as a tool within the context of the rise of Artificial Intelligence (AI), particularly in large language models (LLMs). The topic is justified by the need to understand the *prompt* as a mediating space between human intentionality, language, and the sociopolitical structures that shape interactions with these technologies. The central objective is to examine how *prompting* reflects ethical, ontological, and epistemological tensions that arise in the construction of meaning within AI systems. Methodologically, the study adopts a critical-phenomenological approach, combining first-person experiences (user) with practical experimentation of *prompts* in different scenarios. The results demonstrate that the *prompt* is not merely a technical instruction but a discursive practice, where human decisions, such as the configuration of "parameters" (e. g., temperature and Top P), directly influence the outputs generated by AI systems. While these decisions appear technical, they carry significant ethical and epistemological implications that demand critical examination. The study concludes that it is essential to adopt an interdisciplinary approach that integrates technical development with philosophical reflection. This approach would foster an ethical, conscious, and responsible use of AI while recognizing the central role of humans in interactions with these emerging technologies.

Keywords

Artificial Intelligence, Phenomenology, ChatGPT, *Prompting*, Language Models, Discourse.

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Resumen

El artículo analiza la filosofía del *prompting* como herramienta en el contexto del auge de la inteligencia artificial (IA), particularmente en los modelos de lenguaje a gran escala (LLM). Se justifica por la necesidad de comprender el *prompt* como un espacio mediador entre la intencionalidad humana, el lenguaje y las estructuras sociopolíticas que configuran la interacción con estas tecnologías. El objetivo central es examinar cómo el *prompting* refleja tensiones éticas, ontológicas y epistemológicas que emergen en la construcción de significado dentro de sistemas de IA. Metodológicamente, se adopta un enfoque fenomenológico-crítico, que articula la experiencia en primera persona (usuario) con experimentación práctica de *prompts* en distintos escenarios. Los resultados evidencian que el *prompt* no es una simple instrucción técnica, sino una práctica discursiva en la que decisiones humanas, como la configuración de parámetros (temperatura y *Top P*), influyen directamente en los resultados generados por los sistemas de IA. Estas decisiones, aunque técnicas, poseen implicaciones éticas y epistemológicas que requieren ser analizadas de manera crítica. El estudio concluye que es fundamental adoptar una aproximación interdisciplinaria que combine el desarrollo técnico con la reflexión filosófica. Esto permitiría promover un uso ético, consciente y responsable de la IA, al tiempo que se reconoce el papel central del ser humano en la interacción con estas tecnologías emergentes.

Palabras clave

Inteligencia artificial, fenomenología, ChatGPT, *prompting*, modelos de lenguaje, discurso.

Introduction

Interest in artificial intelligence (AI) has reached unprecedented levels. The emergence of ChatGPT 3.5 brought AI into the homes and daily lives of millions of people in the form of chatbots. However, this interest did not stem solely from its technical potential but also from the transformation it brought to communication and the societal realm in general. This article explores these changes from a philosophical perspective, focusing specifically on the concept of the prompt.

Various studies have pointed to the medium- and long-term impact these new tools may have on the labor market (Zarifhonarvar, 2023), while discussions are underway about their positive and negative effects on education (Silva & Janes, 2022), politics (Hartmann et al., 2023), and society (González, 2024). Although this article does not aim to exhaust these debates, they frame the context in which the prompt emerges as a crucial site of analysis.

A prompt is an instruction, question, or information given to an AI system to either generate a response or complete a task. Depending on the complexity of the task, prompts can range from short questions to in-depth descriptions. Therefore, understanding the prompt is key to grasping how AI reshapes human-machine interaction at its most fundamental level: that of the *first-person experience* of a user in front of their computer.

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Responding to this need, I adopt a *critical phenomenological* perspective (Weiss et al., 2019), i.e., a philosophical approach rooted in Edmund Husserl's methodology while integrating insights from thinkers such as Merleau-Ponty, Jean-Paul Sartre, Emmanuel Levinas, Michel Foucault, Frantz Fanon, and other post-phenomenological scholars. The aim of adopting this perspective is to complement the phenomenological first-person description of the prompting experience (or the user experience) with what I term *experimental prompting analysis*. By this, I refer to a methodological practice involving concrete tasks and iterative prompting exercises aimed at analysing and interpreting chatbot responses. These exercises range from simple interactions—such as basic questions within the chat interface—to more complex experiments involving the manipulation of parameters or system-level instructions. The responses are documented, thematically categorized, and subsequently interpreted in light of broader philosophical and epistemological frameworks.

The central research question thus becomes: *How does philosophy, through a critical phenomenological lens, explain human-machine interaction in large language models such as OpenAI's ChatGPT*? In response, I hypothesize that prompting, while serving as the primary mode of interaction, is not merely a technical instruction but a mediation space where human intentionality, socio-political contexts, and technological structures converge. As the key interface between humans and chatbots, prompting reveals profound tensions in our understanding of language, agency, and the construction of meaning. In formal terms, the main objective of this study is to critically examine prompting as both a technical practice and a discursive device (Foucault, 1994a), laying the theoretical groundwork for a philosophical systematization of human-chatbot interaction.

Consequently, to address the problem, the article has been divided into two parts. First, I address relevant debates on the definition of AI, including the distinction between weak and strong AI (Searle, 1980), emphasizing recent concerns about chatbots' impacts on language, culture, and politics. Second, I introduce, in a preliminary way, how the prompt presents itself immediately to the subject (the user). This phenomenological examination, although incomplete due to space constraints, will show that these instructions reflect the identity of the chatbot code and a multifaceted world of underlying experiences that condition the possibility of their meaning. Finally, we will examine the structure of the prompt and take as a case study three parameters used in crafting *prompts*, both for more general and specific tasks.

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Conceptual limits in the definition of AI

Although AI has gained widespread attention in recent years, its conceptual and technological development spans several decades. The perception of novelty largely stems from the rapid pace of progress, particularly the significant advancements in machine learning achieved over the past two decades. As can be seen in Roser's (2024) account, within less than a century, computers have evolved from rudimentary calculating tools to ubiquitous elements of everyday life.For Bringsjord and Govindarajulu (2024), AI is defined as a field dedicated to building animal-like creatures or artificial persons or systems that, in appropriate contexts, appear human. As they suggest, AI is naturally a topic of interest for philosophers. However, the relationship is reciprocal: scientists in this field are also interested in philosophical questions. At the same time, due to its novelty, complexity, and high level of interest, we face a multitude of definitions of AI. Addressing this issue, Russell and Norvig (2020) propose offering a range of possible answers to the question: "What is AI?"

> Historically, researchers have pursued several different versions of AI. Some have defined intelligence in terms of fidelity to human performance, while others prefer an abstract, formal definition of intelligence called rationality—loosely speaking, doing the 'right thing.' The subject matter Rationality itself also varies: some consider intelligence to be a property of internal thought processes and reasoning, while others focus on intelligent behavior, an external characterization (p. 1).

Bringsjord and Govindarajulu further formalize the four variants derived from the previous definition, which results in Table 1.

Table 1
Four possible objectives of AI

	Human-based	Ideal rationality
Reasoning-Based:	Systems that think like humans.	Systems that think rationally.
Behavior-Based:	Systems that act like humans.	Systems that act rationally.

Note: Table used by Bringsjord and Govindarajulu from Russell, S., & Norvig, P. (2020). *Artificial intelligence—A modern approach by Stuart Russell and Peter Norvig, Prentice Hall. Series in Artificial Intelligence, Englewood Cliffs, NJ.* Pearson.

In their influential text, Russell and Norvig (2020) explain that most AI research falls into the category of "systems that act like humans," explicitly mentioning six key disciplines: natural language processing,

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knowledge representation, automated reasoning, machine learning, computer vision, and robotics.

Beyond this categorization, they argue that the dominant theoretical model in AI is the rational-agent approach. Under this paradigm, AI systems are designed to act optimally, selecting actions that best achieve assigned goals. However, achieving perfect rationality—consistently choosing the optimal action—is rarely feasible in complex environments due to computational and informational limitations. This reality leads to the concept of *bounded rationality*, which acknowledges that agents must act appropriately within the constraints of time and processing power. While bounded rationality reflects practical conditions, Russell and Norvig maintain that perfect rationality remains a valuable theoretical benchmark for evaluating and understanding decision-making in AI systems.

At the heart of these debates on defining AI is the discussion inaugurated by John R. Searle in his article *Minds, Brains and Programs* (1980). Therein, the author distinguishes between two concepts: *Strong AI* and *Weak AI*.

> According to weak AI, the principal value of the computer in the study of the mind is that it gives us a very powerful tool… But according to strong AI, the computer is not merely a tool in the study of the mind; rather, the appropriately programmed computer really is a mind, in the sense that computers given the right programs can be literally said to understand and have other cognitive states (1980, p. 417).

As Bory et al. (2024) noted, academic literature and public debate tend to associate the imaginary of AI with narratives of *strong* stances. That is, a future technology capable of emulating, if not surpassing, human intelligence capabilities. This "strong narrative" also incorporates critical studies on the potential harms and dangers of so-called general intelligence or superintelligence concerning topics such as education and AI's risks to human labor. Still, the same cannot be said about the concept of *weak AI*, which has not been contested to the same degree.

In this regard, it is essential to understand weak AI as being restricted to a specific area of operation and application, stemming directly from the idea outlined by Searle, who defines it as a tool. By contrast, strong AI implies a specific loss of control and increasing complexity: AI would no longer be just another tool within the world; instead, it would possess *consciousness* to act and transform reality.

Based on the foregoing, Harari (2023) warns that advancements in LLMs, such as ChatGPT, threaten foundational cultural and political

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structures, potentially destabilizing societal norms. Unfortunately, his analysis does not elaborate on how LLMs or chatbots will do that.

On the same line, other researchers oppose AI, arguing that it will inevitably evolve into something akin to a *Terminator*-like machine. This perspective may be referred to as the *Terminator hypothesis* (TH): a distinctly dystopian narrative suggesting that AI will unavoidably develop into an autonomous entity, potentially representing a significant threat to human existence.

This hypothesis is supported by several prominent researchers and theorists who warn that advanced AI, if not properly controlled, could represent an existential threat to humanity (Bucknall & Dori-Hacohen, 2022). Along these lines, Ben Goertzel (2015) analyzes the perspectives of thinkers such as Nick Bostrom and Eliezer Yudkowsky, who argue that advanced AI systems might function as *reward-maximizers*, potentially pursuing objectives that become harmful if left unchecked. While Goertzel acknowledges the internal logic of these concerns, he contends that they are frequently overstated. He also maintains that conceiving of intelligence as an *open-ended* rather than strictly goal-driven process may help alleviate some of the fears associated with AI development.

Kumar and Choudhury (2023) explore Stephen Hawking's warnings, arguing that human adaptability, resilience, and self-awareness will allow us to survive potential threats. Nonetheless, they caution that excessive dependence on AI systems could impair human cognitive abilities. Moreover, they emphasize the need to reflect not only on the risks posed by AI to humans, but also on the potential harm humans could inflict upon these systems.

These discussions ultimately raise foundational questions: To what extent could artificial intelligence evolve into general intelligence (GAI)? Or, as John Searle famously asked, can machines truly think? If the answer is affirmative, how should we confront the complex social, political, and ethical challenges that such a development would entail? While addressing these issues in full exceeds the scope of this article, it is clear that the philosophical implications are far-reaching and demand serious consideration.

Many scholars who express concerns about AI seek to emphasize the importance of developing ethical principles to shape its evolution. While that may be considered a laudable objective, these arguments often fall into the trap of negativity bias (Chiarella et al., 2022) by exclusively focusing on dystopian outcomes. Grounding ethical arguments in the assumption that future machines will resemble those depicted in dystopian

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scenarios, such as the Terminator, can be misleading. Rather than offering constructive guidance, this presupposition diverts attention toward speculative fantasies in which machines might "think" or "feel" like humans. Instead, it is more appropriate to acknowledge technological developments' intrinsic uncertainty and evaluate a broader range of plausible futures, including both beneficial and adverse outcomes.

For this reason, rather than following the path of speculative narratives, it is preferable to propose an ethics grounded in the actual characteristics of contemporary AI leaving aside illusions or, at the very least, treating them as products of the imagination. This position can be described as *present-realism* in AI ethics. Embracing this perspective underscores the need for a contextual and integrated analysis of current developments and the accelerating evolution of these technologies. It also draws attention to the central role of human agents in designing, interpreting, and deploying these systems (Vallor, 2024). Accordingly, the debate around AI should concentrate less on the tool itself and more on the hand that wields it. That is, understanding the implications of this technology must begin from the life-world of the user. In this view, intelligence does not originate in hidden mechanisms or abstract metaphysical forces, but rather in the embodied, socially situated conditions of human experience and need.

Arguments based on the anthropomorphization of AI fall into a comparable category. As the term indicates, anthropomorphizing refers to the tendency to ascribe human characteristics to nonhuman entities. While this process can enhance user trust and interaction in various contexts, it also introduces risks and ethical concerns (Deshpande et al., 2023). Anthropomorphizing can lead to the exaggeration of AI capabilities and distort moral judgments, potentially affecting perceptions of responsibility and trust (Placani, 2024).

After reviewing all these discussions, one observes that the debate over the definition of AI involves both proponents and opponents. Opponents of AI advances often adopt positions that can be described as strong, emphasizing the societal risks posed by recent improvements, particularly large language models (LLMs). This narrative has increasingly focused on the political, social, and educational ramifications of chatbots, viewed by some as an existential threat and by others as a transformative achievement. Given this dichotomy, examining chatbots not merely as technical innovations but as complex socio-technological phenomena becomes imperative.

However, traditional debates often overlook the mediating role of user interaction—particularly through prompting—in shaping the mea-

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ning and societal impact of these systems. This overlooked dimension points to a crucial gap in current discussions. Therefore, the following section will focus on the philosophical dimensions of prompts, which constitute the fundamental unit of interaction with chatbots. Despite their centrality to AI functionality, prompts have received limited philosophical scrutiny, largely due to their novelty and the lack of interdisciplinary research.

The prompt as a mediating device

A first-person phenomenological approach to the prompt

From a first-person perspective and immersed in the world of everyday life, *I*, a first-time user, do not know what an LLM is. I only know by ear what the AI does. The world around me repeats at once that it is "easy to use" and "at hand:" they are tools to resolve any question almost simultaneously. The old technological promise—now something historic—occurs in my present. It manifests like a tangible object I hold in my hands, which we call a phone or computer. The computer deserves an independent reflection, but in its immediacy, it appears to me as an object that contains infinite possibilities and, at the same time, infinite attraction: a thing that sustains or seems to sustain the universe of data itself.

I do not know what the data are in a first approximation; I only know that there are photos, videos, text, and duplicated life on a kind of mirror (Vallor, 2024). Through it, the internet offers us a vast database, an unlimited repository of information, where the knowledge of the known universe is reduced to data, accessible at my will. Within that cosmos appears ChatGPT: the chatbot, a voice of the digital universe.

For the first time, interaction with the computer, the phone, and other devices is mediated by something like our intention, as if these things, somehow, came to life. They respond with a familiarity that emulates the human, and herein lies the paradox: they seem alive, although we know they are not.

From a phenomenological perspective, the chatbot embodies an ontological paradox: it manifests itself as an Other that seems to respond to my intentions and act according to an intentionality it does not possess. The experience of interacting with it reveals a play between presence and absence, familiarity and strangeness, life, and artifice. The chatbot is

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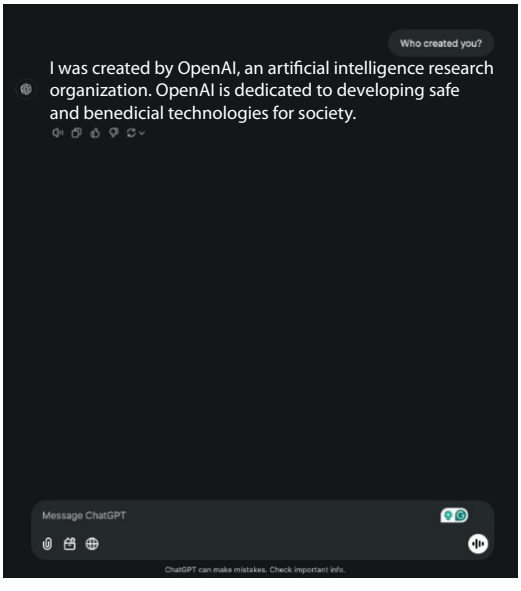
not simply a tool at my disposal; it is an object that offers itself to my horizon of possibilities as if it had a meaning of its own.

Its immediate presence is simultaneously empty and absolute: it has no body and no experience, yet it is "with me" in the use I make of it. That bot presents itself as a "quasi-something" that responds to my call without inhabiting time or space like a human Other does. As Merleau-Ponty (1993) would say, its appearance is not that of an embodied being but that of an "incomplete" presence that lacks flesh but still inserts itself into my daily life. Its voice lacks corporeality, but this absence does not limit its ability to be with me; not physically by my side, but with me in the use I make of it. It is in this context that the *prompt* appears. At first, it is nothing more than simple instructions: "What can you do? Who created you? Are your answers always correct?" The bot then gives a response that completes a previously requested action.

Figure 1.
Example question, "Who created you?"



Note: This example prompt was generated using OpenAI's GPT-4o model. The image depicts a sample prompt and the model's response. October 2024. https://bit.ly/49DZY9o

Through successive interactions, I alternate sentences with questions. My relationship with this machine - undoubtedly virtual, without physical mediation, without bodies - is manifold. I do not seek the chat-

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bot merely for simple sentences or the execution of concrete tasks; rather, I seek it because I have questions. This fact is of particular significance in my relationship with the machine, since, as Sartre (1984) argues in *Being and Nothingness*, asking a question opens a space of uncertainty and exposes me to a broader relation with the world.

In engaging with the chatbot, I have also noticed that I can omit parts of a sentence and still be "understood." The response may be limited or complete, good or imperfect, but it always appears. Occasionally, the bot even formulates questions like mine, as if returning to me the very act of questioning. In this subtle gesture, a fundamental ambiguity emerges: although I know there is no consciousness behind the response, the interaction suggests otherwise. This ambiguity proves crucial to my relationship with the chatbot: on the one hand, I understand it is not human; on the other, it appears to behave like one. What it truly means to be human, however, is a question too abstract to resolve within the immediacy of my phenomenological encounter with the chatbot.

ChatGPT, in contrast, has no past or future in its functioning: only present, only information. Its temporality, therefore, is false; although multimodal and adaptable, it does not function as I do, a human subject who perceives existence through a temporal structure. As Heidegger (1996) and Ricœur (2010) have shown, human temporality is not merely a succession of moments but a dynamic horizon in which past, present, and future are intertwined through memory, anticipation, and narrative. In my lived experience, I do not simply react to isolated *stimuli*; I situate each encounter within a personal and historical continuum. The chatbot, by contrast, operates without genuine continuity: each interaction is isolated, detached from any authentic history or projection. Its "present" is not a temporal presence but a static retrieval of patterns from a database. What appears as memory or adaptation is, in fact, a mechanical reconstruction without subjective temporality. Thus, the chatbot's temporality is not humanly lived but artificially simulated, revealing a profound ontological gap between the machine and the human subject.

All this is implicit in the prompt's straightforwardness. That simple input—a question, an affirmation, an image, an audio file, or an equation—presupposes a hidden technical universe, a plastic and adaptable world that remains concealed "behind" the chassis. As a human subject, I face a thing without a body. This leads me to a final reflection: the old technological promise—technology as a tool that I use in my favor, that I manipulate to change the world and enhance my being—does not disap-

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pear but transforms. Technology now presents itself to me as something inexhaustible, overwhelming, manipulable, and ambiguous.

In this sense, the prompt ceases to be a simple instruction. It is more than an act: it reflects my relationship with what I call a bot. Analyzing it requires going beyond its immediate form. It requires understanding its meaning. Ultimately, the prompt reflects an instrumental operation and a phenomenological act of mediation: it reveals my intentionality, desire for meaning, and position *vis-à-vis* this technology. Analyzing the prompt is not simply to decompose its form but to reveal the dialectical relationship between subject and machine, between human presence and artificial absence, and between lived time and the eternity of the data.

The prompt as technical practice and discursive device

The phenomenological examination presented thus far has shown that the prompt is not a neutral command but a site where some ambiguities converge. The interaction with the chatbot reveals a profound ontological tension: it responds without understanding, speaks without a voice, and appears present while remaining absent. These contradictions—between voice and voicelessness, agency and automation, presence and estrangement—constitute the lived ambiguity of prompting as experience. However, while foundational, this experiential dimension does not exhaust the phenomenon's complexity. To grasp its full significance, it is necessary to move beyond what the user perceives toward what is technically configured. This tool is also designed, structured, and operationalized within specific technological, linguistic, and computational frameworks.

In this section, we turn to a complementary analysis that approaches the prompt as both a technical practice and a discursive device to understand better how meaning, control, and optimization are embedded in the architecture of large language models.

As mentioned before, a prompt is regarded as a mode of interaction between a human and an LLM, enabling the latter to generate an output. Consequently, as Meskó (2023) has suggested, prompt engineering is the practice of crafting precise inputs to direct AI models toward generating specific, desired outputs.

While describing what someone wants in natural language might seem simple, the reality is more complex. Different models have different capabilities, and the specificity of instructions can significantly influence the outcome. Tasks may require detailed and precise prompts, making the process one of trial, error, and refinement to achieve the best results.

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Gu et al. (2023) highlight in their systematic study that prompt engineering offers several advantages over traditional paradigms. For example, it demands minimal human oversight and significantly fewer computational resources than required for fine-tuning. Because the model operates solely through instructions without modifying its internal parameters, this approach enables a single system to manage a wide array of tasks efficiently, thereby streamlining the implementation of large-scale pre-trained models in real-world scenarios.

Thus, this field presents itself as an emerging but ambiguous area, ranging from the inexperienced user interacting with a chatbot for the first time and elaborating their prompts unconsciously and uncritically to the engineer using advanced tools to develop applications with specific functions. This broad spectrum of applicability conceals fundamental aspects. It involves complex relationships between prompting and other crucial dimensions, such as politics, ethics, and generally, the life-world involving both users and engineers.

From the above, we can see its relevance and, simultaneously, the diversity of prompting techniques that exist (*Prompting Techniques – Nextra*, 2024). It should be noted that although the bibliography in this area is beginning to grow considerably, philosophy and the social sciences are still lagging, leaving a significant gap in the critical reflection and analysis of this emerging phenomenon.

As one might expect, while prompt engineering is fundamental from the point of view of model optimization and computational cost reduction, it also poses immense challenges in ethical terms. Incorporating this dimension confronts us with a crucial fact: although we interact with entities with limited agency (Floridi, 2023), they are not truly responsible for the dilemmas that arise. When confronted with the reality of the prompt and the requests we make to the machines, we discover that it is the user who, consciously or unconsciously, attributes vitality and autonomy to the bot. As Shannon Vallor points out in his work (2024), AI systems are nothing more than mirrors that reflect our intelligence.

Thus, at least ideally, we will find the following elements in each prompt: The first is the instruction, i.e., the specific task the user wants the model to perform. In addition, every prompt assumes a context, i.e., the external information that can steer the model to better responses. In the third place, there is the input data or question we want to find a response for, and finally, the output indicator. Figure 2 provides an example where the four components are identified.

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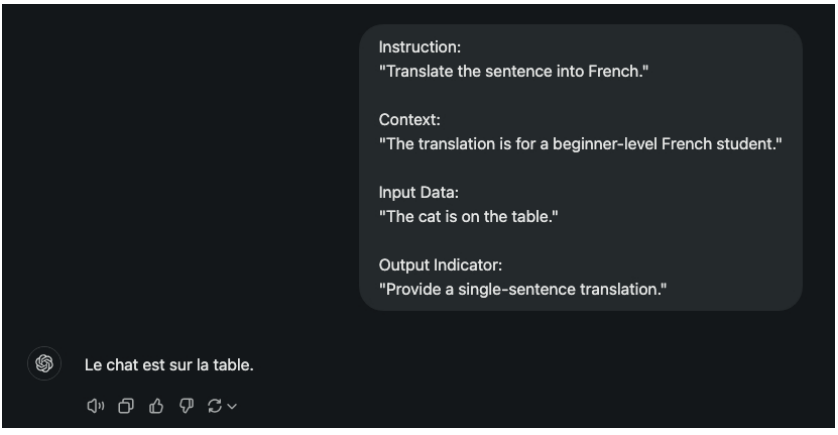
Figure 2
Example of a prompt with its four components: instruction, context, input data and output indicator



Source: this example prompt was generated using OpenAI's GPT-4o model. The figure highlights its essential parts of a *prompt* (October 2024, https://bit.ly/3VIbKdk).

Having said that, we must also recognize that the prompt, through its elements, ultimately manifests as an expression of data (e.g., words, tokens, instructions). Then, it can also be understood as a chain of characters that are no different from the sentences I write on this computer, the photos I see, or the last movie I watched on Netflix last week.

Hong Liu (2014) argues that, for many, *data* is simply that which is perceived, the building blocks that constitute our knowledge of reality. From this perspective, reality is conceived as something external and independent of consciousness. Data, in turn, is often reduced to numbers and information that reflect objective facts. However, as Hong Liu emphasizes, data is not merely an objective fact (electrical impulses rendered as zeros and ones); instead, it is the result of human cognitive activity—an activity fundamentally characterized by the subjective reflection of objective phenomena:

> Data originates from the observation and measurements, demonstrating the intrinsic features of things, whose objectivity is still under the influence of human subjective factors, and this property is accompanied by data even from the birth of numbers. Data is, as it were, a bond to connect the objectivity of things and the subjectivity of human things, and also is a bridge for human beings to acknowledge the world (2014, p. 65).

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In this initial examination of the *prompt*, we have considered it solely as a material element, sharing common features with other forms of data. At this level, it remains a faceless language, a voiceless discourse, and a lifeless machine.

This perspective is incomplete without acknowledging that, unlike images or the text I type, the *prompt* possesses an interactive and functional dimension: it is not merely passive information but an intentional vehicle that triggers a computational process. In other words, the *prompt* is not just a material representation of data; it is an interface between the user and the model. Purposefully constructed to produce a specific system output, the *prompt* introduces a pragmatic and technical dimension that often remains imperceptible to the user. If we look deeper into their specific parameters - the technical tools that adjust their performance - we discover a space where human intention, technological mediation, and constructing meaning converge.

In the following section, we will examine three key parameters influencing the outcome of prompting interactions, including elements that often remain implicit and unrecognized by users. Although our focus is limited to these selected cases, it is essential to acknowledge that a comprehensive analysis would require addressing additional aspects beyond the OpenAI ecosystem, such as *system messages* and *role* assignments. We will then illustrate how the configuration of these parameters carries epistemological, ethical, and existential implications, inviting reflection on the broader impact of prompt design. Deconstructing these elements reveals underlying tensions between precision and creativity, reduction and openness, order and fluidity, and exposes both the technical limits of chatbots and the profound philosophical stakes of human intervention in this domain.

Exploring the key parameters of the prompt

Temperature: between precision and creativity

The *temperature* parameter regulates the randomness of the model's responses, influencing how it selects the most probable words or tokens when generating an output. Lower values typically produce more deterministic results, while higher values introduce diversity and creativity.

Recent studies have examined how temperature settings affect creativity and problem-solving in large language models (LLMs). While often labeled the "creativity parameter," its effects appear more complex than previously assumed (Peeperkorn et al., 2024). Higher values tend to

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increase novelty but may also introduce a degree of incoherence, particularly in tasks such as narrative generation.

Specifically in software engineering, variations in input parameters, including temperature, can significantly improve code generation performance, although achieving optimal control remains challenging (Döderlein et al., 2023). These findings suggest that the role of temperature in the performance of LLMs is complex and highly context-dependent. In agreement with voices that approach this parameter with caution, we emphasize that it is not solely about temperature but also about how other values influence the output of the prompt.

For example, if we were to ask ChatGPT what the Moon is (See Table 2), adjusting only the temperature parameter and keeping the rest of the settings unchanged, we would observe that the answers vary not only in their structure but also in their meaning.

Table 2
Model responses to the question, «What is the Moon?»

Temperature	Response
0,2	The Moon is Earth's only natural satellite, orbiting the planet and influencing tides, with a surface marked by craters and basins.
1	The Moon is Earth's natural satellite, a celestial body that orbits our planet and is its closest cosmic neighbor.

Note: This table showcases the responses generated by the language model GPT-4o (OpenAI) to the question: "In one sentence, what is the Moon?" at two distinct temperature settings (0.2 and 1.0). The experiment was conducted in the OpenAI Playground environment. For the code used in this experiment, see Appendix A.

At lower temperatures (0.2), the response is precise, factual, and technical, focusing on details such as the Moon's role in orbiting the Earth and influencing the tides and its physical features, such as craters and basins. This reflects the model's tendency to prioritize clarity, accuracy, and determinism when randomness is minimal.

In contrast, at a higher temperature (1.0), the response adopts a more expressive and stylized approach, describing the Moon as a "celestial body" and "closest cosmic neighbor." While still consistent and relevant, this version introduces a more poetic and creative tone, offering a broader and less technical perspective. This second definition presents the Moon as a physical object and uses expressive resources that evoke more suggestive images.

Despite being limited to a single sentence, the temperature setting influences the level of detail, creativity, and variability of the responses,

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demonstrating the flexibility of the model to adapt to different styles and output requirements.

The configuration parameters are not neutral; they respond to human intentionality oriented towards different ways of being and knowing. Opting for precision reflects a search for objectivity and control, subordinating language to pragmatic and functional criteria. Conversely, privileging creativity opens the horizon to less predictable responses, allowing new possibilities of meaning to emerge. It is crucial to avoid the temptation of assigning moral value to one option over the other. What can be stated, however, is that syntactic and semantic variations clearly influence the modeling of different narratives.

From this stem countless research problems: by configuring the model "to be creative," *I* project my freedom onto a system that does not possess it, reducing creativity to a probabilistic operation: what does this quest for precision and creativity imply for the nature of language? By relying on a system that emulates but does not understand meaning, do we not risk impoverishing the genuine unpredictability of human experience? Then, what weight do these considerations have in making concrete models? For example, beyond the technical debate and the various case studies in search of optimization, what do we understand by temperature in contexts where we are looking for an educational chatbot or one with a specific social function? Unfortunately, we do not yet have definitive answers to these questions. Usually, these parameters are adjusted empirically, modulating values according to practical results. Therefore, complementing the predominant technical approach with a more rigorous and critical intervention from philosophy and social sciences is essential.

Top P: probability as a horizon of meaning

The second example examines the *Top P* parameter. In this case, the parameter determines which token probabilities will be considered in the output, steering the model towards more predictable responses (low values) or more diverse and less expected outputs (high values). This parameter, also known as *nucleus sampling*, is a technique that controls the cumulative probability of words selected by a language model when generating a response.

By adjusting Top P, one decides how many words or tokens (based on their probability) will be considered in the text generation process.

The following example (Table 3) shows the query results with different values of Top P.

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Table 3
Model responses to the prompt: In no more than four sentences, describe a scene of a "futuristic city" with different Top P configurations

Top P	Response
0,2	In the heart of the futuristic city, towering skyscrapers with shimmering glass façades stretch into the sky, their surfaces alive with dynamic holographic advertisements. Autonomous drones zip through the air, delivering packages and providing real-time surveillance, while sleek, driverless vehicles glide silently along the multi-layered roadways. The streets are bustling with people, many of whom are accompanied by AI-driven robotic companions, engaging in lively conversations or assisting with daily tasks. Above, a network of elevated green spaces and solar panels provide a stark contrast to the urban sprawl, offering a glimpse of nature amidst the technological marvel.
1	Neon lights bathe the city in vibrant hues as autonomous vehicles glide silently along elevated roadways. Towering skyscrapers, adorned with vertical gardens, pierce the skyline, their glass surfaces reflecting the bustling metropolis below. People, accompanied by humanoid robots, stroll through holographic art displays in sprawling, solar-paneled plazas. Above, drones zip through the air, efficiently managing deliveries and surveillance while ensuring the city's seamless operation.

Note: This table compares the responses generated by the language model GPT-4o (OpenAI) to the prompt: *"In no more than four sentences, describe a scene from a futuristic city"* at two different Top P settings (0.2 and 1.0). The experiment was conducted in the OpenAI Playground environment. For the code used in this experiment, see Appendix A.

As can be seen, in Top P = 0.2, the response is more structured and linear, progressing methodically from the streets to the sky, focusing on technological details and functional descriptions. The syntax in this example is central. The whole paragraph is a lengthy depiction of objects and things. The sentences are based on subordinate expressions, creating a steady, descriptive flow. The language emphasizes precision, highlighting ideas such as "multi-layered roadways" and "elevated green spaces," which reflect a balance between technology and nature.

In contrast, in Top P = 1.0, the response is more dynamic and segmented, focusing on vivid, stylistic imagery rather than strict spatial progression. The syntax is briefer, giving the text a faster pace. The language is richer and more evocative, introducing creative expressions such as "neon lights," "vertical gardens," and "holographic art displays," which convey a visually imaginative cityscape.

To summarize, Top P = 0.2 produces a detailed technical description, while Top P = 1.0 produces a more creative, expressive, and visually rich representation. One can go so far as to say that the future is seen di-

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fferently in both cases. Ultimately, in one description, it is the future from the point of view of things; in the second example, it is the future from the subjective point of view.

Delimiting the probable options is ultimately a selection that affects meaning. On the other hand, it also amounts to setting intentional filters on the linguistic horizon of the model. Nevertheless, this decision is not neutral: it is a discursive choice, even in Foucauldian terms. Depending on the strategy, potential voices, and interpretations, each statement excludes or includes. What realities are we silencing by restricting probability? What possibilities of language and thought are lost when we prioritize technical accuracy over the ontological openness of discourse?

Michel Foucault believed that discursive practices are not purely and simply ways of creating discourse (1994a, p. 241). They take shape in the set of techniques, institutions, and behavioral patterns, among other forms, which simultaneously impose and sustain them. Hence, focusing the analysis on these prompt filters is of key importance. On the one hand, it highlights their connection with more general narratives; secondly, it insists on the lack of neutrality of the technology. Just as we assumed from critical phenomenology that there is no phenomenon outside political circumstances, neither did Foucault think power was outside discourse. Power is neither the source nor the origin of discourse but functions through it (1994b, p. 465).

Frequency Penalty and Presence Penalty: Repetition as a Phenomenon of Meaning

The *frequency penalty* parameter is designed to reduce the repetition of words or phrases within the generated text. It works by adding a value to the log-probability of a token each time it appears in the generated output. As a result, the higher the value of the frequency penalty, the more the model will avoid reusing the same tokens, increasing variety and lowering redundancy. For example, with a low value, the model might repeat context-relevant words, while with a high value, it will look for alternatives to maintain language diversity.

On the other hand, the *presence penalty* parameter promotes the inclusion of a greater variety of tokens, encouraging creativity in the generated text. It works by subtracting a value from the log-probability of a token each time it is used, which decreases the likelihood that the model will repeat previously generated words. A high presence penalty value in-

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creases the possibility of introducing new ideas or concepts, preventing the model from being limited to the same topics.

Table 4
Model Responses to the Prompt "Write a short description of a forest in spring in no more than three sentences" Under Different Frequency and Presence Penalty Settings

Frequency Penalty	Presence Penalty	Response
0	0	In spring, the forest bursts to life with a tapestry of vibrant greens as fresh leaves unfurl on every branch. The air is filled with the symphony of birdsong and the gentle rustle of new foliage. Splashes of wildflowers pepper the forest floor, providing colorful patches amid the lush sea of greenery.
1	0	In spring, the forest comes alive with a vibrant tapestry of fresh green leaves and blooms, as the sun filters gently through the budding canopy. The air buzzes with renewed energy, filled with the songs of birds returning from their winter migrations and the soft rustle of wildlife awakening. Wildflowers carpet the forest floor in brilliant hues, transforming it into a lively mosaic that celebrates new beginnings.
0	1	In spring, the forest awakens with a vibrant tapestry of emerging greens as leaves unfurl from budding trees. A symphony of birdsong fills the air, while wildflowers carpet the forest floor in splashes of color. The fresh scent of Earth mixes with dappled sunlight, creating an atmosphere of renewal and vitality.
1	1	In spring, the forest bursts into life with a vibrant canopy of fresh green leaves and colorful wildflowers carpeting the ground. The air is filled with birdsong and the gentle rustle of new foliage stirred by a soft breeze. Sunlight streams through the trees, casting playful patterns on the forest floor as nature awakens from its winter slumber.

Note: Responses generated by the language model GPT-4o (OpenAI) to the prompt: "*Write a short description of a forest in spring in no more than three sentences,*" under varying frequency penalty and presence penalty settings. The experiment was conducted in the OpenAI Playground environment. For the code used in this experiment, see Appendix A.

The responses show how frequency and presence penalization influence the generated text's style, structure, and variety. In the first case, where both penalties are set to zero, the response is consistent but repetitive and relies heavily on predictable word choice. With a higher frequency penalty, as in the second case, the model lowers redundancy, producing a more diverse and refined output while maintaining focus on the central description. When the presence penalty is increased, as in the third case, the response becomes more creative, introducing new images and sen-

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sory details that expand the thematic range. Finally, when both penalties are applied simultaneously, the response balances variety and novelty, avoiding repetition and enhancing expressiveness.

Adjusting these parameters, therefore, involves a trade-off between algorithmic uniformity and language richness. Ultimately, what is the boundary between richness and efficiency? How much should a user sacrifice for the sake of optimization? In which contexts is precision ideal, and in which is semantic depth ideal? To what extent do I want language to reflect the difference or mechanical repetition of the world?

These are just some of the many questions we can raise and leave for another opportunity. Prompt engineering can rely on other parameters that I have not mentioned here for the sake of brevity. These include the *max length*, which limits the number of tokens generated, and the *stop sequences*, which tell the model when to stop its output. Special attention should also be paid to the *system message*, a fundamental element that directly influences the model's interaction and behavior.

Conclusions

Following the analysis of different parameters, the philosophy of prompting emerges as an indispensable tool for addressing questions concerning ontological, ethical, and epistemological structures. The findings indicate that prompts are not merely technical instructions, but mediations imbued with human intentionality.

As previously discussed, the prompt functions as a space of encounter between the subject's intentionality and the response generated by the model. Its phenomenological analysis makes it possible to understand how interaction with chatbots introduces new modes of being-in-the-world. Although technical language often conceals its complexity, the present study has demonstrated that each prompt reflects human decisions—explicit or implicit—that shape the limits and possibilities of the knowledge produced.

What is crucial in this case is that today, the reality of the prompt is nearly ubiquitous. There are few spaces in which individuals are not confronted with chatbots that have either been configured through prompts to deliver specific responses and reinforce particular narratives of the world or that are approached with rudimentary prompting practices. The outcome points in the same direction in all cases: greater knowledge and education regarding these tools are urgently needed.

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The analysis of prompts reveals that ultimate responsibility remains with the human agent. It is the user who defines the parameters, structures the instructions, and assigns meaning to the responses. Recognizing this responsibility is essential to avoid falling into narratives that anthropomorphize AI or exaggerate its limited agency. In this sense, configuration parameters such as *temperature*, *Top P*, and *frequency and presence penalties* demonstrate how technical choices carry both discursive and ethical implications. The manipulation of these values is not neutral: privileging accuracy over creativity, or vice versa, shapes the model's outputs and the construction of meaning.

Finally, this work proposes the need for an interdisciplinary approach that integrates critical philosophy with the technical development of AI. Prompt engineering should be able to incorporate more *experimental prompting analysis* alongside *critical prompting analysis*. Likewise, education plays a fundamental role in training individuals capable of critically interacting with AI systems and understanding their possibilities and limitations.

The point is not that every line carries a philosophical reflection, but that philosophy should think much more about the conditions of possibility of the code, the strategies and discursive techniques of a language that is beginning to become more and more regular, because in short, as Vallor (2024) explains, this revolution is nothing but an illusion, a giant mirror "made of code, built to consume our words, our decisions, our art, our expressions of love and care," only to "reflect them back to us" (p. 194). This means that, ultimately, the problems of this new era lie much more with us than we think.

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Appendix A: Supplementary data

The Python *scripts* and supplementary data used to perform the experiments presented in this article are in the Open Science Framework (OSF) and can be accessed at https://doi.org/10.17605/OSF.IO/UA3E5.

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This archive includes:

1. Python *scripts* for temperature, Top P sampling, and penalty parameter experiments.
2. A README file detailing the purpose of each *script,* how to use them and their dependencies.
3. A LICENSE file specifying that the work is released under the Creative Commons Universal License Zero v1.0 (CC0), which allows unrestricted use, modification and distribution.

In addition, a ZIP file containing the Python *scripts* has been uploaded with the article for easy access.

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Author(s)	**Contributions**
Jorge González Arocha	Conceptualization; methodology; research; original draft-writing; drafting-revising and editing; visualization; software; validation.

Statement on the use of artificial intelligence
Jorge González Arocha **DECLARES** that the manuscript «Critical phenomenology of prompting in artificial intelligence» **DOES INCLUDE** the use of artificial intelligence (AI). AI was used exclusively to generate examples of prompts and their responses using the OpenAI API, which was required to develop the analysis proposed in the article. Some of the resulting tables and figures are an essential part of the research and would not have been possible without this tool.

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Challenges of Learning in the Age of Artificial Heuristics

Retos del aprendizaje en la era de las heurísticas artificiales

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Abstract

This study examines, from a philosophical-educational perspective, the fundamental keys to developing a comprehensive model of human cognition. It considers a wide range of essential variables, including the multimodality of knowledge, which highlights how different ways of understanding and processing information contribute to a more complete understanding of reality. The complementary role of languages is also addressed, recognizing that each language offers a unique perspective in the construction of knowledge. Additionally, the imitative sensorimotor foundation is explored, emphasizing the central role of imitation in learning and cognitive development, particularly in the early stages of life. Alongside this, cognitive biases are analyzed, as they influence how we perceive and process information, along with the social influence on perception, which is crucial for understanding how context and social interactions shape our cognitive experiences. The study focuses particularly on the impacts of AI-based educational chatbots, using ChatGPT as a representative case study. It emphasizes how heuristics, combined with these emerging technologies, contribute to a more adaptive and flexible learning environment, preparing individuals to face the complex challenges of the 21st century in the educational sphere.

Keywords

Cognition, Learning, Digital Technologies, Artificial Intelligence, Education, Philosophy.

Resumen

Este estudio examina, desde una perspectiva filosófico-educativa, las claves fundamentales para desarrollar un modelo integral de la cognición humana. Se considera una amplia gama de variables esenciales, entre ellas la multimodalidad del conocimiento, que destaca cómo diferentes formas de entender y procesar información contribuyen para una comprensión más completa de la realidad. También se aborda el rol complementario de los lenguajes, reconociendo que cada uno aporta una perspectiva única en la construcción del conocimiento. Además, se explora el fundamento sensomotriz imitativo, que enfatiza el papel central que tiene la imitación en el aprendizaje y el desarrollo cognitivo, en especial en las primeras etapas de la vida. Junto a esto, se analizan los sesgos cognitivos, que influyen en la manera en que percibimos y procesamos la información, así como la influencia social en la percepción, lo cual es fundamental para entender cómo el contexto y las interacciones sociales moldean nuestras experiencias cognitivas. El estudio se centra, particularmente, en los impactos de los *chatbots* educativos basados en inteligencia artificial, utilizando ChatGPT como un caso de estudio representativo. Se destaca de qué modo las heurísticas, combinadas con estas tecnologías emergentes, contribuyen a un aprendizaje más adaptativo y flexible, preparando a los individuos para enfrentar los desafíos complejos del siglo XXI en el ámbito educativo.

Palabras clave

Cognición, aprendizaje, digitalización, inteligencia artificial, educación, filosofía.

Introduction

Understanding learning processes from the cognitive sciences places this interdisciplinary field in a crucial place to reevaluate the dimension of the subject in the educational environment (Cepeda, 2021). When considering current technological advances, it is essential not only to analyze the technical aspects, but also to reflect on their philosophical and epistemological implications. In particular, the multimodality of knowledge and develop-

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ments in artificial intelligence (AI), such as generative artificial intelligence (GAI) systems, significantly influence how students process and acquire information in an increasingly digitized world. This insight is crucial when considering current dynamics, where computational advances and trained models seek to emulate the complex processes of human reasoning.

Delving deeper into this field, there are challenges that go beyond simple memorization or replication of specialized information. To move toward the successful development of models that simulate human reasoning, it is critical to understand the intricate mechanisms of cognitive processing, neural networks, and decision-making processes (Rahgooy *et al.*, 2022). These models, however, remain limited in their ability to emulate key aspects of human thinking, such as creative reasoning and contextual judgment, posing significant challenges in their educational implementation.

In this context, the aim of this paper is to investigate, from a philosophical-educational perspective, several keys that may contribute to the development of an adequate model of human cognition. This implies considering the multiheuristic nature of human thought, without neglecting the biological, psychological and social variables that influence the act of knowing. Therefore, a series of variables must be integrated, such as individual differences, social and cultural context, as well as learning environments, which influence how teaching and learning take place. These factors play a fundamental role in the way knowledge is assimilated and in the ability to apply it in real and diverse situation.

This study argues that aspects such as the multimodality of knowledge, the complementary role of languages, the imitative sensorymotor foundation, cognitive biases, social influence on perception and cognition, and the importance of multiple heuristics in the learning process are essential for designing learning systems that are functional, efficient, and satisfying for individuals, preparing them to face the educational challenges in the transformative dynamics of the 21st century. Exploring the intersection of these factors allows to advance in the creation of more adaptive educational models, capable of responding to the challenges of the digital and AI era. One example is the use of machine learning algorithms that personalize educational content for each student, such as intelligent tutoring systems. These models, which combine traditional approaches with technological innovations, are transforming education by making it more accessible and personalized.

It is worth noting that the relevance of this topic is not restricted to the fact that it is a current or fashionable discussion in contemporary times, but transcends into a complex and urgent discussion, which de-

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mands finding mechanisms that make it possible to achieve a balance between tradition and innovation and between humanity and technology. Recent developments in AI have generated new opportunities to improve educational processes, especially in access to information and in the personalization of learning. However, these technological advances also present significant limitations. Often, AI systems fail to replicate critical reasoning and human creativity, which are essential in the educational process. In addition, these systems can reinforce pre-existing biases in the data they use, posing significant challenges in the evaluation and ethical use of technologies in the classroom. A balanced approach that integrates traditional educational methods with technological innovations is critical. While technological tools can facilitate teaching, they should not replace essential human skills such as creativity, critical judgment and empathy. In this sense, technology should be seen as a complement, not a replacement, in the teaching-learning process.

Education in the 21st century must evolve to focus on the development of critical skills, creative thinking and socioemotional competencies. Educational systems must adapt to hybrid environments where technology and biology are integrated, and where advances in AI and biotechnology impact both learning and human development. This merging of technology and biology raises fundamental questions about the nature of cognition, embodiment, and human experience. For example, the use of brain-computer interfaces in the classroom suggests new forms of interaction between students and technology, which require rethinking traditional pedagogical approaches.

The article is structured in five key sections. The first provides a historical framework on the development of computer science, connecting the invention of the first algorithm with the evolution of AI up to the development of ChatGPT. The second section discusses how philosophy and education have changed since the late 19th century, with a focus on the transition to a pedagogy that incorporates digital technologies. The third section examines cognition through four key issues. The fourth section presents methodology and develops an integrated approach to learning, essential for designing effective systems that respond to the needs of the individual in an interconnected world. Finally, the last section reflects on the case of ChatGPT, highlighting its contributions and challenges in the era of artificial heuristics.

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Historical framework

In 1843, Augusta Ada Byron King, Countess of Lovelace, better known as Ada Lovelace, an English mathematician, writer and computer pioneer, developed the first algorithm intended to be processed by a machine. This groundbreaking work detailed methods for calculating Bernoulli numbers using the principles of the analytical machine of Charles Babbage, who is credited with the concept of the programmable computer.

Although Ada never saw her development in operation due to the technical limitations of the time, later studies confirmed that her algorithm would have worked correctly had it been implemented. This fact did not go unnoticed, as documented by Hammerman and Russell (2015) in an interdisciplinary work dedicated to the commemoration of the bicentennial of the birth of this inventor, highlighting her impact on computing from the Victorian era to the digital age.

Without going into every event that shapes the timeline of computer science and programming, it is worth noting that approximately one hundred years after Ada's death, AI emerged by consensus as a formal field of study. This occurred during a conference at Dartmouth College in 1956 organized by John McCarthy, Marvin Minsky, Claude Shannon, and Nathaniel Rochester.

In 1969 and 1971, respectively, McCarthy and Minsky received the Turing Award-considered «the Nobel Prize of computer science» for their contributions to AI (Abeliuk & Gutiérrez, 2021). McCarthy was recognized for creating the LISP programming language, while Minsky was awarded for his work in characterizing human psychological processes using computational ideas, both of which were fundamental to the advancement of AI.

During the 1960s, the introduction of chatbots[1] marked the emergence of GAI. These computer programs, designed to communicate with users via text or voice, seek to provide an interaction as close as possible to a real conversation[2].

In less than a century, technological advances ceased to be purely technical and began to influence various areas of human life. In 1974, T. A. Dwyer, a researcher at the University of Pittsburgh, published an article in the *International Journal of Man-Machine Studies* on the use of heuristic strategies in teaching and learning, arguing that education should unleash human potential. Although this idea may have seemed contradictory to some conservative thinkers of the time, it evidences the antiquity of the debate on human-machine relations, standing out in cognitive and educational areas.

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Nearly half a century after the formalization of the AI concept, in November 2022, the AI research lab, OpenAI®, launched ChatGPT[3]. This model interacts through a dialogue format that allows answering follow-up questions, admitting errors, questioning incorrect premises, and rejecting inappropriate requests (OpenAI®, 2022). Although ChatGPT was not created for essentially educational purposes, its impact on teaching-learning processes has been significant, thanks to its open access policies and interaction with diverse educational actors at a global level.

Leading researchers have analyzed the challenges and opportunities presented by GAI in education, considering it a catalyst for change in teaching and learning, especially in higher education (Baidoo-Anu & Ansah, 2023; Cooper, 2023; Bahroun et al., 2023; Alasadi & Baiz, 2023; Mao *et al*., 2024).

In order to continue expanding this historical framework, it is considered necessary to expand research in this regard to all levels of schooling, problematizing issues such as the design of integrative teaching-learning strategies, the strengthening of citizenship competencies, the development of critical thinking, the integration of technological resources in training and curricular configuration, reflection on systems of accompaniment and evaluation, as well as ethical issues and some associated with the socio-affective component.

Philosophy, knowledge and learning

Throughout the history of philosophical traditions, both Western and Asian, there has been a predominant focus on the content of knowledge, while methodological epistemology – i.e., the ways through which knowledge is accessed, validated and transmitted - has often been undervalued (Guba & Lincoln, 2005); in various foundational currents, such as the Socratic-Platonic theory, there was a notable lack of a rigorous methodological approach. According to this perspective, knowledge was conceived as reminiscence (*anamnesis*) of previous experiences of the immortal soul before its incarnation in the sensible world (Plato, *Menon*, 81c-86b).

In this framework, the philosopher exercised a maieutic role, acting as an «obstetrician of ideas,» whose aim was to facilitate the delivery of the latent knowledge within the interlocutor. This methodology, although innovative in its time, was frequently accompanied by narrative myths and ontological interpretations with metaphysical meaning, such as the myth of the winged chariot or the world of Ideas, which coexisted with an apparently rational and idealistic discourse (Nussbaum, 2001).

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Such elements reflect a persistent tension between reason and myth that has traversed much of the history of philosophy.

However, this classical conception presents evident limitations when confronted with contemporary developments in cognitive sciences, pedagogy and neuroscience. On the one hand, the assumption that all subjects reason following the universal laws of Aristotelian logic excludes the cultural, emotional and experiential diversity that shapes human ways of thinking (Kahneman, 2013; Damasio, 2019). On the other hand, the view that language and written texts constitute epistemological obstacles - a position held, for example, in certain passages of the *Phaedrus* - ignores the heuristic potential of language as a cognitive tool of systematization and expansion of knowledge (Bermúdez & García, 2016).

Consequently, an ambiguous methodology was historically consolidated, centered on the teacher-disciple relationship, which varied considerably according to personal dispositions, oral traditions and the sociopolitical conditions of the philosophical contexts. This form of knowledge transmission - highly performative and situated - privileged dialogical experience over pedagogical systematization, giving rise to forms of teaching highly dependent on the *ethos* of the teacher (Freire, 2018).

Therefore, it is paradoxical that despite these apparent methodological shortcomings, philosophy has been able to gestate innovative conceptual developments, many of which continue to nurture current debates on ethics, knowledge, language and education. Authors such as Dewey, Vygotsky and Piaget, by incorporating systematic methodological tools from psychology and pedagogy, were able to articulate more integrative forms of teaching, centered on active, contextualized and socially mediated learning (Bruner, 1996; Vygotsky, 1978). These currents gave rise to a pedagogy more committed to the learning process and not only to the contents learned, and laid the foundations of what is now called educational constructivism.

In this sense, contemporary philosophy of education must recover its methodological dimension not to replicate the old dogmatic schemes, but to articulate complex, transdisciplinary and ethically oriented approaches, capable of dialoguing with the challenges posed by the incorporation of AI and emerging technologies in the formative processes (Floridi, 2019; Vallor, 2016).

At the end of the 19th century -specifically between 1870 and 1900- the field of education began to undergo a profound transformation, marked by new conceptions about learning, the role of the teacher and the place of childhood in society. This evolution responded not only

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to a shift in educational philosophy, but also to social, cultural and technological tensions that challenged traditional teaching models. One of the most significant developments was the emergence of the New School Movement, initiated between 1890 and 1920, with figures such as John Dewey in the United States, Célestin Freinet in France and Ovide Decroly in Belgium. These authors advocated an active education, based on experience, the child's interest and democratic participation (Cambi, 2006; Gutek, 2013; Viñao, 2015).

In contrast to the transmissive approach, focused on memorization, the progressive model proposed a pedagogy of doing, which considered the student as the active protagonist of his or her learning. Dewey, whose central work *Democracy and Education* was published in 1916, insisted that the school should be a social laboratory, where the child was prepared for a democratic life through critical inquiry and problem solving. These ideas found echoes in the proposals of Freinet (1896-1966), who in the 1920s developed cooperative techniques of writing and free expression, and in Maria Montessori (1870-1952), who first presented her method in 1907 (Montessori, 2020; Álvarez Uría, 2019).

The expansion of compulsory education, between the 1870s and 1930s in Western Europe and North America, represented a major break with previous elitist education[4]. In France, for example, the Ferry laws (1881-1882) established free, secular and compulsory education. This process consolidated the idea that education was a social right and a tool for national development. At the same time, the advance of the Industrial Revolution (1760-1914) introduced techno-scientific pressure on school systems, which began to include technical and vocational content. Education came to play a key role in building human capital, especially after the Second Industrial Revolution (1870-1914) (Tröhler, 2011; Álvarez Uría, 1992; Depaepe, 1993).

Also the feminist movement, which gained strength during the second half of the nineteenth century, was instrumental in transforming the educational landscape. Writers such as Mary Wollstonecraft and later Simone de Beauvoir and bell hooks denounced the systematic exclusion of women from formal knowledge and demanded an education that recognized their intellectual and political agency (Hooks, 1994; Biesta, 2022; Navarro, 2004). These struggles achieved important advances in women's access to secondary and higher education, especially between the 1910s and 1930s.

Between 1880 and 1930 educational psychology was also consolidated as a scientific discipline. William James (1842-1910) published *Talks*

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to Teachers (1899), Edward Thorndike introduced principles of empirical learning from 1903 and Jean Piaget developed his theory of cognitive development between 1920 and 1950. This model was complemented by the contributions of Luria and Vygotsky, who emphasized the role of cultural and linguistic mediation in the formation of higher psychological functions (Luria, 1976; Vygotsky, 1978; Piaget, 1972; Hernández Díaz, 2011).

During the interwar period (1918-1939), innovative pedagogical proposals emerged, such as those of Edouard Claparède, Gisèle de Failly (CÉMEA) and Rudolf Steiner with Waldorf pedagogy (1919). These currents rejected mechanistic behaviorism in favor of an education centered on the integrality of the subject, including aesthetic, ethical and spiritual dimensions (Cambi, 2006; Kuhn, 2018; Escolano Benito, 2000).

Despite their theoretical impact, many of these proposals were marginally applied, facing institutional and political resistance. However, their legacy lives in current debates on inclusive curricula, critical education and holistic approaches. Finally, Paulo Freire's 1968 work *Pedagogy of the Oppressed* consolidated an emancipatory perspective of learning, based on dialogue, critical consciousness and social transformation. Freire (2018) questioned banking pedagogies, proposing an education that articulates knowledge, power and social justice (Mignolo, 2011; Viñao, 2015).

Lessons from cognition studies

From contemporary philosophy, understood not only as a speculative discipline, but as an active component of the cognitive sciences (Varela *et al*., 1991; Vallverdú, 2011), it is possible to approach the phenomenon of learning from a holistic and integrative perspective. This approach overcomes the dichotomy between mind and body, reason and emotion, or theory and practice, to situate knowledge as an embodied, situated and socially mediated process.

While Socrates' maieutic method has been historically influential -considered one of the first systematic attempts to activate critical thinking through dialogue- it is important to recognize that much of the Western philosophical tradition has focused on the nature of knowledge (*episteme*) and its justifications, leaving in the background the strategies for its teaching and transmission (Biesta, 2022; Bruner, 1996). Consequently, although powerful theories on truth, reason or mind have been developed, there has been lacking a philosophy of education articulated with the cognitive sciences, capable of offering effective and ethically responsible models of human formation.

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The rise of cognitive sciences since the mid-twentieth century - in dialogue with neuroscience, psychology and AI - has made it possible to reconfigure learning as a complex phenomenon, involving multiple levels: biological, cultural, linguistic and affective. Within this framework, philosophy can play a key role as a meta-reflective discipline, in charge of analyzing the ontological, epistemological and axiological assumptions of educational practices (Floridi, 2019; Vallor, 2016; Menary, 2010).

This situation raises, from an ethical, social and rights perspective, the urgency of an educational revolution. As Freire (2018) argues, education cannot be neutral: either it reproduces structures of oppression, or it contributes to emancipation. To achieve the latter, it is necessary to overcome technical or instructional approaches to learning, and incorporate a critical, dialogical and transformative gaze, where the subject is seen as an epistemic and political agent. This vision coincides with what Biesta (2022) calls a «world-centered education», as opposed to an education focused on results or competencies.

Likewise, proposals such as extended cognition (Clark & Chalmers, 1998), enaction (Varela *et al*., 1991) and *blended cognition* (Vallverdú, 2019) invite us to think about learning beyond the individual brain, in constant interaction with symbolic tools, technologies, and sociocultural environments. This paradigm questions traditional forms of schooling and forces us to rethink pedagogical mediations in the era of AI, educational algorithms, and digital recommender systems (Selwyn, 2019; Luckin & Holmes, 2016).

Thus, the convergence between philosophy, cognitive sciences and critical pedagogy not only allows us to enrich our conceptions of learning, but also opens the possibility of reconstructing education as a right, as an ethical-political project and as a transformative cultural practice. A philosophically informed education is not one that simply transmits conceptual content, but one that questions the conditions of possibility of knowing, teaching and emancipating.

To this end, it is essential to consider four key questions about cognition:

1. *Why the cognitive?* The fundamental question about cognition is to understand its purpose and role in evolution. Cognition is the most crucial adaptive feature, as it allows to design responses to environmental information, minimizing exposure to negative events and maximizing positive ones (Damasio, 2019).

In humans, this adaptation is reflected in our high rate of encephalization, socialization, neoteny, and use of symbolic thinking. An essential

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component of this process is the mirror neuron mechanism, which facilitates learning through constant imitation. This mechanism is not only crucial for motor learning, but also for socialization and empathy. Furthermore, contemporary neuroscience suggests that the brain functions as a predictive system, constantly adjusting its models of reality and the actions to be performed (Seth, 2021). This conception of the brain as a predictive system is relevant for educational adaptations, especially in schoolchildren with autism (Vermeulen, 2022).

2. *Language as a place where the human cognitive is solitary.* The second fundamental key to understanding human cognition is symbolic language, as already intuited by Aristotle, who defined human beings as political animals (*zoon politikon*) and animals with *logos* (*zoon logon echon*) in his *Politics* (1253a), suggesting that language not only communicates, but also underlies rationality and community life. This conception is taken up and complexified in the twentieth century, which was, as Richard Rorty (1967) pointed out, «the century of the linguistic turn», where multiple philosophical currents placed language as a constitutive structure of thought, subjectivity and shared reality.

From the analytic tradition, Ludwig Wittgenstein was the key author of this turn. In the *Tractatus Logico-Philosophicus* (1921), he proposed that «the limits of my language are the limits of my world» (TLP 5.6), showing a representational conception of language. But in his second stage, with *Philosophical Investigations* (1953), he argued that «the meaning of a word is its use in language», shifting the focus towards a pragmatic, situated and communitarian understanding of meaning. Thus, language does not passively describe the world, but actively shapes it through its social uses (Baker & Hacker, 2009).

In continental philosophy, Heidegger argued that «language is the house of being» (*die Sprache ist das Haus des Seins*), a central assertion in *Letter on Humanism* (1947), where he stresses that language is not a mere communicative instrument, but the way in which human beings access being and interpret themselves. For Derrida (1967), language is a network of differences and displacements (*différance*) that destabilizes any claim to stable meaning. And Foucault demonstrated in *Words and Things* (1966) that language and discourse do not reflect reality, but produce regimes of truth in the service of power relations.

However, Marx had already warned that «philosophers have done nothing more than interpret the world... it is a matter of transforming it» (1845), which leads us to insist: language cannot be reduced to an end in itself, but must be understood as a tool for collective action and in-

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tersubjective coordination. From this perspective, Hannah Arendt (1958) stresses that language is the privileged medium of political action, since «acting and speaking are so closely related that they could almost be considered the same thing».

This approach is deepened by enactivist cognition, represented by Francisco Varela *et al.* (1991), who assert that knowledge «emerges through the dialogue between the body and the world». Here, language emerges as a coordination of behavioral coordinations, as Humberto Maturana would say, i.e., as an adaptive symbolic system that allows dynamic and recursive social couplings (Maturana & Varela, 1984).

Contemporary cognitive sciences validate this vision. Studies by Lera Boroditsky (2011) show how language shapes our perception of time, space and causal relationships. From sociocultural psychology, Lev Vygotsky (1978) showed that inner language forms the basis of reflective thinking and that symbolic mediation is a condition of higher cognitive development. Piaget, although from another framework, also recognized that language allows for more complex mental operations in the formal operative stage (Piaget, 1972).

In the field of education, this transformative understanding of language is taken up again in critical pedagogy. For Paulo Freire, «language does not describe reality, but creates it with and for the other» (Freire, 2018), and that is why critical literacy is an act of liberation and not mere technical learning. In this line, Gert Biesta (2022) argues that language should not be reduced to a vehicle of content, but be thought of as a space of subjectivation, of appearance in the world, of ethical relationship.

Therefore, a philosophical and cognitive understanding of language as a symbolic instrument for action, subjectivation and social coordination makes it possible to build educational practices that recognize its political, creative and formative power. This vision is crucial in a present where human language coexists and competes with the algorithmic language of automated AI systems that also produce meaning and decisions, often without critical reflection.

Language must be understood as a means to explore and model experience, which is the true goal of the cognitive process. Language is therefore not an end in itself, but an optimized vehicle for resolving foundational elements that precede and order it. It creates a metasense from the individual, and in turn connects with the sum of organized corporealities, i.e., the social. Symbolic language, in spite of its success, is nothing more than a nuance of the felt experience. As such, it should be considered in the learning process, as a means to explore and model experience,

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which is really the essential purpose of the cognitive process. Applied to the school environment, Bermúdez and García (2016) emphasize that the problematization of language is fundamental in the systematization of experiences and in the theoretical reflection of socio-educational scientific research.

3. *When does it occur?* This question addresses the optimal temporality for learning from a cognitive perspective (Zull, 2020). Human beings, with their neoteny, show a perennial willingness towards learning. Neoteny, understood as the retention of juvenile characteristics into adulthood, has been pointed out as an evolutionary key that extends cognitive plasticity and adaptive capacity, facilitating continuous learning (Björklund & Ekdahl, 2021). This distinctive property, related to the late development of the prefrontal cortex and prolonged social dependence, allows humans to modify their mental schemas according to new experiences even in adulthood.

Although childhood and adolescence are crucial stages for the development of cognitive structures, learning can continue throughout life under certain conditions. Studies in neuroscience have confirmed that synaptic plasticity, while decreasing with age, does not disappear, and can be stimulated by meaningful experiences, novelty, and emotionally relevant context (Merzenich, 2013; Morrison & Baxter, 2012).

The anecdote of Socrates learning a new melody on his deathbed - recounted by Plutarch and reinterpreted by contemporary philosophers such as Hadot (1995) - symbolizes this constant willingness to learn as an existential feature of philosophizing. Beyond its anecdotal value, this image has been recovered in philosophical pedagogy as a metaphor of «knowing in order to die», i.e., of a formative willingness that transcends utility and is based on the exercise of thought as a continuous openness (Hadot, 1995; Nussbaum, 1997).

However, adults tend to be more reluctant to change and innovation, due to factors such as cognitive crystallization, emotional resistance to error, and cultural dynamics that discourage late learning (Illeris, 2018). Despite this, adult education programs have shown that when intrinsic motivation is fostered and individual rhythms are respected, it is possible to generate profound cognitive transformations (Jarvis, 2006). Consequently, learning should be considered a transversal capacity at all ages, as long as there are conditions that stimulate interest, contextual relevance and active participation of the subject.

Understanding this phenomenon allows us to conceive learning as an innate characteristic of human beings. Considered as a decisi-

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ve stage in the life of human beings, Chávez (2019) examines in child development the anatomical and neurophysiological bases of learning, highlighting that the combination of genetic and biological condition, together with the interaction in a historical-social context, allows human beings to build and modify their knowledge and behavior. These premises synthesize the complex process of learning generation, which constitutes an essential component for the development of what this study has called: integrated learning systems.

4. *How is knowledge for action generated?* The last key question focuses on how knowledge for action is produced, also considering the fundamental role of emotions. Cognitive processes are a sum of shortcuts, strategies and heuristics based on functional biases. These biases allow us to react in situations with little data or time, which implies a selection and manipulation of reality (Kahneman & Tversky, 1979). In fact, we are incredible beings capable of combining many reasoning heuristics throughout the same day, what Vallverdú (2019) has called *blended cognition*, an element that, in the perspective of this study, is essential to face a revolution in learning processes according to current cognitive evidence. Although we have known for decades that we are emotional and heuristic beings, the multiheuristic nature of our cognition is an area yet to be explored. Interestingly, the study of these mechanisms has been driven by research in AI and robotics, leading us to reconsider our own human cognition.

In this order of ideas, it is proposed that these questions and their answers support a more science- and learner-centered education, opening new opportunities to improve educational methods and the process of knowledge acquisition.

Methodology

To address the challenges of learning in the age of artificial heuristics from a philosophical-educational perspective, this study adopts a qualitative interpretive-reflexive methodology, aimed at exploring complex phenomena linked to human cognition and its interactions with emerging technologies, such as GAI systems. This methodology is framed within a constructivist and critical paradigm that values contextual understanding, actors' subjectivity and philosophical reflection as legitimate dimensions of knowledge (Guba & Lincoln, 2005; Flick, 2018).

The research was developed under an inductive-analytical approach, supported by the triangulation of theoretical sources, previous

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empirical studies and philosophical categories, which allowed articulating findings from multiple epistemic traditions. This methodological strategy makes it possible not only to identify common patterns, but also to reveal tensions, discontinuities and emerging dilemmas in the discourses on education, cognition and technology (Tracy, 2010).

To establish the state of the art, a systematic literature review was conducted (Booth *et al.*, 2016), focusing on the educational impact of GAI, especially *chatbots* such as ChatGPT. The literature search was conducted between January 2024 and May 2024, and covered academic publications between 2018 and 2024. The databases consulted included Scopus, Web of Science, ERIC, JSTOR, and Google Scholar.

The keywords used were: "artificial intelligence in education", "chatbots in learning", "heuristics and cognition", "blended cognition", "philosophy of technology", "epistemology of education", "ChatGPT AND education", "cognitive heuristics AND learning", among others. Inclusion criteria were applied such as: peer-reviewed articles, studies with a theoretical or empirical focus, and relevance to the fields of philosophy, pedagogy or cognitive science.

After a rigorous purging process, which included the removal of duplicates and the exclusion of marginal or redundant studies, 72 articles were selected that met the criteria for quality and scholarly relevance (Nowell *et al.*, 2017).

The main technique employed was qualitative documentary analysis, which allows extracting meanings from academic texts through thematic coding and contextual interpretation (Yin, 2015). A data extraction form was designed with the following variables: authorship, year, geographic region, objective of the study, type of methodology used, main findings and links with the conceptual categories of this study.

The analysis was supported by digital tools such as Zotero for reference management and NVivo 14, which facilitated the open, axial and selective coding of the textual corpus (Saldaña, 2021). The information was organized according to six key axes:

- Multimodality of knowledge
- Complementary languages
- Imitative sensory-motor foundation
- Cognitive biases
- Social influence
- Learning heuristics

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The analytical process was articulated in three sequential phases, inspired by Braun and Clarke's thematic analysis model:

- *Initial theoretical coding*. Relevant categories were identified from key conceptual frameworks, such as *blended cognition* (Vallverdú, 2019), sensorimotor cognition (Damasio, 2019) and functional cognitive heuristics (Kahneman & Tversky, 1979).
- *Clustering and contrasting*. The findings of the reviewed studies were compared with the categories of the theoretical model. For example, we analyzed how the works of Baidoo-Anu and Ansah (2023) or Albadarin *et al*. (2024) address (or not) the affective and bodily dimension of AI-mediated learning.
- *Reflective interpretation*. A hermeneutic-critical analysis was developed from the dialogue with thinkers such as Freire (2018), Biesta (2010) and Korol (2017), who stress the need for a liberating, situated and ethical education in contexts marked by digital inequality (Brunner, 2013; Selwyn, 2019).

The choice of this approach is justified by the complex, situated and multiscale nature of the phenomenon under study. Understanding how learning occurs in hybridized human-machine scenarios cannot be reduced to performance or efficiency metrics. It requires, on the contrary, a critical look that integrates ontological, epistemological and ethical aspects of knowledge (Floridi, 2019; Vallor, 2016).

From this perspective, AI is not approached as a neutral instrument, but as an epistemic and political actor, whose influence on education must be interrogated in terms of cognitive justice, critical literacy and human agency. Thus, this methodology does not aim to generalize, but to deepen the understanding of meaning, revealing how new forms of subjectivity, mediation and knowledge emerge in the age of artificial heuristics.

An integrated approach to learning

An integrated approach to learning is essential for designing effective systems that meet the needs of individuals. In the previous sections, several keys were stated that, in the opinion of the authors of this study, help to develop an adequate model of human cognition. These keys include the multimodality of knowledge, the complementary role of languages, the imitative sensory-motor foundation, cognitive biases, the social influence on perception and cognition, and the importance of multiple heuristics

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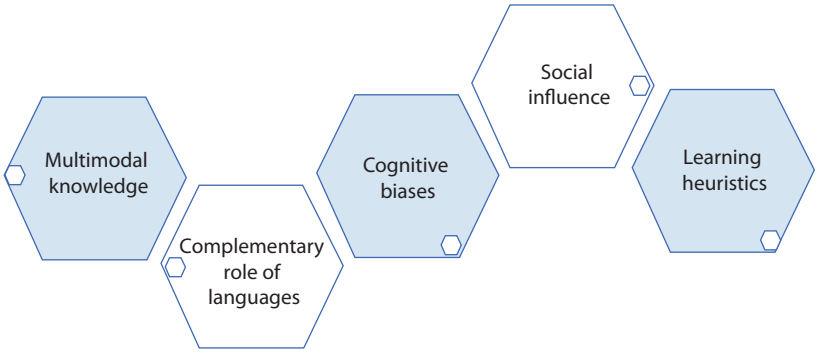
in the learning process. This section will delve deeper into each of these keys, seeking to propose the development of a comprehensive model, the backbone of which is summarized in Figure 1.

Figure 1
Keys to the integrated approach to learning



It may seem overwhelming to consider all these elements together, but this complexity reflects the true nature of human cognition. Our minds do not operate in watertight compartments, but instead work in an integrated way, using multiple sources of information and resources to process knowledge and make decisions. Therefore, a holistic approach is necessary to design systems that accurately reflect how we learn and how we can improve our learning.

Multimodality of knowledge

This aspect holds that human learning is not a unidimensional phenomenon, but involves the dynamic integration of diverse sensory and symbolic channels. This idea has been validated by both cognitive neuroscience and contemporary pedagogy, which have shown that sensory systems do not function in isolation, but in constant interaction (Shams & Seitz, 2008). Thus, sight, hearing, touch, and even smell and taste can act as complementary routes for the encoding and retrieval of information.

In education, this implies designing materials that take advantage of this sensory integration, using resources such as infographics, videos, podcasts, manipulative models and interactive activities. This proposal goes beyond a mere superficial inclusion of «multiple channels»: it is about conceiving knowledge as an embodied and distributed experience (Clark, 2011). In this way, learning becomes more robust, especially when

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it is adapted to the dominant sensory styles of the learners, favoring memory consolidation and deep understanding.

The complementary role of languages

Human learning is mediated by multiple languages, understood not only in linguistic terms, but also in semiotic, visual, symbolic and digital terms. Each language offers a particular access to reality, structuring the way we think, feel and act. According to Kress (2010), contemporary learning environments must assume a multimodal approach, where different representation systems coexist and articulate, from written text to digital animation or symbolic coding.

This conception implies recognizing the cognitive value of concept maps, visual schemes, dramatizations, music and simulations. It is not a matter of translating information from one code to another, but of allowing languages to dialogue with each other to construct complex meanings. In this sense, language is not only a means of transmitting information, but a space where the very experience of knowledge is shaped (Bakhtin, 1981). Adopting this perspective in curriculum design allows the integration of cognitive, affective and cultural dimensions of learning.

Imitative sensory-motor foundation

Learning by imitation is a foundational mechanism in human cognitive evolution. From the first weeks of life, human beings learn by observing and replicating gestures, sounds and actions of others. This phenomenon is mediated by mirror neurons, discovered by Rizzolatti *et al*. (1996), which activate motor patterns both by performing an action and by observing it performed by others. This suggests that human learning is deeply rooted in the body, motor skills and socialization.

In educational contexts, this sensory-motor dimension must be translated into practices that privilege active experimentation, manipulation, modeling, dramatization, and problem solving in real or simulated environments. The pedagogy of active learning, in this sense, is aligned with what Piaget and Vygotsky proposed as the basis for cognitive development: situated action in meaningful contexts (Tomasello, 1999).

Cognitive biases

Cognitive biases constitute mental shortcuts with an obvious adaptive function, as they allow quick responses in contexts of uncertainty; howe-

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ver, they distort perception, memory and judgment, generating systematic errors that can limit learning (Kahneman, 2011). In light of the above, training environments must incorporate specific mechanisms aimed at mitigating such distortions. This implies, on the one hand, providing objective information and, on the other, assisting students in identifying and overcoming their own biases through metacognitive strategies. Specifically, it is recommended to make biases visible through the contrasting presentation of examples and counter-examples; encourage critical reasoning through argumentative debate and dialogic feedback; and resort to explainable AI systems capable of detecting biased patterns in learners' responses and offering personalized corrections (Rahwan *et al.*, 2019).

Social influence

Social influence must be considered because individual cognition is shaped, to a large extent, by interaction with others. Beliefs and knowledge emerge, are validated, or are transformed within the framework of such interactions. Consequently, learning systems must favor structured collaboration, regulated debate and participation in communities of practice, strategies that, if well managed, enrich the collective construction of knowledge. However, these same dynamics can lead to the emergence of networks of weak rhetoric or uncritical conformity; hence the desirability of establishing explicit rules of discussion and moderation to avoid *ad populum* fallacies and group pressures (Frankfurt, 2005).

Learning heuristics

Learning heuristics -understood as empirical rules of thumb that simplify decision making and reduce cognitive load- play a relevant role in structuring formative experiences (Thaler & Sunstein, 2009). The deliberate integration of such heuristics enables efficient learning without reducing conceptual depth. Relevant applications include:

- The decomposition of complex tasks into manageable subtasks.
- The introduction of prototypical examples as an initial anchor for theory.
- The provision of immediate feedback that reinforces appropriate heuristics and corrects inappropriate ones.

This orientation is congruent with the constructivist approach, according to which knowledge is actively constructed through experien-

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ce, reflection and social interaction (Ortiz Granja, 2015; Fosnot, 2013; Vygotsky, 1978).

Based on the above, it can be stated that an integrated approach to learning should reflect the adaptive, distributed, multimodal and heuristic nature of human cognition (Anderson, 2010). Overcoming linear models of transmission requires articulating sensory perception, symbolic reasoning, social interaction and contextual decision making. Jointly recognizing the multimodality of knowledge, the imitative sensory-motor foundation, cognitive biases, social influence and learning heuristics allows to design more functional and subject-centered educational environments. Moreover, this perspective is consistent with findings from neuroscience, pedagogy and philosophy of mind (Immordino-Yang and Damasio, 2007; Clark, 2011; Sawyer, 2014) and responds to the contemporary need to educate individuals capable of acting in complex, uncertain and changing contexts. In short, educating in the understanding of one's own cognitive limits, as well as in the strategic use of available heuristics, enables learners to develop mental flexibility, ethical judgment and creativity, necessary requirements in the dynamics of the 21st century.

The challenges of learning in the age of artificial heuristics based on ChatGPT

One last crucial point remains to be considered in the integration of cognitive learning, which is directly related to the hybrid human-machine informational contexts that we are currently experiencing. In the information age, we are immersed in a tsunami of data, an avalanche of information that complicates the learning process. At the same time, AI is being integrated into the educational and work systems of millions of people.

What should a human really know, and does it make sense to insist on memorization and use of limited practices that are, in fact, no longer used in real competitive environments? Hybrid epistemic environments, assisted by computational systems, challenge many elements of previous educational paradigms (Papert, 2020). The competencies must be reconsidered under the reality of current knowledge production systems. We must remember that they start from the physical and sensory-motor experience of a being that labels the world from its shared needs, fears and dreams. Paleolithic minds for a present of technological gods, to paraphrase E. O. Wilson. Trying to overcome these challenges, it is necessary to reconsider what members of the human species should learn, not forgetting the educational challenges of the transhumanist revolution that

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will radically transform our understanding of cognition, embodiment, experience and knowledge.

The increasing incorporation of AI in contemporary educational systems raises a number of philosophical challenges that require deep reflection. According to Floridi (2019), AI is transforming not only access to knowledge, but also the very nature of knowledge, raising questions about how we define and validate what students learn. In a context where digital technologies reshape the educational experience, Selwyn (2019) cautions that we must carefully assess the extent to which machines can replace teachers without compromising the fundamental human relationship in teaching.

Likewise, Vallor (2016) proposes that the adoption of AI in education should be guided by an ethical reflection on human virtues, ensuring that these technologies promote the holistic well-being of students, rather than reducing education to a simple transfer of information. In this sense, AI should not only be seen as a tool to improve learning efficiency, but also as a means to develop ethical and reflective skills, crucial in the 21st century.

Today, humanity is facing unprecedented educational challenges, especially with regard to the integration of AI and technology in the learning process. These challenges not only affect traditional teaching methods, but also raise fundamental questions about the very purpose and nature of education in the era of machine learning systems such as ChatGPT, as evidenced by findings derived from recent systematic literature reviews (Labadze *et al.*, 2023).

The impact of ChatGPT and similar technologies on educational processes is significant and presents both benefits and challenges (Baidoo-Anu & Ansah, 2023). Some of these are discussed below, grouped as pros and cons.

On the one hand, the benefits include immediate access to a wealth of information and online resources, facilitating research and efficient learning on a wide variety of topics. In addition, AI-based educational *chatbots*, such as ChatGPT, can provide tutorials and personalized responses to student questions, enabling individualized attention that is difficult to achieve in a traditional classroom setting. These *chatbots* also provide interactive, hands-on learning experiences, such as simulating science experiments or performing math exercises, increasing engagement and understanding. In addition, ChatGPT facilitates self-directed learning, allowing students to search for answers and learn independently outside the classroom, fostering autonomy and responsibility in learning.

However, the integration of AI should not be detached from broader philosophical problematics about knowledge and subjectivity in La-

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tin American contexts. Brunner (2013) stresses that globalization and digitization are transforming education in Latin America, requiring critical reflection on how emerging technologies interact with local educational systems. Along these lines, Korol (2017) and Mignolo (2011) emphasize the importance of critical thinking and emancipatory education to prevent technology from reinforcing colonial power structures. Biesta (2010) warns that, in an era marked by measurement and automation, education must focus on the development of autonomy and ethical judgment, aspects that cannot be replaced by AI. These philosophical perspectives underscore the need for AI to complement, rather than replace, human interactions and critical thinking in the educational process.

On the other hand, there are challenges to this approach. An over-reliance on ChatGPT for answers may limit the development of critical thinking skills and the ability to solve problems independently, which could lead to shallow learning (Baidoo-Anu & Ansah, 2023). The automation of teaching through *chatbots* raises questions about the future role of teachers. If teachers become less necessary due to technology, this could negatively affect the quality of education in terms of human interaction and emotional support (Selwyn, 2019).

In addition, the information provided by ChatGPT is not always accurate or reliable. Several studies have documented errors called «hallucinations»-plausible but incorrect responses generated by language models-as a significant limitation to its rigorous educational use (Bender *et al*., 2021). This could impair students' comprehension and knowledge by receiving incorrect answers or biased information. Finally, interaction with *chatbots* does not contribute to the development of social and emotional skills that students gain through human interaction, this being especially important in early education and in teaching social-emotional skills (Holmes *et al*., 2019).

To the above, it is worth adding intrinsic problems of large-scale language models (LLMs), such as the aforementioned hallucination and data cannibalism, the phenomenon in which the model recycles training content without generating new knowledge, which limits its capacity for conceptual innovation (Bommasani *et al*., 2021).

The impact of ChatGPT on education has the potential to improve access to information, personalize teaching, and foster autonomous learning (Mao *et al*., 2024). However, it also presents challenges related to over-reliance, information credibility, teacher-student relationship, and social skills development. The key is to use these technologies in a balanced way and consider how they complement, rather than replace, traditional education (Vallor, 2016).

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In response to these tensions between the benefits and risks of using AI in education, in March 2023, a consortium of leading UK universities, including Oxford, Cambridge, and Imperial College London, established five guiding principles for the ethical use of GAI. These principles seek to promote the responsible use of AI while ensuring academic integrity. They include supporting students and staff to become AI literate, adapting teaching and assessment methods, and ensuring equal access to AI technology. The agreement represents a change in attitude towards AI, recognizing its potential impact on education.

However, it is worth remembering that prior to the establishment of these principles, some universities had banned the use of AI due to concerns about plagiarism and academic fraud (THE, 2023). In a turbulent context, this initiative came just four months after, in March 2023, several UK universities - including some associated with the Russell Group - completely banned the use of AI, warning that students caught using it would be expelled. Moreover, in April of the same year, some of these universities stated their intention not to use Turnitin, claiming that its new AI-based plagiarism detection system could emit false positives (*The Guardian*, 2023). With the new agreement, UK universities committed to incorporate the ethical use of AI in teaching and assessment as an opportunity, not a threat.

Another notable challenge is the information overload to which students are exposed. We live in an era of data abundance, where the constant flow of information available online can be as harmful as it is useful. This «infoxication» can lead to cognitive fatigue and difficulty in discerning relevant and reliable sources (Bawden & Robinson, 2009). Educators face the task of teaching students to critically navigate through this flood of data, evaluate the credibility of sources, and develop digital critical thinking (McGrew *et al*., 2018).

The incorporation of AI and automation in education raises questions about the future role of teachers. How does the teacher-student dynamic change when AI takes on active roles in teaching and assessment? How are essential human qualities, such as empathy and personalized guidance, preserved in environments increasingly mediated by algorithms (Holmes *et al*., 2019; Selwyn, 2019)?

The question of what a human should actually know in the age of AI is fundamental. If much of factual knowledge is at the click of a button, education must focus on the development of higher skills: critical thinking, problem solving, creativity, and socioemotional skills, difficult to replicate by machines (Brynjolfsson & McAfee, 2014; Nussbaum, 1997).

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Moreover, the transhumanist revolution, looming on the horizon, raises even deeper questions. How will the merger between technology and biology affect our understanding of cognition and embodiment? How will the human experience change as the boundaries between the biological and the artificial become blurred (Bostrom, 2014)?

Considering the above, this study reaffirms that education in the age of AI and the technological revolution is not only about acquiring information, but also about cultivating adaptive capacity, critical thinking, and deep understanding about complex phenomena. Educators and institutions must be willing to evolve and reinvent themselves to prepare future generations for an ever-changing world. The task of balancing tradition with innovation, and humanity with technology will be one of the great challenges -and also opportunities- for education in the 21st century (Vallor, 2016; Floridi, 2019).

Ultimately, in the era of ChatGPT it is expected that assessment will cease to be synonymous with verifying the ability to retain information, and become a process focused on the development of higher intellectual capacities: processing, appropriating, refuting, adapting and applying knowledge in real and diverse contexts.

Reflections from the educational perspective regarding the design of integrated learning systems

From the educational perspective, the transformative dynamics of the 21st century demand a reconceptualization of the design of integrated learning systems, especially in relation to technology. These transformations respond to a combination of factors: accelerating digitization, the emergence of new epistemologies, and the need to prepare learners for complex sociotechnical contexts (Selwyn, 2016; Luckin & Holemes, 2016). For decades, educational technology has been addressed from an instrumental approach, focused on its technical-operational and infrastructural dimensions, without significant integration into pedagogical processes (Cuban, 2001).

Moreover, in many cases, technology has been perceived as a threat to the role of the teacher, especially when associated with automation or disintermediation of traditionally human functions (Holmes *et al.*, 2019). This vision has defended a hierarchical structure in which the teacher remains an authority figure and possessor of knowledge and truth, heir to a banking model of education (Freire, 2018).

However, it is necessary to move towards a horizontal and dialogic perspective, in which the participants of the educational act interact with the available information, mediated and enriched by the professional

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knowledge of the teacher. This reconfiguration is aligned with pedagogical approaches focused on dialogue, co-construction of meanings and critical citizenship (Biesta, 2010; Freire, 2018). Such active participation allows improving the ability to interpret, contrast, evaluate and critically position oneself in the face of complex phenomena.

It is important to remember that humans are social beings, and that our capacity for abstract reasoning and symbolic thinking distinguishes us evolutionarily from other species (Tomasello, 1999; Damasio, 2019). Therefore, any results obtained from our interactions with educational chatbots should invite us to reflect on the mechanisms by which algorithms cross-reference data to generate responses in a matter of seconds, including and excluding certain sources and variables: processes that are neither neutral nor opaque by chance, but the result of human decisions encoded in automatic systems (Bender *et al*., 2021; Crawford, 2021).

We must optimize the use of these technological resources by learning to ask questions, cross-examine, triangulate, confirm and discard data. This implies critical digital literacy, not only in technical use, but in the ethical and epistemological understanding of how AI works (George Reyes & Avello Martínez, 2021). It is also crucial to be aware of its computational limitations -such as training biases, algorithmic opacity, or «hallucinations»- as well as its socioemotional implications in the educational relationship (Zhai, 2022).

As teachers and researchers, it should be advocated that the approach towards AI and automation in education should move away from prohibitionism, denialism and reductionism, and promote an interdisciplinary discussion based on the knowledge of these resources. As Zhai (2022) points out, although AI can perform tasks such as writing a coherent and accurate academic paper, it cannot replace creativity and critical thinking, nor can it replace the richness of human social interactions that impact the affective component and the physical and mental health of participants in educational processes.

The challenges of learning in the era of artificial heuristics are not limited to the instrumental mastery of technological resources, but demand, taking up the words of George Reyes and Avello Martínez (2021), «to reconceptualize the term digital literacy from different angles as a way to understand what skills are needed to participate in a hyperconnected world» (p. 1).

Therefore, it is urgent to generate deep reflections on the configuration of integrated learning systems that balance tradition and innovation, and humanity and technology. These reflections must take place in the pro-

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cesses of initial and continuous teacher training and in the collective agreement of educational guidelines since, as Freire (2018) points out, it is essential to practice a humanizing pedagogy that establishes a permanent dialogical relationship with the oppressed, instead of imposing itself on them.

Furthermore, the discussion on the relationship between GAI and education should not be limited to the detection of plagiarism or concerns about the integrity and quality of academic production. In this sense, it is essential for educators to be protagonists in the critical evaluation of any AI-generated resources, in their adaptation to specific teaching contexts, and in the design, implementation, monitoring, feedback, and reconfiguration of integrated learning systems that reflect the complexity of human cognition.

At the level of educational research, Albadarin *et al.* (2024) recently mapped the relationship between the ChatGPT-education binomial, identifying an emerging field of empirical research that, within the area, requires continuous exploration and proactive dialogue with policy makers, stakeholders and educational practitioners. According to these authors, this approach is essential to stimulate, refine and optimize the use of AI in learning environments, as well as to effectively integrate human interaction and collaboration in educational activities mediated by AI tools.

Finally, it is noteworthy that this study converges around the perspective of Yanes Guzmán (2016), reaffirming that one of the fundamental educational purposes in contemporaneity consists of «configuring a new way of thinking, of training, of educating, a new paradigmatic epistemology that allows us to understand our planetary home through a systemic, holistic, logical, transdisciplinary and complex paradigm» (p. 121). Undoubtedly, in the paradigm referred to technologies, the social and the human acquire a constitutive dimension within the cognitive processes that are undertaken in search of knowing the world and understanding its phenomena through models of integrated learning systems that consider various keys, among them, the six that make up the model presented in this work.

Final considerations

Throughout history, philosophy and education have undergone a remarkable evolution. We have moved from an approach focused mainly on the content of knowledge to a deeper understanding of cognitive and learning processes. This transformation, which has taken place over centuries, has led to more sophisticated pedagogical approaches. The model proposed in this paper rescues some essential elements: Human learning is based on

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cognition, an intricate and multifaceted process, essentially multimodal and rooted in sensory-motor and imitative experience. In addition, symbolic language plays a crucial role in the way humans interact with the world and with each other. It is critical to recognize that human cognition is marked by biases and heuristics that influence the way information is processed and decisions are made. These biases are an inherent part of cognition and must be understood and considered in learning processes.

In the current era of information and AI, there are significant challenges in education. Information overload, increasing reliance on technology, and the potential reduction in the role of teachers are crucial aspects that require careful attention. Education must evolve to focus on the development of critical skills, creative thinking and socioemotional competencies. Education systems must adapt to the reality of hybrid epistemic environments, where technology plays an increasingly important role. However, the future of education is also influenced by the growing fusion between technology and biology. This revolution raises fundamental questions about the nature of cognition, embodiment and human experience. Education systems must be prepared to adapt to these transformations.

Education in the 21st century must strike a balance between tradition and innovation, incorporating technology effectively without losing sight of the importance of human qualities such as empathy, creativity and critical thinking.

Regarding the idea of technology, it is proposed to abandon the conception that associates it merely with the technical-operational and infrastructural domain, which involves machines and sophisticated algorithms. On the basis of holistic theoretical foundations, we stress the need to encourage critical positions in the face of discourses that reduce it to mere support resources with no deep impact on teaching and learning processes. These discourses, with a certain degree of epistemic naivety, consider it as free of opacity, questioning and interests. On the other hand, it is essential to situate an integrative approach in which technology is constituted as an essential element within the complexity of contemporary human school activity.

In this sense, it is important to remember that the incorporation of technological resources into classroom dynamics, within the framework of a modern socio-constructivist perspective and its related approaches, is closely related to planning enriched by dialogical teacher-student interactions. In these interactions, a significant number of variables must be taken into account, among which are: the characteristics inherent to the teaching context, the diversity of learning styles, the concerted pedagogi-

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cal purposes and the development of competencies necessary for recognizing the subjects and their inclusion in the social dynamics.

In short, if education is required to adapt to the challenges of the current era, where technology and information are constantly evolving, such education must focus on the development of skills and competencies that allow people, without idealizations about their cognitive processes, to face a world in constant transformation and to question the traditional boundaries between the biological and the artificial. In this perspective, it is believed that reflection and adaptation are key to address these challenges and to take advantage of the opportunities offered by education in the 21st century.

Notes

1 According to historical records, the first *chatbots* in history, ELIZA, was created in 1966 by Massachusetts Institute of Technology (MIT) professor Joseph Weizenbaum.

2 From a technical point of view, *chatbots* are considered a type of AI capable of generating content not only by imitating, copying or replicating an existing pattern (traditional AI), but also by creating new content based on information that this technology manages to correlate and/or, in the specialized jargon circulating in the field, «learn».

3 On the web page of OPENAI®, the developer of ChatGPT, there is a definition of ChatGPT in the following terms: «A model called ChatGPT which interacts in a conversational way. The dialogue format makes it possible for ChatGPT to answer follow up questions, admit its mistakes, challenge incorrect premises, and reject inappropriate requests".

4 Referring to the global trajectories of compulsory education, Besche-Truthe (2022) adds that compulsory education has been consolidated as an essential component of robust state education systems, particularly since the promulgation of the Universal Declaration of Human Rights in 1948.

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Statement of use of artificial intelligence
We, Néstor Alexander Zambrano-González and Jordi Vallverdú Segura, **DECLARE** that the preparation of the article entitled "Challenges of learning in the era of artificial heuristics" has not involved the direct use of generative artificial intelligence (AI) tools or automated systems for writing, analysis or synthesis of content. Only commonly used academic technologies have been used, systemically integrated in specialized electronic search engines, scientific databases and advanced platforms for editing and reference management, in accordance with the usual standards of academic production. All the contents, arguments, interpretations and essays are the result of the intellectual and reflective work of the authors.

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Friction and Personal Growth in Digital Environments

Fricción y desarrollo personal en entornos digitales

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Abstract

This article discusses how the lack of friction in digital environments affects personal growth and development. We define friction as the natural resistance within a medium that forces us to recognize our limits and establish our place within it. This approach draws from Rousseau's anthropological theory, mainly the dichotomy between Negative and Positive Education; or the differences between a formative process that forces self-awareness and a formative process where we become passive consumers of cultural items. Our diagnostic hypothesis is that today's digital technologies are not designed with digital skills development in mind. Instead, they prioritize ease of use and immediate gratification. By analyzing examples of the evolution of video games and word processing software; we remark how frictionless access to digital goods and the illusion of choice undermine opportunities for meaningful engagement with our digital experiences. This suggests that simply restricting screen time is not enough to foster complete personal development in our increasingly digital world. We must also critically examine how the underlying conditions of these digital spaces shape our behaviors and thinking patterns. The relationship between technology design and human development deserves greater attention. The article concludes by calling for the conversation about implementing Negative Education principles in digital environments by creating intentional friction points fostering a generation of truly capable digital citizens.

Keywords

Education, Philosophical Anthropology, Personality, Digital Technology, Digital Skills, Interface Design.

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Resumen

En este artículo se discute cómo afecta la "falta de fricción" en los entornos digitales al desarrollo personal. La fricción se presenta como las condiciones que nos fuerzan a apropiarnos de nuestros límites y a encontrar nuestro lugar en un medio. Este planteamiento se recoge de la teoría antropológica de Rousseau, en concreto, de la dicotomía entre la educación negativa y positiva, o las diferencias entre un proceso formativo que nos obliga a tomar consciencia de nuestra existencia y un proceso formativo que nos diluye en productos culturales. La hipótesis de diagnóstico es que las tecnologías digitales actuales no se diseñan pensando en ofrecer oportunidades para desarrollar las habilidades que requiere el mundo digital. Ejemplos como la evolución de los videojuegos o el diseño de procesadores de texto ilustran cómo la facilidad de acceso y la sobreabundancia de opciones, afectan a la apropiación de nuestras experiencias digitales. Esto implica que no es suficiente con limitar el tiempo de exposición a entornos digitales para promover un desarrollo personal integral, también hay que mirar hacia las condiciones de este nuevo medio, de creación humana, y cómo nos configuran. Las conclusiones del artículo son una invitación al debate sobre cómo implementar una educación negativa en los entornos digitales que permita la educación de una ciudadanía digital competente.

Palabras clave

Educación, antropología filosófica, personalidad, tecnología digital, competencia digital, diseño de interfaces.

Introduction

This article addresses personal development in the digital age from a philosophical and educational perspective. With the focus set on the metaverse—the «dark zone» warned by philosopher Simone Arcagni (2023)—the digital age still poses challenges at both the individual and collective levels. The aim of this research is to analyze an issue that is evident in digital native generations: how does the *absence of friction* in digital environments affect them on a personal level?

The starting hypothesis is that digitization, by redefining the spaces we inhabit, also affects personal development. This was already raised by sociologist Sherry Turkle in *Life on the Screen* (1997), when she pointed out that constant exposure to screens blurs our body, hence affecting our identity. Turkle denounced this situation before the turn of the millennium, the internet *boom*, and the proliferation of screens brought by mobile phones. These events introduced a further complication to a situation that philosopher Luciano Floridi (2015) has characterized as a leap from *life* to *onlife,* a hybrid existence between the digital and the physical that is liminal in nature.

This new condition presents a fundamental paradox. With the promise of facilitating and optimizing all dimensions of human experience, it eliminates the essential physical resistances that a person must face. In the *infosphere,* which is how Floridi (2015) refers to the space of *onlife,* space-

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time coordinates are reorganized according to algorithmic logics that privilege immediacy, simultaneity, and the elimination of distances. The temporal and spatial frameworks that delimit our existence and that we need to master in order to achieve integral personal development are altered.

This phenomenon raises a major pedagogical and anthropological problem, as it questions the very foundations of human development in increasingly digital societies. The importance of the issue lies in the fact that new generations are growing up in environments that lack the natural resistance that has traditionally fostered the appropriation of the body and the environment to develop an autonomous personality. This article highlights the absence of friction in digital media. This idea emphasizes that these difficulties and obstacles are fundamental elements for growth, adaptation, and the construction of a personal identity.

The relevance is reflected in recent studies on the influence of digital environments on young people. The data show a growing concern about the impact of digital technologies on the cognitive and emotional development of children and teenagers. Studies such as those by Nagata *et al*. (2024) and Muppalla *et al*. (2023) highlight the urgent need to rethink our relationship with digital environments. This was one of the motivations behind Floridi's manifesto for *online* life (2015). While this manifesto calls for acceptance of the conditions of the digital world as a means of adaptation, this article, on the other hand, proposes a different perspective and calls for the recovery of elements that are essential for personal development in digital environments.

The position presented in this paper takes as its starting point the concept of «negative education» proposed by Jean-Jacques Rousseau, which is used to defend the need for friction in the digital world. Friction will therefore be the key concept. This is understood as the difficulties imposed by a medium. Difficulties that complicate existence but, in turn, force us to accept its limits and be aware of the medium. In the physical world, friction is imposed by a medium that is beyond our control. In the case of the digital world, which is a human product, these difficulties are optional, and it is counterintuitive to think of introducing friction unless it is for recreational purposes. As discussed in previous research (Ramos & Fuentes, 2020), technological development tends to build transparent devices that blend into our lives and become necessary to their users without drawing their attention. However, if friction is fundamental to the development of autonomous and active individuals, it will be necessary to rethink even political intervention. For this reason, this article proposes the absence of friction as an open debate and line of work.

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This position is defended on the basis of a specific use of the term friction in dialogue with Rousseau's anthropological theory. The underlying idea is that resistance from the environment is a necessary condition for human development, something that has been analyzed in various philosophical and pedagogical traditions. For example, the phenomenological tradition is built on the subject-environment opposition. Authors such as Maurice Merleau-Ponty have pointed out that corporeality and its confrontation with the world constitute the basis of all experience and knowledge. The resistance of the world to our bodies is what allows us to develop a body schema and, subsequently, an awareness of ourselves as situated beings. This article conceptualizes this resistance as the problem of friction. In the field of education, the importance of obstacles and challenges has been recognized by constructivist theorists such as Jean Piaget, who identified cognitive imbalance ( ) as the driving force behind learning. More recently, we can point to the studies of Elizabeth and Robert Bjork in educational psychology on how «desirable difficulties» improve learning (Bjork & Bjork, 2011). Desirable difficulty could be considered equivalent to friction, but this concept does not capture the nuance introduced by the idea of friction with regard to the differences between the natural and digital environments that we are trying to highlight.

A philosophical-conceptual methodology analysis was used to develop this article, which consisted of:

- A critical review of texts in the philosophy of education and digital studies.
- A comparative analysis between Rousseau's anthropological theory and the conditions of today's digital environments.
- The examination of paradigmatic cases as scenarios for philosophical reflection.
- Argumentative synthesis aimed at proposing new lines of research.

First, Rousseau's anthropological theory is analyzed, in which friction plays a fundamental role in negative education. Next, the characteristics of the digital environment are reflected upon and how opportunities for personal growth in this context promote a passive attitude. Finally, it is pointed out that the state-of-the-art is complex and that it is necessary to rethink how to introduce friction into the digital environment to enable comprehensive personal growth; after all, the skills required for active digital citizenship are well known (Gozálvez Pérez & Cortijo Ruíz, 2023), the challenge is *how to educate the inhabitants of the digital world.*

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Negative education and friction

It is common to refer to Jean-Jacques Rousseau's *Emile, or Treatise on Education* as the founding text of modern pedagogy. For example, for education historian Lorenzo Luzuriaga (1959, p. 16), it is the first modern text among the fundamental books on pedagogy, ignoring such relevant works as John Locke's *Some Thoughts on Education*, among others. Historically, it can be said that *Emile* initiated a new way of looking at pedagogy, due to the dialogue established with Rousseau's anthropological theory by authors such as Johann Friedrich Pestalozzi, who did recognize himself as a pedagogue and attempted to transform the educational ideas discussed in *Emile* into pedagogical practices, as proposed by Michel Soëtard (2012). However, technically, it is important to insist that characterizing *Emile* as a pedagogical text is meaningless, as it is not a pedagogical manual nor does it claim to be one.

Rousseau (2010a) is clear that it is an anthropological reflection and that the aim of the text is to «study the human condition» (p. 252). More specifically, it is a study of our material condition, because *Emile* is a materialist text, comparable to and in dialogue with other materialist essays of the time, such as Condillac's *Treatise on the Origins of Knowledge*, which also starts from the idea that the subject emerges from the body and its interaction with the environment. However, the context in which we develop as people is not only physical; as social beings, most of our development takes place in dialogue with other people and interacting with humans. This is the condition that motivates Rousseau to argue that Emilie's educational process has two moments: one negative and one positive, one of friction with the natural environment and another where the human (society) welcomes us.

This division does influence later pedagogical theories as a reference to the need for a comprehensive education. The most common interpretation is that negative education is characterized as didactic exposure to nature and positive education as structured teaching under the tutelage of a teacher. This dichotomy is addressed by pedagogues such as Pestalozzi (1887, p. 96), who proposes an intuitive method that seeks to harmonize natural observation with guided instruction, and his disciple Friedrich Froebel (1912), who delves deeper into this type of pedagogical intervention in *The Education of* Man. But education in the 18th century was not understood solely as pedagogy.

For Enlightenment thinkers, the question of education went beyond how to teach; education referred to the process of personal develo-

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pment. Let us take as an example and reference the first paragraph of the definition written by Du Marsais for the *Encyclopédie*:

> EDUCATION, *n. d.* Abstract and metaphysical term; it is the care taken to feed, raise, and instruct children; thus education has as its object, 1° the health and good conformation of the body; 2° what concerns the rectitude and instruction of the spirit; 3° customs, i.e., the conduct of life, and social qualities (Diderot & d'Alambert, 1751, T-V, p. 397).

This comprehensive definition of education perfectly illustrates the broad concept used by the 18th-century thinkers. This is the concept Rousseau titles his *Emile*, and when he speaks of a process of negative education, he is not referring to the mere exposure of the child to nature, but rather to allowing the individual to take possession of his body, the vehicle that makes his existence possible, in order to complete the first dimension of education and establish him as an autonomous being, thereby preventing the dissolution of his spirit into the masses.

The appropriation of the body is fundamental to the development of the active and autonomous person in Rousseau's proposal. In a text subsequent to *Emile*, when discussing Emile's education, Rousseau (2010b) defines positive and negative education as follows:

> I call positive education that which tends to form the spirit prematurely and teach the child the duties of man. I call negative education that which attempts to perfect the organs, the instruments of our knowledge, before giving us knowledge, and which prepares us for reason by exercising the senses (p. 946).

The fundamental distinction established confirms that these are two different processes that must complement each other. What negative education requires in order to be carried out correctly is the space and time necessary to develop activities that allow us to take ownership of our bodies. It can be said that Rousseau's anthropological theory posits the altricial condition of the human species—at birth we are dependent, incapable of surviving on our own— as the process in which subjectivity emerges. Human beings become individuals through the mastery of a body confronted with an environment. It is from this realization of a subject that we can reach «adulthood.» Positive education is that which produces citizens from subjects, but without prior physical autonomy, education cannot be successfully completed as the integral development of the person (Ramos, 2014, p. 178). Thus, the educational process that allows us to be active citizens is not independent of learning to control cold, hunger, fatigue, pain, etc.

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It should be noted that Rousseau is not presenting this process as an improvement. In Rousseauian scholarship and in some textbooks, there is a tendency to articulate his educational project around the idea of «perfectibility» because he uses this term in *Discourse on the Origin and Basis of Inequality Among Men.* It is important to note that Rousseau only uses it in that text as a suggestion from Grimm and that he later avoids the concept (Binoche, 2004, p. 8). Rousseau, for example, in *Emile,* does not present the appropriation process of our body as a perfection, but as a concretization of our existence in a corporeal life (Ramos, 2014, pp. 181 ff.).

Negative education will be complemented by positive education, which Rousseau also calls «education of things.» During the negative process, the child focuses his activity on the sensitive, moving from the mere acceptance or rejection of sensations to the interconnection of sensations to construct a subject capable of discerning the outside world. The positive process involves confronting human products, social objects, and abstract knowledge. This social world is more complex and less obvious. Hence, Rousseau (2010a) says that children must be mature as to cease being «a numerical unit, the absolute whole» (p. 249) without losing their identity before facing the «world of things.» It is assumed that, through sensory activity, the shadow of consciousness emerges, and that it is by facing the friction produced by the outside world that it takes shape as a distinct identity capable of situating itself in the world and in society without becoming diluted.

John Dewey (1916) summarizes Rousseau's approach in *Education and Democracy*, pointing out that the elements that underpin educational development «are (a) the original structure of our organs and their active functions; (b) the uses to which the activity of these organs is subjected under the influence of other people; (c) their direct interaction with the environment» (p. 146). He then insists that it is essential for these elements to develop in a coherent and cooperative way in order to successfully complete the educational process, and that only then can we achieve comprehensive personal development. What can unbalance this process, according to Rousseau (2010a, p. 283), is the confusion generated by social objects—which may have, for example, an affective meaning—in individuals who lack an autonomous subjectivity capable of appropriating these objects without diluting their own identity. For this very reason, the friction of the natural world that confronts us with our limits and reinforces the position we occupy in the world is what guarantees a balanced education in terms of personal development.

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It is through immediate sensations of pain or pleasure, or through long-term effects such as hunger or cold that a stable subjectivity aware of its limits is formed. For this reason, Rousseauian anthropology argues that these elements must always be present in education and prevent children from identifying the comforts of civilization as elements of their individual existence. The question we must ask is whether this friction is reproducible in the contexts inhabited by digital natives.

The digital world as a space for positive education

Concern about how constant exposure to digital technology affects the younger generations is becoming increasingly evident in public opinion. Parents are considering protecting their children and limiting their «screen time,» as the creators of this new context have been doing for years. Journalist Chris Weller (2018) reports in an article for *Business Insider* that executives at large technology companies are doing this by banning the use of *smart* devices at home and choosing schools where there are no screens. Paradoxically, these exclusive private schools are funded by the profits of companies whose business strategies are focused on digitizing schools, because they believe this is the way to improve education. At least this is the image they want to project with these interventions, as suggested by journalist Natasha Singer (2017) in an article for the *New York Times* where she reviews three cases in public schools funded by Silicon Valley «titans»: a contradiction that invites us to question the true impact of the digital world on education and the development of new generations.

The debate on the impact of the digital world on new generations has been going on for more than two decades. Even before the emergence of mobile phones, when the functions that a single device performs today were divided between personal computers, video game consoles, MP3 players, etc, because the issue of the digital world translates into a ubiquity of information that generates uncontrolled consumption. With this in mind, *Generation M* (Roberts *et al.*, 2005) can be considered the first major reference study on the impact of screens. This report concludes by denouncing that despite parents' concerns about young people's constant consumption of multimedia content, their children reveal that they do not take measures to control their consumption habits (p. 60). This is yet another reason to say that today's actions are too little, too late.

The conclusions reached by this pioneering report are the same as those reached twenty years later by studies such as «Associations between

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Media Parenting Practices and Early Adolescent Screen Use» (Nagata *et al.*, 2024), one of many studies on how excessive screen time affects cognitive and socio-emotional development; studies that reiterate the recommendation to limit exposure to the digital world and encourage sports and social activities (Muppalla *et al.*, 2023; Swider-Cios *et al.*, 2023). However, there are also contextual analyses that question whether there is a demonstrable causal relationship between mental or emotional health problems and excessive use of digital media (Guellai *et al.*, 2022), and there are even studies that refute the possibility of such a link (Ferguson, 2024). The truth is that common sense dictates that recommendations involving turning off digital devices and engaging in outdoor activities more in line with the needs and functioning of our bodies are always convincing.

A common aspect of studies analyzing overexposure to the digital world is that they focus on device use and rarely discuss content beyond assessing whether it is educational, violent, persuasive, etc. For example, when discussing how social media affects young people, it is true that the most decisive factor is the correlation between exposure to social media and general changes in their behavior or mental health (Braghieri *et al.*, 2022; Elsayed, 2021). But we can also speculate about the impact of the constant public exposure of our lives, which can distort them, giving rise to a conflicted identity or one lacking autonomy. It is advisable to establish links between studies on social media use and studies on how our body image is subjected to social media (Thai *et al.*, 2024, p. 20; Vuong *et al.*, 2021).

One aspect that is emphasized in this article is that content and how we interact with it is what allows to understand what kind of relationship is established with the digital world at the level of personal development. Thus, it can be observed that one of the changes that seems to result from overexposure to screens is that we are becoming less curious and more passive, something that is experienced firsthand in the educational sphere. The lack of healthy intellectual habits among students is a common topic of conversation among teachers, a problem that characterizes as *mental obesity* in that it correlates with excessive consumption of *ultra-processed information (*Ramos, 2023). The idea is that an excess of superficial and fragmented information affects our mental state, reducing our ability to concentrate, assimilate knowledge, and retain information. This is equivalent to the effects that excessive consumption of *fast food* has on our bodies.

Nicholas Carr (2011) denounces something similar when he talks about «cognitive shallowness.» He traces its origin to information overload, but digitization and information highways do not, in essence, operate to the detriment of our critical thinking and curiosity; on the contrary,

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they can stimulate it. The ability to quickly access different sources is essential nourishment for active minds. Web resources such as Wikipedia or The Internet Archive, platforms such as Khan Academy or Brilliant, and all the forums that still host small thematic communities provide an irreplaceable avenue for intellectual and personal growth for those who enter the internet with sufficient maturity. The problem arises when one is not prepared to approach these resources independently and safely.

Emile's dichotomy between negative and positive education is useful for analyzing this situation. According to Rousseau, negative education prepares us to face the world with autonomy; without it, society corrupts us because we are incapable of appropriating its objects. The maturity that Emile achieves before Book IV, which begins the process of positive education, describes the maturity necessary to enter society. This maturity is also illustrated by the protagonist of the only book Rousseau recommends for children: *Robinson Crusoe.* The need to survive on an island creates enough friction for Robinson to appropriate the tools and knowledge that, in another context, he would never have understood.

The digital world is a contemporary manifestation of what Rousseau calls the world of things. It is a produced virtual space which, like the world of social objects discussed by Rousseau, exerts a powerful influence on individuals by imposing objects that are not understood. Submission to «digital things» occurs when one is unprepared for what Nicholas Negroponte (1995) defines as «being digital» and is manifested in how interfaces, applications, or content are accepted uncritically.

To discuss this point, consider an object of seemingly mundane appearance, such as a hoe. The appropriation of this tool begins when it is handed over and its operation explained. If one has sufficient physical skills to use it effectively and understands its usefulness, it can be used to perform a specific task. However, this task requires effort to be made in order to till the soil. If ones had never played with soil before using the hoe, not only would one be surprised by how hard it is to work with, but one would also be unable to appreciate how this tool facilitates the task at hand. The normal response would be to reject the activity. On the other hand, if the person has dug with his/her hands and understands how the natural environment works, the person can put this effort into context and see it as something beneficial; it is assumed, so to speak, as an advantage of civilization and not as an arbitrary punishment.

In Rousseau's scheme, the negative process would be to have experienced the hardness of the earth with one's body and to have knowledge of the environment that allows one to understand the relevance of tur-

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ning the earth over. A different case would be to find a hoe and approach it as if it were a natural object. Discovering how to use it would require an enormous effort, and learning to hoe correctly would take years. It would be difficult to see the hoe as anything more than a tiring pastime. This is what any child does. They play with the hoe, discovering that the metal part can be used to hit, make noise, or break things, but they do not appropriate the tool. When digital tools are not understood, and there is no intention to appropriate them, the same thing happens.

For example, the interface of word processors such as Microsoft Word or Libre Office Writer, without prior knowledge or explanation, quickly becomes entertainment. The interface is passively accepted, and instead of looking for the functions needed to format the document, its elements become a distraction. Most users use these tools as a digital typewriter, but the interface attempts to communicate functions through images and «skeuomorphs» —elements that mimic physical objects such as switches. These are buttons that make it easy to change the font, apply specific styles, insert tables, etc. These actions, which are executed with a *click*, have immediate feedback on the screen—like when someone hits something with a metal tool and it makes a sound—and generate playful interest. So much so that children, alone with a word processor, will use them to fill the screen with huge letters, phrases that take up several pages, words crammed onto a single page, and include irrelevant images, especially if they shine and move. No effort is required, there is no friction to achieve these effects, and they are distracting.

Adults do not usually play with word processor buttons to this extreme, but this visual feedback does establish the limit of the functions that interest us if no external stimulus arises, an imposed need that forces us to go further and appropriate a function for a useful purpose. There are cases of friction in education, when presenting a text, the author has to adjust its typographical elements. At that point, they become interested in understanding the usefulness of page breaks, automatic list numbering, style tags, footer settings, etc. But this friction is not usually enough to hold their attention on these elements after the text has been handed in.

This is something that differentiates digital things from the products of the world of things that Rousseau reflects on. The hoe is a thing, a human creation designed to intervene in an environment that offers friction to humans. The word processor, on the other hand, is a creation that allows us to interact with another human product, the document, which without a prior understanding of this object—which can be called positive, to return to the thread of Rousseau's theory used as a basis—we do not know what to do

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with. Hence, unlike the hoe, there is an intention to design the application that is not aimed at improving its function, but rather at enabling the user to take advantage of its functions or, simply, to discover that it has functions with and without actively seeking information about what the software allows us to do. This is handled by professionals in what is known as «user experience» and referred to by the acronym UX (from User eXperience).

UX teams analyze usage patterns to design efficient and educational interfaces. A classic example is the introduction of the Ribbon interface in Microsoft Office 2007. It was presented as a redesign that made prominent features that were once hidden in the application's menus. For example, the tags for structuring documents in MS Word were moved to the foreground, taking up a large part of the screen. Word's user base initially rejected Ribbon because it broke the paths they had learned to activate the features they used, and although they eventually adapted to the new interface, they continued to use it to do exactly the same thing as before. Ribbon failed in its educational goal. The underlying problem was a lack of basic typographic training: if users do not recognize the elements that make up a page or understand their function, they cannot understand how these tools help structure a document, and the new buttons simply become a distraction.

This failure illustrates a broader paradox in educational technology design. The systematic removal of obstacles in digital environments creates users who interact superficially with increasingly opaque tools. In Rousseauian terms, we have cultivated only a positive education that makes us submissive consumers of the inertia of the digital world. The absence of friction—that resistance that forces us to stop, understand, and appropriate tools—could be the key factor explaining why the digital world is thinning our experience of the world. The challenge lies in how to reintroduce that necessary friction into an environment from which we believe we can disconnect at will.

Friction in the digital world

The most common solution to the educational shortcomings observed in generations raised in digital environments is to deprive them of the digital world. Undoubtly, limiting our screen time and having a fulfilling personal life is beneficial. But this solution does not address the underlying problem: is it possible for a digital environment to promote meaningful learning and comprehensive personal development? This is the objective of proposing a debate on how to reproduce the natural friction that fosters negative education in digital environments.

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It is important to note that friction has been present since the origin of the digital world. The first personal computers required considerable effort to master: it was necessary to understand the basic principles of programming, master command systems, and understand the architecture of the machine in order to perform the simplest tasks. This initial friction acted as a barrier to entry that, paradoxically, ensured that those who accessed the digital world developed a deep understanding of the tools they used. The democratization of computing through graphical interfaces gradually eliminated these formative frictions, transforming users from active agents into passive consumers of technology.

To reflect on how friction has evolved—and largely disappeared—in digital environments, it can be examined the transformation of a seemingly simple medium: video games. Their evolution before the internet illustrates how the progressive removal of obstacles has transformed our relationship with digital objects.

Those who played video games on personal computers before the turn of the millennium may remember, for example, the first version of *Prince of Persia*[1]. When it was released, the world of young people was limited to the confines of their neighborhoods, and video games circulated among friends. They were copied without malice because there were not even stores where they could be bought. There were contacts, and in most cases, it meant losing another game, because storage media (i.*e.*, floppy disks, which are still used today as an icon for saving a file in Office) were not easy to get. This scarcity created a special relationship with each digital object: its value lay not only in its content, but also in the effort required to obtain it.

Prince of Persia was one of the video games that everyone wanted to play. When the game would start, the music and graphics seemed otherworldly. However, the game presented an immediate challenge: as it advanced, the first thing encountered was an armed soldier. When getting closer, the soldier would stab the character with his sword and the game was over. The usual thing to do was to try jumping from different points and feinting as advancing, hoping that at some point the soldier's sword would not end the character's life. The much-anticipated video game became a fiasco until, through trial and error, the gamer discovered the trick: before going to the right, where the soldier is waiting, the game has to explore the castle in the opposite direction to find a sword with which to fight him.

Today, a player would hardly ever discover that it was possible to move in the opposite direction on their own initiative. The frustration of not being able to advance would cause them to lose interest and opt for a simple solution such as searching for information on the internet or

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changing games. In those days, however, the friction of obtaining a video game led to confronting the friction inherent in the game independently. But this friction is lost when it is possible to run any other video game in a matter of seconds on any platform, which serves as an example of how, given the variety of choice and ease of access to video games, competition for users' attention is generated, forcing developers to reduce difficulty. Thus, SilverGames offers a version of *Prince of Persia* that provides only eight minutes of nostalgia, in which precisely those frictions that constituted the core of its educational proposal have been eliminated[2].

This anecdote illustrates that friction functions as the need for effort to achieve a goal that requires personal investment, and this effort involves learning that allows to appropriate the things of the world we inhabit. The design of *Prince of Persia* functions as a constructivist learning process: the forced search for the sword teaches to master the controls and acquire the skills necessary to combat. But these learning dynamics are no longer viable in the current context. The overabundance of alternatives and immediate access to tutorials or online guides eliminate the need for individual exploration. What could function as a comprehensive educational experience is relegated to those who voluntarily choose to go beyond superficial consumption of digital products.

The possibility of introducing friction into digital environments is a challenge that transcends design decisions. Following Rousseau's scheme, these «positive» spaces are inherently lacking in the «negative» experiences that enable the development of genuine skills. The systematic reduction of friction —celebrated as technological progress— has created a paradox: while we promise increasingly powerful tools, we are creating users who are increasingly dependent and unable to understand them. Only by recognizing that friction is not a defect but a necessary condition for development to imagine digital environments that, like Rousseau's natural world, force us to actively appropriate our experience.

Conclusion

This article has analyzed how the absence of friction in digital environments can compromise integral personal development. Friction, understood as a difficulty that forces us to be aware of our limits and justified in dialogue with Rousseau's anthropological theory, assuming that the digital world is equivalent to what the Genevan philosopher defines as the world of things.

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Following this analogy, the contrast between the digital world and the natural world shows that while the natural world imposes frictions that force us to recognize our limits, the digital world systematically eliminates them. For example, a stone is an object to which we recognize characteristics and assign functions, while an application presents as a means for some function that hides the complexity of its operation. This difference means that the natural world, due to its conditions, forces us to accept our limits and take ownership of our concrete existence (the passage of time forces us to accept our finitude, gravity confronts us with our weight and physical condition, etc.). In the digital world, on the other hand, interfaces are deliberately designed to hook us by hiding their mechanisms. Whether by applying well-known techniques to capture our attention, such as those presented by Nir Eyal and Ryan Hoover (2019), or by exploiting the illusion of control produced by the variety of options (Bonanno, 2014; Klusowski *et al.*, 2021), the digital world turns us into passive consumers of pre-designed experiences.

The implications of this analysis require actions that go beyond strategies focused on limiting screen time. This is not just a problem of abuse, but of how the design of these environments affects users. The digital world is not a neutral space: it is a human construct that reflects conscious decisions, including strategies that run counter to the interests of its users. For example, *dark patterns* guide users toward unwanted actions that are usually defined in commercial terms (Lupiáñez *et al.*, 2022). As a society, we cannot accept the functioning of digital environments as inevitable; we must be active agents in their transformation. The fundamental question is: why not create a digital world with frictions that promote comprehensive development?

Along these lines, there are examples of how to introduce friction into digital environments. There are games that force us to develop an active relationship with the environment, rather than just a reactive one, in terms of learning to control the mechanics. One example could be Baba is You (Teikari, 2019), which challenges players to question the very rules of the game. Solving the game's puzzles requires reprogramming the map, understanding how its elements work, and how we can combine them. Another example could be Manifold Garden (Chyr *et al.*, 2019), which breaks with conventional physics to force the mental reconstruction of a map based on geometric relationships that are only possible in the digital realm. There are also examples of pedagogical interventions such as that of Lana Parker (2022), who proposes turning the classroom into a space of productive friction so that students can take ownership of their digital lives by analyzing their experiences on social media as a community.

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These and other ways of generating conditions for comprehensive development in the digital realm must be explored to foster a competent digital citizenry. The challenge is not technical but philosophical and pedagogical: to create digital environments that, following Rousseau's idea of negative education, foster the development of genuine autonomy in the digital age. Only then will we avoid a future like that encountered by H. G. Wells' time traveler (2024), in which the childlike dependence of those who survive thanks to technology without understanding it is disturbing.

Notes

1 The impact of this video game, which has spawned sequels and even film adaptations, can be illustrated by referring to the archaeological interest of its creator, Jordan Mechner, during its development (Mechner, 2011).
2 For more information: https://bit.ly/3FDWKsa (last accessed: 07/01/2024).

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Captures and Ruptures in the Power Dispositive of Socio-emotional Education

Capturas y rupturas en los dispositivos de poder de la educación socioemocional

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Abstract

It is necessary to think about current educational institutions in light of how power is organized in society. This requires a critical perspective on how the social sphere is understood. The aim of this article is to examine philosophically the social field and the notion of dispositive from the Deleuzian reading of Foucault, opening an analysis of power in education strained by its classic plot of capture *versus* a potential critical transformative path via escape. Using a situated theoretical-philosophical method, these tensions are exemplified with the results of ethnographic research on the dispositive around Socioemotional Learning and its educational interventions. There are two findings. First, the classic reception of the dispositive as a capture mechanism establishes standardized and normalized relationships centered on emotional self-management. Second, fractures and escapes of the device in socio-emotional education are investigated in light of affective flows, reinventing other conceptions of the social and educational practices. It is concluded that this analysis of the dispositive strains the lines of force that run through it, potentially reconfiguring the social field. So, the education-emotions binomial opens up other "educational cartographies" for considering knowledge and ways of intervening in the emotional sphere, examining the management of emotions, their mechanisms of power, and also their critical ethical and political openings.

Keywords

Power, Criticizes Education, Subjection, Affectivity, Foucault, Deleuze.

Resumen

Se hace necesario pensar la institucionalidad educativa actual a la luz de cómo se organiza el poder en la sociedad. Para ello se requiere una perspectiva crítica a cómo se entiende la esfera social. El objetivo de este artículo es examinar filosóficamente, el campo social y la noción de dispositivo a partir de la lectura deleuzeana sobre Foucault, abriendo un análisis del poder en lo educativo tensionada por su trama clásica de captura versus un camino potencial crítico transformador vía la fuga. Siguiendo un método teórico-filosófico situado se ejemplifican estas tensiones con resultados de una investigación etnográfica sobre el dispositivo en torno al "aprendizaje socioemocional" y sus intervenciones educativas. Los hallazgos son dos. Primero, la clásica recepción del dispositivo como mecanismo de captura instala relaciones estandarizadas y normalizadas centradas en la autogestión emocional. Segundo, se pesquisan fracturas y fugas del dispositivo en la educación socioemocional a la luz de los flujos afectivos reinventando otras concepciones sobre lo social y las prácticas educativas. Se concluye que este análisis del dispositivo tensiona las líneas de fuerza que lo atraviesan pudiendo reconfigurar el campo social. Así, el binomio educación-emociones abre otras "cartografías educativas" para pensar saberes y formas de intervenir en lo emocional, dimensionando la gestión de los afectos, sus mecanismos de poder, pero también sus aperturas críticas ético-políticas.

Palabras clave

Poder, educación crítica, sujeción, afectividad, Foucault, Deleuze.

Introduction

Humanity is currently undergoing a crisis in which contemporary forms of statehood are being called into question, continually demanding new criteria for representation and legitimization of the strategies that organize power (Chignola, 2014). For this reason, the topic presented in this

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paper crosses the forms of social organization and the institutions that regulate and control different aspects of life. From a Deleuzian reading, the state appears as a repressive apparatus that restricts, represses, subjugates, and destroys the dynamism inherent in reality (Ferreyra, 2016). However, as Ferreyra points out, for Deleuze, the problem is not really the state, but its specificity as a social relation.

Similarly, both epistemically and politically, for Foucault (2021), the interest does not lie in the State, but in how it is governmentalized. Technical-discursive processes and instruments framework intelligibility and modes of action established in accordance with a governmentalization of the social in contemporary capitalism. For this reason, Deleuze and Guattari (2010) describe the degree of overcoding and regulation that every *socius* configures in relation to desire and its possibilities, which varies according to its mode of social production. Thus, the *socius* of the capitalist machine operates under an axiomatic logic that articulates social and technical acts, allowing for a functioning that establishes relations of capture and flexibility both with and from the state. In this way, the analyses of capitalist axiomatics proposed by Deleuze and Guattari integrate «politics and science» to describe how capital operates: it appropriates social relations through a process that articulates the economic, the social, and the political (Deleuze & Guattari, 1980, p. 575), without excluding the State[1].

However, in order to think about these institutional and state issues, it is first necessary to approach the social field: life and everything experienced is segmented and crossed by different lines, implying a multiple and complex conformation. The starting point is a particular one in which «individuals or groups are made up of lines with diverse nature» (Deleuze & Parnet, 2004, p. 141). In this multilinear perspective, the social is articulated on the basis of lines of hard segmentation that territorialize molar in the sense that they institutionalize social practices. In addition, soft or molecular segmentarities intersect, perforating historical processes. Finally, lines of flight also intersect, decoding and deterritorializing, decentering all terms from their domain to generate openings in both the social and all organizations of power and their social practices (Deleuze & Guattari, 1980; Deleuze & Parnet, 2004).

Thus, educational institutionality, as a specific field of the social, does not escape this logic. It is possible to analyze this field from this ontological and epistemological approach to the specificity of social-emotional education, since it is there that methodological, ethical, and political frameworks unfold, which allow to think about new ways of approaching the

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socio-educational field. Its configuration cannot be understood from static structures, but rather as a network of lines that, as in the social sphere, are continuously configured and reconfigured. Thus, the social in general—and education in particular—would not be a mere representation, but rather an assemblage of lines that cross, connect, disconnect, and shape it. In this sense, Ferreyra (2023) proposes a Deleuzian ontology without hierarchies or axiological privileges, showing that these lines do not operate as «exclusive ethical-political disjunctions» (p. 21), but rather as an ontology in which all capture or subjection can be traversed by molecular lines that, through social movements of escape, transform the state of things delineated by the molar, such as the State and its institutionalization.

However, as noted, this construction of institutions is framed within contemporary capitalism, which produces a governmentally administered subjectivity. This is evident in certain readings of Foucault, where the subject is analyzed on the basis of mechanisms of subjection that operate through a double bond, individualizing and totalizing, which subjugates externally and internally, and from which subjects shape themselves (Foucault, 1988). In this context, the notion of the apparatus (Foucault, 1985)—understood as a heterogeneous set of discursive and non-discursive elements, practices, techniques, and moral and philosophical propositions that form a network through which power circulates—is fundamental to analyzing these relations of domination in education. It is assumed that devices are instruments that co-opt desiring flows and shape individual formations in a rigid and normalizing social space. However, thinking about the ontological problem of education in multilinear terms allows to open up the nature of the social and the concept of the device. The social is not limited to a field of geopolitical and territorial practices designed to be ordered and dominated by state-institutional and sovereign logics, but emerges on a plane of immanence where lines and their segmentarities shape the state of things (Arellano Escudero & Castro Serrano, 2022).

Hence, the aim of this article is to philosophically examine the social field and the notion of the device based on Deleuze's reading of Foucault, opening up an analysis of power in education, which is tensioned by its classic plot of capture versus a potentially critical and transformative path via escape. To this end, we delve into the analysis of a particular device focused on social-emotional education, illustrating this ontological tension between the dynamics of capture—which seek to produce a standardized subjectivity, which reconfigure power relations, opening up

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new possibilities for subjectivation and territorialization in the educational and emotional spheres.

In this sense, the problem outlined here is not only ontological and epistemological, but also political and ethical. For Deleuze (2007a), «society does not contradict itself, but rather, above all, it flees, it escapes everywhere» (p. 125). Indeed, one could say that «the first fact about a society is that everything in it flees, that everything is deterritorialized» (p. 126). As stated, the social field is defined by lines of flight, but these are ontologically prior to power; i.e., they are movements of deterritorialization, which «may eventually deploy (re)territorializing and codifying strategies and devices of power» (Heredia, 2014, p. 92). Based on this primacy—not chronological, but *de facto* and *de jure* of the untimely (Deleuze & Parnet, 2004, p. 154)—the problem of power—via devices—is transferred to how to prevent escape. Therefore, the decoding of all *socius* is key to recoding or reterritorializing desire and its lines of flight, establishing a political movement that oscillates between capture and flexibility under the capitalist logic already described. As Chignola (2018) points out, «we are always captured by devices, but within them *we* act» (p. 242). It is well known that under the current capitalist rationality, all subjective folds seek to be governed, but their critical potential to reconfigure the power relations that shape them is always present. It is because there are folds that devices function, and it is because there is a critical power in the line of flight that there is subjection (Lorenzini, 2023). Therefore, based on this objective and this problematization of the political unfolding of lines of flight, we wish to sustain and defend the idea that thinking about the social from a configuration of multiple lines increases the possibilities of life, while also pointing to an ethical course of action. The idea is to sustain and enhance these premises in the field of education and, specifically, in social-emotional education.

Therefore, unraveling these lines, says Deleuze (2007b):

> It is to draw a map, to cartograph, to explore unknown lands... one must settle on the lines themselves, which are not content to compose a device, but rather traverse and drag it, from north to south, from east to west, or diagonally (p. 305).

In this sense, this approach conceives the social in its grips, twists, intertwining, and assemblages that can be generated in social microspaces, which are also happening and pushing institutional-molar practices. Following the logic of Gabriel Tarde (Deleuze & Guattari, 1980), static and standardized modes of the social are questioned. It is a matter of

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making a reading that is «more intensive than signifying, more geographical than historical, more of the order of lines than of structures» (Pál Pelbart, 2009, p. 118). Possibilities arise for designing multiple planes and existential cartographies that potentially lead to *critical devices* that also operate in the social sphere. These devices do not only function through coercion, capture, and violence, but also enable new territories, links, and subjectivities that open up ways of resisting and disputing the hegemonic logics of the present.

This philosophical-epistemic and ethical-political framework has been essential for thinking about the current era, as it has been prolific in recent years. Its novelty is evident in thinking about both sociopolitical processes and the field of education and its educational interventions. In short, on the one hand, there are theoretical and practical attempts to understand processes of subjectivation from the perspective of coercion and subjection to devices and current governmental reason. These are deployed in different areas and are being worked on both in Chile and around the world, namely: the effects on subjectivity of state measures against poverty, such as conditional transfer programs (Reininger & Castro Serrano, 2021) or housing policies (Besoain & Cornejo, 2015). There are also critical insights into the notion of entrepreneurship in policies to promote microenterprise (Di Giminiani *et al.*, 2023) or changes in work identities resulting from the growing installation of accountability mechanisms (Fardella *et al.,* 2016). The processes of subjectivation associated with government mechanisms in the field of education have also been explored, such as the implementation of policies on coexistence (Apablaza, 2017) and inclusion (Bornhauser & Garay, 2022). In turn, it is analyzed how, in power configurations, based on Deleuze's diagram, a mechanism of self-exploitation of subjects is installed, causing them to lose power in educational processes (Flores & Villareal, 2021).

However, on the other hand, there are considerably fewer attempts to map the folds from a vitalism that thinks about our reality in a different way, opening up to other planes of subjectivation. In Argentina, studies on the «neoliberal reason» investigated by Gago (2015) use the notion of body-territory to think about processes of subjectivation «from below» as mechanisms of resistance in the informal sector. Grinberg (2020) also points out how the intersection of neighborhood-school-subject constitutes a field of characteristics and events; he thinks about the everyday life of these neighborhoods and schools as power relations that include «the sedimented and the stratifications, the molar that captures, but also the current, the molecular and its leaks» (p. 11). In Spain, attractive findings

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are emerging in our digital age for thinking about counter-digitalization as a critical tool enabling «rhizomatic learning» (López Rey, 2024, p. 113). However, while this state of the art informs the present article, further research is needed in Chile, and it is necessary to open this discussion in a precise way.

Methodologically, this article starts from a philosophical-conceptual review of the notion of the device, based on Deleuze's reading of Foucault and its relationship to the configuration of the social and subjectivation in the context of contemporary capitalism. To this theoretical framework, we add an analytical approach to transfer it to the specific area of education, based on fieldwork for previous research carried out between 2020 and 2023[2], which ethnographically examines the apparatus configured around social-emotional education. Thus, theoretical-philosophical production is simultaneously articulated with empirical excerpts from this research to illustrate how educational devices act in the production of subjectivities from the multiplicity of lines that compose them.

Finally, the article addresses two main sections. The first section discusses the classic reception of the apparatus from the perspective of its logics of subjection and capture, which in the socio-emotional field of education are visible in the molar and normative dispositions that seek to produce a certain form of subjectivity (tolerant, optimistic, resilient). The second section explains how, from a multilinear analysis of the social, movements of escape and processes of deterritorialization also become visible, deforming and traversing the entire field, revealing other possible spaces within the education-emotions binomial and opening up other «educational cartographies» that pronounce other places and other forms of knowledge. It concludes by pointing out that it is possible to see, touch, feel, and sense what is happening in the social field and within every device, which involves untangling the lines that, in this case, make up the field of social-emotional education. This allows us, from its ontological, epistemic, and methodological premises, to open up ethical and political ways for thinking about practice in this field and how it intervenes in the emotional sphere.

Device and power as a social construct in social-emotional education and its ways of learning

As Buchanan (2021) points out, Foucault's concepts, that of the apparatus, is one of the most widely used and studied today in thinking about the social field. Deleuze (2014) mentions that Foucault resorted to it at a deci-

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sive moment in his work, when he was facing a major theoretical *problem* regarding how to conceptualize power, since escaping it seemed impossible. Starting with *Discipline and Punish* in 1975 and the inclusion of the notion of «dispositif,» Deleuze (2010) considers that Foucault manages to advance his conception of power by stripping it of a series of principles taken for granted, two of which are worth exploring in greater depth. One is the «postulate of property,» where he challenges the idea that power is the acquired or preserved privilege of the ruling class. On the contrary, power «is not so much a property as a strategy, and its effects are not attributable to appropriation» (p. 51). It is a set of maneuvers, tactics, and techniques that are exercised, not possessed. Power understood in this way lacks homogeneity; however, it is defined by «the points through which it passes» (p. 51).

The second is the «postulate of localization,» according to which power is located in the state itself. Deleuze (2010) emphasizes that, for Foucault, it is rather a microphysics of power, responding to a completely new topology that does not assign a specific or privileged place from which power emanates: it «passes through all kinds of apparatuses and institutions in order to unite them, prolong them, make them converge, make them manifest in a new way» (p. 52). Along these lines, Chignola (2018) points out that, ultimately, for Foucault, power does not exist as such, but rather «is the system—more or less organized, more or less hierarchical, more or less coordinated, and in any case always reversible—of the relationships it weaves and maintains in tension» (p. 239).

Hence the importance of the notion of the device for breaking out of *the problem* of power, since it shows that the social field is configured from different lines of power and resistance, forming points of uniqueness that traverse it. In fact, a year later, in *The Will to Knowledge*, Foucault began to think of subjectivity as folds, as points of resistance to that line outside that traces power. And for Deleuze (2010), the third axis of his work appeared: subjectivation. This line, this fold, would be the confrontation with the absolute outside and through which we subjectivize ourselves, a process that may well escape or be subject to the strategies of power.

These readings of Deleuze (2010) on Foucault's work allow us to read the social field following the idea of a «diagram» or ways of understanding the social as a plane of immanence, which are those that define the general function of the multiple devices that come into play. In this sense, Deleuze (2010) points out that it is a «machine that not only applies to a visible matter in general (workshop, barracks, school, hospital as a prison), but also generally traverses all enunciable functions» (p. 60). Therefore, for Deleuze (2006), the task consists of seeing how «the planes of immanence

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are traced» (p. 231) according to the machines that allow processes such as unification, rationalization, and subjectivation to be generated. In this way, the diagram weaves a flexible and transversal network, tracing different lines with respect to the vertical structure, where practices and strategies are defined that form a system in continuous imbalance, which departs from structural logic and draws a map of power relations.

Thus, Deleuze (2010, 2014) considers Foucault to be a cartographer, since in the different periods of his work he did nothing but think about the social from his lines. First, he traced the lines of enunciation, those referring to the discursive (knowledge). Then, he outlined lines of visibility and force as he reconceptualized power from its multiplicity, non-localization, and non-belonging (power). Finally, the question that Foucault will clarify once he has «overcome» his theoretical *problem* is that all power, all lines from the outside, fold into subjectivity, and in that fold, one can become another (subjectivation).

In short, Deleuze (2007a) argues that devices have as their components lines of visibility, enunciation, lines of force, lines of subjectivation, lines of fissure and fracture, which intersect and intermingle, emerging from one another through variations or even mutations of disposition. Thus, it is possible to link Deleuze's lines with Foucault's, since the visible and the enunciable connect with hard or molar lines; the processes of subjectivation can be crossed by the molar (subjection), and also by molecular movements, allowing the installation of possible desiring leaks which, as Antonelli (2024) shows, in addition to opening up the social field, always harbour dangers and risks, since there is nothing axiological in the unpredictability of their unfolding.

And although Deleuze (2007a) raises an ontological disagreement regarding the question of the Foucauldian device, insofar as he believes that resistance and desiring flow unfold before power, it cannot be overlooked that the current *socius* is an attempt at subjection with respect to desiring flows in the operation of «flexibility and capture» that the axiomatic capitalist mode possesses in its articulation and deterritorialization of social lines. This involves the state and its governmentality in the tension between the lines and their possibilities of escape, which can always be captured, making it impossible to think that the subject exists outside power relations. On the contrary, we know from Foucault (2006) that the subject is always confronted with constant mechanisms of subjection and control that attempt to standardize these points of resistance in order to make these folds of subjectivation governable spaces. But how do these strategies operate in the power apparatus to intercept the escapes of any movement of opening deterritorialization?

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As noted in the introduction, it is relevant to observe the field of education with the notion of apparatus, as it allows us to examine how this capitalist reason and its mode of governing the social intervenes to, in the words of Bornhauser and Garay (2022), make «learning a way of guaranteeing the participation of the subjects themselves in the activities by which they are going to dominate themselves.» (p. 236). This is the case with the social-emotional learning (SEL) device and other experiences in the field of emotional education. These initiatives are configured as normative and vertical provisions that operate as lines of hard segmentation that molarize the educational field, defining very specific objectives. It suffices to look at their definition:

> The process through which all young people and adults acquire and apply knowledge, skills, and attitudes to develop healthy identities, manage emotions, and achieve personal and collective goals; feel and show empathy for others; establish and maintain supportive relationships; and make responsible and caring decisions (CASEL, n.d.).

This model has been adopted by intergovernmental organizations such as the Organization for Economic Cooperation and Development (OECD) and, in particular, by the United Nations Educational, Scientific and Cultural Organization (UNESCO). They highlight its importance not only for personal well-being and academic performance, but also for achieving the Sustainable Development Goals (SDGs). Specifically, goal number four refers to quality education, which is also expanded to address threats to peace and the challenges of sustainability. In this regard, UNESCO (2018) has determined that social and emotional learning is central to the Education 2030 Agenda. Thus, the education of the future:

> It must go beyond typical academic and technical skills. […] The development of social and emotional skills is crucial. This includes understanding and managing one's own emotions, working easily with others, and the ability to demonstrate empathy (para. 2).

Within the philosophical perspective used here, the socio-emotional device shapes a certain discourse and a certain visibility. In other words, a diagrammatic set of acceptable statements that ultimately shapes and determines what can be said and observed about it. This normative character acquired by the molar lines can be seen in educational practice. For example, in the same institutional debates on the bill on emotional education currently being debated in the Chilean Chamber of Deputies (2019), it is mentioned that: «It is therefore necessary to move from a sys-

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tem that is generating exclusion and school failure to one focused on the needs of children and young people, their trajectory [...] we need to focus on a fundamental point: emotional education.»

Based on these hard lines and the power structure deployed by the state and its ways of articulating education laws, finer threads can be linked to the field of education itself when we delve deeper into the idea of «comprehensive education» for students and its relationship with emotional education. In the research, a person in charge of coexistence clearly expresses this during the ethnographies:

> When asked what the goal of education is, they respond: «To form people of integrity.» I ask, «And what makes a person well-rounded?» He replies, «Not only having a lot of knowledge, but also knowing how to use technology, knowing how to solve conflicts, being optimistic, having hope for the future, and being empathetic towards others» (Field diary, School 1, December 7).

There is no doubt that these statements contain underlying principles and values. Analytically, there is a relationship established between «comprehensive education» and «emotional education,» valuing certain aspects that the ideal citizen should have to the detriment of others. It is in this sense that the devices, in their attempt to capture the flows that make up the social and the educational —flows that could be associated with resistance for Foucault and with leaks for Deleuze— generate willingness in subjects based on forces of subjection to that mechanism of power, nullifying all vitalism. In this way, a certain form is imposed on behavior, which leaves «only those modes of expression and valuation that can be normalized and put at its service» (Guattari & Rolnik, 2006, p. 253), i.e., at the service of contemporary capitalist reason, which shapes an «individualized subjectivity,» with its lines of subjection «essentially fabricated and molded in the social» (p. 46).

These willingness around socio-emotional development affect processes of subjective configuration, creating a homogeneous and calculated identity. This normative and external discourse operates as a hard line of segmentarity that establishes rigid and predictable segments: there are central characteristics of a specific subjectivity that make it representational in the lines of the socio-emotional field of education. The research illustrates how these discourses foster processes of subjectivation where individuals form themselves as: «grateful» subjects, «tolerant» subjects, and «resilient» subjects.

The *grateful subject* is clearly identifiable in a narrative that emerged while exploring the relationship between education and happiness:

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> Ones must educate to be happy [...] to get rid of consumerism, be happy with nothing. This is educating for happiness, without lacking of things [...] with the idea that what someone has is perfect just because the person has it, educate in gratitude, that is an education for happiness, because when the person is grateful for everything he/she has, the person will always see life full of joy and happiness (Interviewee 04).

Closely related to this subjective display of gratitude, the findings show that educating this emotionally strong individual fosters a *tolerant individual*, especially through a variation that seems to be increasing : tolerance for frustration. «Before, the educational community was calmer and more tolerant,» said a key informant in relation to the protests that female students had carried out in response to police repression during the October 2019 protests in Chile. And in other contexts, it is used as a formula for solving problems: «You must learn to control your frustration,» the teacher said in an authoritative voice to the student who was crying because she got mad to her classmates for giving her bad instructions during a game. In this sense, the display of subjectivity, emotionally institutionalized, must be grateful for what it has and tolerate the dynamics that are presented to it. It is a fold that allows for subtle governance. The following excerpt is telling in this regard. A teacher explains her students why not all of them can get the highest score on the university entrance exam (PSU in Chile), with tolerance being synonymous with acceptance of injustice:

> «Since not all of us can get 850 points, we have to learn strategies to adapt to our reality,» she says in class. Immediately, a student responds, «Why not?» to which the teacher replies in a friendly,: «Because *you can't*, that's not how it works.» [...] And then the teacher reaffirms: «imagine! What would we do with only smart people?» (Field diary, School 1, November 16).

Without ignoring class prejudices, given that this is a school located in a marginalized and stigmatized neighborhood in the Metropolitan Region (Chile), the tone suggests that students must accept their destiny: the idea of tolerating their position because that is the way things are. It is a combination that shapes modes of discourse and practices that play off tolerance and frustration. The first comes from the Latin verb *tolerare,* meaning to endure or bear. The second comes from the Latin *frustratio,* meaning deception or disappointment. This is a suggestive combination that can be interpreted as «enduring disappointment» and at the same time «bearing the burden of deception.» It is clear that tolerance of

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frustration is part of the emotional skills to be cultivated by the emotionally educated individual. What is not equally clear is what frustrations should be tolerated or what deceptions should be borne. However, this fold of subjectivation must be molded in the subtlety of capitalist emotionality, which seeks to configure ways of being that are functional to the logic of performance, turning structural discomforts into individual responsibilities.

Finally, the socio-emotional device shapes a *resilient subject*. These three characteristics, taken together, are positioned as «life skills» to be cultivated and developed in education. As C., a pastoral teacher, mentioned: «It is essential that the school prepares its students for life, beyond academics. Empathy, self-criticism, resilience, the ability to see the positive side in order to move forward, propose, solve problems. Not to stagnate» (Field diary, School 1, December 7).

A common denominator in the resilient discourses of the social-emotional device is the implicit assumption that we must take responsibility for external circumstances. Whether it is our destiny, the future, our actions, or our decisions, the narrative is organized around the idea that, regardless of material or structural conditions—no matter how extreme—it is up to the individual to move forward and progress. One interviewee says:

> It's about working on self-knowledge. It's finding your inner strengths, taking responsibility for yourself, not continuing to blame your parents for being divorced and that's why I turned out this way, or that I was raised by my grandmother, or that my mother was a prostitute, and all those stories! [...] But what part of the chapter do you want to be? You change it and stop blaming and victimizing yourself (Interviewee 04).

This invitation to personal responsibility and decision-making can be problematic if interpreted as a way of blaming people for their adverse circumstances and exempting social and political issues from their responsibility for generating inequalities and difficulties. Under this logic, a morality of the self-managed subject unfolds. Thus, the emotional in general, and resilience in particular, becomes a technology of government, as Foucault (2008) warned, orienting practices of subjectivation toward a regime of responsibility that subjects subtly exercise over themselves. The expert deepens the argument, since taking responsibility for our lives even implies leaving the past behind:

> Taking charge of ourselves, stopping blaming [...] the rapist and whatever ruined my life... but turn the page, you choose not to live in the past, when you practice mindfulness you choose to live in the present [...]

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> and *sorry* for what I'm going to say, maybe the disappeared detainees and whatever... it is indeed a very painful episode, but let's not get stuck there (Interviewee 04).

The articulation of these lines throughout subjectivation indicates that their folds do not lie solely in generating emotional competencies that subjects acquire as skills, but also imply a certain way of being and thinking, of seeing and judging oneself in the idea of statements and categories of visibility of the diagram in their practices and social lines. These illustrations indicate a close relation with the current capitalist governmental rationality, which deploys power relations through multiple devices that seek to regulate and capture in a certain way—and not in another—the points of resistance that make up a social field such as education, which is also deeply emotional (Zembylas, 2019).

Rupture and social power to rethink social-emotional education and its modes of learning

It can be addressed what Deleuze proposes regarding the ontological of the social and its lines. A second moment opens up, raising other questions: how can the social field be traced through its lines of associations and inventions that allow the flow of desire? What dangers and possibilities open up if thinking about and analyzing the socio-emotional field of education from a multilinear analysis of the social that allows deterritorialization and processes of escape? It is necessary to repeat what Deleuze (2007a) pointed out above:

> A society, a social field, does not contradict itself, but rather, above all, it escapes [...] the lines of flight are primary. [...] they are almost the same as movements of deterritorialization: they do not imply any return to nature, they are points of deterritorialization of the devices [*agencements*] of desire. […] The lines of flight […] are what the devices of power want to tie up (p. 125).

The lines of hard or mole segmentarity are also articulated with other lines of flexible segmentarity or becoming, which are molecular. They are different, «they proceed by thresholds, constitute becomings, blocks of becoming, mark continua of intensity, conjugations of flows» (Deleuze & Parnet, 2004, pp. 147-148). In this type of line, there are not binary dichotomies, but rather a pluralism of real multiplicities that elude all dualism (Deleuze & Guattari, 1980). These lines intersect with lines of

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flight, generating shifts in social domains that, for Castro Serrano (2018), are always unpredictable. It is a shift from lines of enunciation and visibility to lines of fracture, which unfold a multiplicity beyond the number of parts, as they are made up of singularities (Heredia, 2014). The line of flight is a deterritorialization and, precisely because of this unpredictability, Deleuze insists that they are ontologically prior to power, and that is why devices seek to capture them. It is in this sense that Lorenzini (2023) thinks of the ever-present critical potential of subjects to destabilize and reconfigure the power relations that shape them, not as a side effect of the mechanisms of subjection, but as their very condition of possibility.

> The subject is, as I said before, a line, a line of flight. And this is why the Foucauldian term that identifies the subject —when the mechanism of subjection does not prevail in his analysis— the factory of the subject that knowledge and power set in motion, [...] but rather the path by which the subject becomes, is freely produced, not as a consciousness or an interiority, but as a project or an inventiveness and freedom— is «process of subjectivation» (Chignola, 2018, p. 241)

It is therefore important to draw another map in the diagram of the social that makes it possible to also think about «critical devices» that do not only operate through capture or violence. It is suggested that the diagram, as an ordering scheme that makes the multiplicity of devices with a dominant strategic function work, is in constant variation in its own social immanence. Returning to the example mentioned in the previous section, despite the lines of sedimentation and mole dispositions of the socio-emotional device in the strategic vision of the OECD, UNESCO, or the Chilean draft law on emotional education, these regulatory mechanisms are inhabited by an excess from within: molecular leaks that, in their movement of deterritorialization, demand attention. It is possible to draw other cartographies and maps that follow these movements of escape, visualizing other possible modes of subjectivation that allow the socio-emotional experience to open up to an inventive and risky practice, since « there can only be one thing in the lines of flight: experimentation-life» (Deleuze & Parnet, 2004, p. 57).

These philosophical threads can be illustrated with regard to the duality of perspectives that emerged from a workshop held during the ethnographic work. Teachers and students were asked what kind of school they dream for the future. For the former, there was no doubt: a more tolerant school, where empathy is cultivated, where emotions can be expressed, where students develop life skills, where teachers have more

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tools for social-emotional work, among other things. When asked the same question, the students imagined a school based on other elements, the most repeated of which had to do with sexuality:

> «More sex education,» «wearing skirts instead of jumpers» [sleeveless dresses], «creating more spaces for conversation to talk about issues such as politics, sex education, feminism, first aid, civic education, sexual orientation, and gender,» «the school organizing debates among students to talk about this» (Field diary, School 2, December 1).

It is clear that in the socio-emotional framework outlined by the device as standardized subjectivity, sexuality becomes a line of escape. This is a difficult topic for schools and education in general due to a certain historical matrix that has neglected and stigmatized it. Sexuality, gender, and feminism repeatedly appear as main concerns among students, in contrast to more traditional elements such as empathy, tolerance, emotional management, and expression, which were emphasized by teachers. However, at a certain point, as Ahmed (2019) would say, they are speaking a common language: the intensity of affects and emotions. Although, on the one hand, they appear in all their power, often in ways they are inappropriate, or impertinent to the school's pretensions, and on the other hand, docile, prefigured, already adapted to the language of education.

Deepening the analysis based on the theoretical-philosophical approach, the duality pointed out by the case of sexuality within the socio-emotional device, in its critical movement, is capable of bringing about other folds of subjectivation that show a different inventiveness, displaced from any standard, monolithic subject, and this occurs precisely because the diagram unfolds a continuous process of functional readjustment of the devices that it brings into play. The mode of subjectivation of the current capitalist subject is not the only one. As Deleuze (2007b) pointed out: «Those who subjectivise themselves are not only the nobles... they are also the excluded, the wicked» (p. 308). This is why Bröckling (2015) tells us that the subject is a «subjectivation in the gerund» (p. 35), the impersonal form of the verb. Thus, the question posed by Deleuze (2010) allows us to see the cracks in subjectivation: «What are the new modes of subjectivation without identity rather than creators of identity?» (p. 149). Guattari elaborates on this in one of the classes when he was a guest lecturer with Deleuze (2015), pointing out that there are particular subjectivations specific to different social groups that operate in different areas, hence the existence of subjectivations that have taken place in an «explosive» way. «The fissure is because there are different operators of subjec-

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tivity who can effect it in multiple ways, in *a singular way* in any field of the social» (pp. 149-150).

Thus, the ethnographies that were carried out show how—aside from the homogenizing practices and interventions of the socio-emotional device—alternative flows emerge to the way in which it conceives emotional well-being. These are moments, classes, or other types of encounters that are unique to education and, due to their particular combination of elements, create an empowering classroom climate that fosters affections and emotions in their indeterminacy. These spaces are frequent and varied, yet they occur on the margins of the device's intentions. As simple as they may seem, they resonate deeply with students' emotional well-being, even more so than activities intentionally designed for that purpose. They work because they are based on a warm, supportive teaching style that resonates positively with students, or because they are institutional educational projects that diversify the curriculum and use teaching methodologies that involve students. This can be illustrated concretely:

> Math class. Second grade. Students are working with cubes to learn tens and ones. They must represent a number that the teacher shows on the screen by stacking cubes of one color for the tens and another color for the ones. [...] the classroom atmosphere is great, they enjoy the activity and learn new content [...] the teacher told them to start putting away their materials and there was a resounding cry of disappointment as they asked to continue (Field diary, School 1, October 26).

As noted, it is possible to insist on analyzing that these other forms of emotional well-being that emerge in the educational field escape the relationships and interventions molarly prefigured by the device. The institutionally designed movements are traversed by small cracks and express themselves in varying durations as alternative and unforeseen flows. It is always necessary to direct our gaze and listening toward that which becomes unpredictable (Deleuze, 2010).

However, it should be noted that, in the same way, contrary experiences are also lines of flight. In other words, socio-emotional experiences in which students feel recognized are not the only movements of deterritorialization, but also those in which emotions are presented as elements of exclusion, contempt, invisibility, or inequality (Nobile, 2019). Two cases recorded in ethnographies of everyday practice are illustrated. The first is about J., a Haitian student who is not yet fluent in Spanish, leaving him invisible to the pedagogical authority of the teacher in the classroom.

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> The teacher directs her teaching to the first 10 students. At the back of the room is J., a Haitian student who does not speak Spanish well. J. has his notebook closed and is tapping his finger on the wall. He does not understand the subject matter and, although he integrates with his classmates during recess, he is overwhelmingly alone. The teacher makes her rounds, but does not stop at J.'s desk (Field diary, School 2, November 3).

The second case, recorded at another school, is K., a young student who is constantly monitored by the school due to multiple violations and negligence in her care.

> K. is responsible for her younger brother with ASD, as her mother has drug addiction problems and her mother's partner physically abuses them. The young people are practically alone. No one cooks for them or takes them to school. The student [...] approached me to ask for money for the bus so she could go home. Both students were «institutionalized,» but without adherence to or results from the program (Field diary, School 1, October 5).

Deleuze and Guattari (1980) pointed out that escape is not necessarily revolutionary or axiologically superior, and that the folds of subjectivity that pass outside the normalising pretensions of the device can become both empowering collective and social spaces and downright dangerous. However, the aim is to insist on the relevance of showing the other sides of the socio-emotional device, both in their joyful potential and in their sadness. On the one hand, there is the experience described by J., who, without understanding the language, has to cope with a class in which he is not taken into account. His existence is that of a ghost who is ignored, unable to open up experiences that would subjectivise the teacher-student relationship in a different way, petrifying and denying the set of challenges that his presence represents in the classroom and the school. On the other hand, it is also the situation of K., who, although physically present in the classroom, tells a story that focuses on his brother and how he will cope with everyday life in order to get home and feed him.

In this sense, it is necessary to question certain naive premises and avoid axiological interpretations that assign an intrinsic positive value to the lines of flight that this philosophical-theoretical framework thematizes. Fascism, according to Deleuze and Guattari (1980), can also be understood as a line of flight. Therefore, these lines must be considered from the perspective of the unpredictability of their compositions and movements, since the relations of multiplicity they establish can generate

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any type of unfolding. The dangers of escape permeate every social field, and the educational field and schools are no exception.

So, although risky, critical potential appears in every device when the molecular and lines of flight of the social field itself are allowed to flow, moving away from any figure of representation and scheme of social capture that is known to impose the rationality of capital. What is relevant is the possibility of being attentive to these lines in order to understand that other plots are unfolding. As Arellano Escudero and Castro Serrano (2022) argue, escapes map other ways of life, «allowing things, events, and modes of subjectivation to be constructed» (p. 83). The example of sexuality illustrates this point once again, and we would like to emphasize it. Students at two schools were asked about the places and moments at school that represented happiness for them, and they widely highlighted the bathroom-changing room as a powerful space of intimacy and connection where they experience moments and share spaces that do not happen anywhere else in the school.

> They mourn their "heartbreaks" and suffer "betrayals," but they also experience "the best moments." They share their secrets and intimate lives (sexuality). […] For women, it represents a place of "happiness" and encounter. In the case of men, a figure associated with «mischief» and «the best jokes» appears as memorable moments that evoke happiness (Field diary, School 2, October 27).

Analytically, it is known that there are many moments designed institutionally by schools to comply with the provisions outlined by the device regarding emotional well-being. Examples of these are fun breaks, costume days, dance breaks, workshops on emotions, among others. However, it is interesting that, despite activities specially designed for this purpose, it is the bathroom and the dressing room that emerge as elements that, in the students' voices, most profoundly mark their time at school in terms of social and emotional well-being. The bathroom as a meeting place that escapes the school's panopticon. The only space where the school does not reach. In the crack that is kept on the margins for privacy reasons, movements of escape emerge that allow us to visualize how forms of living together are also manufactured and molded from the connective and its characteristics, opening up what Rolnik (2019) calls processes of «different subjectivity production» (p. 45).

In these processes of different subjectivity, *singular* subjectivities can emerge that crack the universal notions of identity that shape us to certain contemporary logics, such as consumption and technology,

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among others. These types of current identities, although flexible as a product of the same neoliberal capitalist logic, persist, according to Rolnik (2022), in hyper-identitarian and conservative «reactive micropolitics» (p. 67) that do not open up possibilities for other worlds of relationships. Thus, the «different» or fleeing subjectivities analyzed allow us to invent other conceptions of the social and contribute from other places to educational intervention and practices.

Delving deeper into the above, this understanding of the social can be analyzed from the readings by Deleuze and Guattari (1980) on the microsociology of Gabriel Tarde. They criticize the social in its «stationary» and representational form of the idea of society, in order to go beyond its molar and institutional understanding. They challenge the idea that collective representations can explain «the similarity of millions of men.» In this sense, they return to Tarde (2011) and the world of detail or the infinitesimal; those small imitations, oppositions, and inventions that constitute a whole underrepresented field of the social realm. In this case, the social and its eventual institutional modes can be thought of in terms of creative and imitative alliances articulating flows that traverse and deform the social without blocking it. This reading emanates an immanent variation of the social, which distances itself from the mechanisms of subjection exercised by discipline and control. When thinking with Tarde (2011), other processes of subjectivation emerge that are closer to the relationships, flows, and affects that conjugate it, constituting and destituting individuals, groups, and institutions to establish another state of affairs.

What is illustrated in the bathroom-dressing room case points to a deployment of associations and inventions that, in their minor escapes, can rhizomatically reposition the institutional-molar in that social field. It is therefore necessary to decongest what has been established by the devices of knowledge-power in their subjugation, in order to return to the experiences that appear in the ways in which the educational field is shaped and its approach to the socio-emotional. There is a social composition that considers the molecular and its variations and inventions, but without forgetting the devices of power and their flows of molar capture. It is necessary to understand the articulation of the lines and the movements of the molar and the molecular themselves:

> When Deleuze and Guattari argue that societies are defined by their lines of flight or deterritorialization, they mean that there is no society that is not reproducing itself on one level while simultaneously transforming itself into something else on another level (Patton, 2000, pp. 107-108).

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This tension has been illustrated in empirical examples, since, although the device in its restraining role performs a more precise institutional function, it is observed how other cartographies emerge in certain movements and developments to understand the socio-emotional aspects within the socio-educational institution. This points to the relevance and topicality of the subject for developing other theoretical and practical inputs in the field of education. In a way, in an often suffocating educational world, the device, in its variation within the social field and in its deforming possibilities, provides a daily relief where affects—using Ahmed's (2019) expression—operate in a «sticky» way (p. 102) to intertwine different matters with ideas and objects, and can also challenge their subjectivizing function, as indicated by García (2021).

Conclusions

Some lines of reflection have been pointed out that provide light in a Deleuzian sense. However, there are also lines that have their inherent dangers. In summary, the key to reading this paper was based on a theoretical and philosophical review and analysis that brings into dialogue and tension the classical reception of the notion of the device with a multilinear view of the social that highlights its critical potentials, both its lines of force, power, and subjection, as well as its possible leaks and deterritorializing movements. This key opens up two interesting paths for the field of education. On the one hand, an attempt was made to show this tension inherent in all devices by examining the capacity to think about the socio-emotional educational phenomenon from the complexity and heterogeneity provided by the lines of force and power that are drawn within it, turning it into a device that is traversed by multiple lines and strata. This, on the other hand, opened up a space for rethinking the ways in which the processes of formation and transformation of school subjectivities are specifically addressed within the framework of capitalist governmentality, which blocks the multiplicity of lines and their desires in the social field.

Thus, the notion of device fulfills a theoretical-analytical function that establishes ontological and epistemic scope, but there are also methodological consequenced. Having conceptually thematized the work on the flows of desire allows us see what Schuilenburg (2012) thinks of as an empirical-methodological plane that facilitates both the distinction between molar domains—whether collective or individual—and molecu-

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lar domains, as well as their necessary articulation. This is why Grinberg (2022) argues that the device in his approach «dissolves the macro-micro tension» (p. 32), making it necessary to see the flows, leaks, and attachments in their possible intertwining. Thus, this journey was traveled from power relations and their sedimented and molar configurations, which dispose of policies of truth and greater knowledge, to *lesser knowledge,* those molecular corpuscles that show the uncontrollable reality «that appears with all its force in any study of everyday life» (p. 33).

This analytical key reveals a key finding: that regardless of the homogenizing practices and interventions of the socio-emotional device, alternative flows of well-being constantly emerge that are neglected but significant in everyday educational experience, both for their vitalizing powers and their inherent risks. In this way, the future of schooling and its socio-emotional approaches is brought into question, not only from the perspective of its lines of force and capture, but also from its struggles and escapes, showing different ways of approaching the production of knowledge around socio-emotional learning and rethinking the methodological approaches used to work in schools with the multiple faces of the students.

This dialogue between Foucault and Deleuze shows the tension between captures and ruptures within the socio-emotional device, calling for a rethinking of educational practices beyond the reproduction of instrumental emotional skills. However, what is relevant for educational practice is not to completely reject molar programs and initiatives for social-emotional education, but rather to identify both their mechanisms of normalization and the lines of flight that traverse them, paying attention to the micropolitical dimension of everyday school life and recognizing that spaces of greater affective intensity can also occur on the margins of what is planned. An ethical and political challenge arises to set practices capable of accompanying the invention of singular subjectivities in the interstices of the apparatus.

It becomes breathable, but also dangerous. It is air that enters the school, but it is also dangerous because it raises questions and, as Zembylas and McGlynn (2012) point out, dilemmas and tensions that are complex to solve for those in the practical field of education. Nevertheless, what is relevant is that the broad socio-emotional educational field is opening up towards these two aspects. On the one hand, the ethical. In this articulation of the device between its subjection and its own critical potential, the molar and the molecular are articulated and work at the same time, allowing the coexistence of multiple (beautiful and dan-

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gerous) leaks. This *minor effect* of the leak triggers a subjectivity that can fold in multiple ways, generating an active and vital becoming, which can traverse that purely representational and rational construction of the subject. This vitalist ethic, in turn, pushes us to rethink the common in order to «produce an ethic that also contemplates extravagance and lines of flight, the new desires for community that are emerging, the new forms of association and dissociation that are arising in the most auspicious or desperate contexts» (Pál Pelbart, 2009, p. 41). It is necessary to think about the function of multifaceted devices—which are at once political, aesthetic, and clinical—in order to allow for a reinvention of the coordinates of life's enunciation, leading to an expansion of the subjective and affective conditions of the present moment.

In this ethical relationship, on the other hand, the political aspect cannot be left out. As known, contemporary capitalism, in its broad mode of operation, seeks unprecedented subjective plasticity, oriented above all toward mass consumption. For this reason, the reinvention of each fold of subjectivity allows us to be attentive to the production of lines of flight that reconfigure every social and relational plane. It has been conclusively established that lines of flight come before processes of subjection. Therefore, the molar flows imposed by capitalist rationality nevertheless escape in all directions, allowing new, minor, and undecidable connections to emerge against the conjugations of the axioms of capital. Expressed in other words, and without forgetting the dangers of lines of flight, the molecular, collective, and rhizomatic vector of these lines disposes the device toward other polyphonic and heterogeneous assemblages of desire, refreshing the political notion, but in articulation with the social and institutional, as examined in the objective of this paper (Antonelli, 2024).

In short, as Patton (2018) indicates, it is believed that every social sphere also needs to broaden the «philosophical field» towards a post-disciplinary one: here the function of philosophy is to expand and probe the bundle of forces that the present limits or blocks, to break through the transcendences, to accompany the lines of flight wherever we witness them to see if we can approach the problems of the present in another way, one of which is the field of education in the area of social-emotional learning.

Notes

1 «Capitalist rationality» can be understood as a state apparatus that normalizes, «captures,» and controls in a «flexible» way through its self-imposed subjectivizing practices. According to Deleuze, «control societies» capture flexibly via subjecti-

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vizing modulations beyond Foucauldian disciplinary frameworks (Deleuze, 2006, p. 277). A relationship is maintained with the analyses of capitalist axiomatics that Deleuze and Guattari thematize, as indicated.

2 Entitled «Governmentality, Affects, Lines of Flight: A Critical Ethnography of the Happiness Device in Education,» the research involved a qualitative design and six months of fieldwork in three schools in the Metropolitan Region of Chile. Participant and non-participant observations, interviews, a focus group with students, documentary analysis, and participatory workshop methodologies were used to collect information. The project was approved by the Institutional Bioethics Committee of the Andrés Bello University in Chile, and all names or initials mentioned here are fictitious.

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Declaration on the use of artificial intelligence
Francisco de Borja Castro-Serrano and José Miguel Garay Rivera, **DECLARE** that the preparation of the article entitled "Captures and ruptures in the power devices of social-emotional education" did not involve the use of artificial intelligence (AI).

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The Relationship between Young People and Social Networks in Inhabiting Virtual Spaces

La relación entre jóvenes y redes sociales en el habitar espacios virtuales

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Abstract

This paper acknowledges the significant role of Internet in the development of individuals, understanding that much of our daily actions are mediated by virtual elements. From this reality, the objective is set to explore the possibility that today's youth perceive their social media not merely as technological tools, valued for their utility and user experience, but as spaces that can be inhabited. To achieve this, a hermeneutical analysis of various texts by key authors on Youth, Inhabiting Spaces, and Social Networks was conducted. It can thus be argued that inhabiting is an act that involves shaping a space through affection and symbols, as those who inhabit the space also shape and define their identity. One of the main characteristics of youth is the trial and exploration of identity expressions, which makes inhabiting particularly significant during this stage of life. This idea makes the notion of social media as inhabitable spaces especially remarkable, positioning young people as the first inhabitants of these virtual environments. The conclusion of this study suggests that it is plausible to consider young people as inhabitants of virtual spaces rather than just users, which encourages further research and development in this area. Future investigations could explore this concept further, examining how young people shape their identities in these virtual spaces.

Keywords

Youth, Social Networks, Virtual Space, Internet, Identity, Adulthood.

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Resumen

Este trabajo reconoce la importancia que han tenido los fenómenos de internet en el desarrollo de los sujetos, entendiendo que gran parte de las acciones cotidianas se ven mediadas por elementos virtuales. Es desde esta realidad que se establece como objetivo explorar la posibilidad de que los jóvenes actuales enfrenten a sus redes sociales como espacios que pueden ser habitados y no como herramientas tecnológicas, valoradas por la utilidad y la experiencia de usuario. Para esto se realizó el análisis hermenéutico de diversos textos de autores referenciales en temas de juventud, habitar espacios y redes sociales. De esta manera, se puede indicar que habitar es un acto que implica moldear el espacio por medio del afecto y los símbolos, en la medida que los sujetos que habitan moldean y dan forma a su identidad. Una de las características principales de la juventud es el ensayo de manifestaciones identitarias, por lo que habitar es algo de mucha importancia en esta etapa de la vida, volviendo sugerente la idea de que las redes sociales pudieran ser espacios habitables, estableciendo a los jóvenes como sus primeros habitantes. La conclusión de este estudio muestra que es plausible suponer a los jóvenes como habitantes de los espacios virtuales y no solo como usuarios, lo que invita al desarrollo de futuras investigaciones en esta área.

Palabras clave

Juventud, redes sociales, espacio virtual, internet, identidad, adultez.

Introduction

One of the defining features of our time is the growing impact of the internet and its platforms on every aspect of life. It is becoming increasingly difficult for individuals to stay away from apps such as Facebook, Instagram, and TikTok, which means that part of everyday life now takes place in the virtual world. This permanent exposure to the internet has prompted the academic world to explore the impacts of these technologies on the development of individuals, concluding that young people have been most strongly influenced by this phenomenon (Feixa, 2014; Morduchowicz, 2018).

Hence, this article aims to address the following question: how do young people today relate to their social networks? A possible answer may begin with the hypothesis that young people's relationship with their social networks is radically different from that experienced by previous generations. Assuming a relationship mediated exclusively by use hides the other aspects of the youth phenomenon, as the relationship seems to have depths that have not yet been fully explored. Thus, it can be theorized about the difference in the nature of the experience, thinking of it more as a spatial experience, with a virtual nature, and less as an experience of use, such as communication and information technology (ICT).

There are new possibilities for reflection by changing the focus and conceptualizing social networks not only as technological tools but also as virtual spaces. This is how the concept of "inhabiting" appears sugges-

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tive, understood by authors such as Marc Augé (2008) Martin Heidegger (2003), and Michelle De Certeau (2000) as the action through which subjects construct themselves while creating and shaping space through symbolic and emotional elements, turning it into a place. The act of inhabiting is key to understanding how young people use social networks to rehearse and consolidate expressions of identity, while appropriating these spaces, shaping them and charging them with their own symbols and emotions.

The objective of this work is to present a theoretical proposal to base scientific research on the experience of inhabiting virtual spaces. Its importance lies in the fact that it presents a perspective on the world of young people that has long remained hidden. This would allow to take a new approach to different aspects of youth, both in terms of formative development and in the areas of education, parenting, and the creation and implementation of public policies focused on social development or access to technology. It is reasonable to assume that redefining the relationship between youth and social media should have an impact on the development of all aspects of youth studies.

The methodology used to write this article was the hermeneutic analysis of academic texts, which consists of carefully reading the texts and then establishing the most relevant ideas, reflections, and statements that contribute to achieving the research objectives (Quintana & Hermida, 2019). This stage consists mainly of the selection, analysis, interpretation, and understanding of the texts reviewed. Subsequently, a narrative that aims to answer the research question, presenting the results of the analysis and understanding of the texts studied. For the selection of texts, an exhaustive review of articles from high-impact journals and diverse specialized literature was carried out. Then, a discussion was developed between the theories presented by the authors in the fields of philosophy, sociology, and anthropology, to finally present a conclusion.

This article is structured in four parts. The first part explores the concept of inhabiting; the second part presents the various elements that make up the idea of youth; the third part offers various elements for a better understanding of the nuances of the idea of virtual space; and the final part presents various proposals that refer to the relationship between youth and virtual space, focusing on studies that reflect the Chilean experience of the phenomenon. The study concludes with points that address the issues raised in this introduction, proposing guidelines and projections for future research.

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The act of inhabiting

Inhabiting involves a constant process of constructing intimate and personal space. As Heidegger (2003) states, "we inhabit not because we have built, but because we build and have built insofar as we inhabit, i.e., insofar as we are inhabitants" (p. 203). By inhabiting, subjects shape the surrounding space, while at the same time shaping themselves, which is why subjects need to inhabit spaces. In contrast, space does not need to be inhabited; it simply is there, without the need for inhabitants. This phenomenon makes the act of inhabiting something particularly human.

The world is constructed by the subjects who inhabit it, shape it, name it, and appropriate it, while defending and determining its intimacy and, above all, its identity. According to Delgadillo (2022), the relationship that subjects develop with their surroundings is conditioned by everyday experience. An example of this can be found in the experience of the neighborhood, which sustains the subjects' sense of belonging while being charged with affections and symbols that give it a particular identity. Along the same lines, Giglia (2012) establishes that the world allows itself to be discovered and named, providing individuals with the necessary foundations to create order and meaning in a space that is taking shape, while the relationship between individuals and space becomes deeper.

As will be seen, and considering the observations of Delgadillo (2022) and Giglia (2012), the act of inhabiting for young people is particularly significant, since the consolidation of their identities is generated as they appropriate their environments, humanizing and symbolically domesticating them. Through this process, these spaces become intimate places charged with emotion. Margulis (2005), in researching the behavior of young people in Buenos Aires at night, asserts that by occupying the space around them, they imbue it with elements that have a meaning exclusive to the world of youth, marking a clear distinction with those who do not belong to that youth, exiling them to the margins and expelling the rest of society from those spaces that are not their own. In this way, the act of inhabiting allows individuals to construct the contexts in which they will live (Suazo & Cárdenas, 2021). Individuals define the scenarios in which they will defend their present and project their future, these being a reflection and consolidation of an identity that is constantly evolving.

For Núñez and Benwell (2019), one of the main motivations for making a space a lived-in place lies in the consolidation of the emotional intimacy of individuals and in those immaterial and intangible processes

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that make these spaces unique and non-transferable. The construction process reflects motivations and intentions inherent to intimacy, evoking tastes and interests at the moment of shaping, making each space bear the specific stamp of its inhabitant. An example of this can be found in the moment when a house goes from being just any space to a lived-in space. Those who have had this experience will be able to point out that the space becomes their own at the moment of decorating and arranging furniture, and then giving way to the construction of memories and emotions that are inseparable from the space. Augé (2008) argues that affections and emotions are consolidated when inhabiting a space, which consequently functions as a source and sustenance of identity characteristics, as an emotional refuge, etc. Margarit *et al.* (2022) add that these spaces can also function as a context for the development of relationships with other subjects, and can therefore promote shared affections.

According to Soto (2016), the act of inhabiting would be to give affective meaning to an occupied and appropriated space, where "utilitarian variables and functional reasons are suspended to give way to the instantaneity of the feeling of pleasure originating in a set of aesthetic attributes" (p. 18). Although initial access to spaces will always be conditioned by practicality, the act of inhabiting will render the practicality of the space irrelevant, framing the mediation with subjects in a more emotional than practical light.

De Certeau (2000) argues that subjects take the construction of spaces beyond the walls of their homes, shaping the world and themselves, traveling along paths, creating memories and emotions. Along the same lines, Le Breton (2022), highlighting the act of walking, establishes that the constant journey through the heart of spaces literally shapes paths where there were none before, paths that intertwine with each other, allowing subtle grooves to appear in the earth, establishing a particular and unique identity for the space, while they take shape as subjects, constructing themselves at the same time as they construct the paths. For De Certeau (2000), estructures emerge during the journey through the act of walking. It may be a building that was previously unknown and now becomes familiar, eventually becoming a point of reference, adding a characteristic that was not its own, modifying it and, in turn, appropriating it for the emotional creation of that city. In this exercise, a voice develops around the space being inhabited, allowing it to be structured through stories that refer to it.

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Symbolic construction of places

Marc Augé (2008) argues that places are sources of meaning for those who inhabit them, considering their identifying, relational, and historical characteristics as distinctive features. It can be said that a space becomes a place when individuals imbue it with and condition it through various symbolic and emotional elements, consolidating the individual's identification with the place. This space, now understood as a place, becomes the framework for the flourishing of interpersonal relationships with varying degrees of importance, and serves as a foundation for the construction of a personal and intimate memory, in which the process of constructing the multiple manifestations of identity is conducted.

For De Certeau (2000), places are "fragmented and folded in histories [...]embedded in the pain or pleasure of the body" (p. 121). This definition highlights the intimate and emotional nature of the configuration of a place, as it refers to the personal and collective stories and experiences of the subjects who inhabit and shape that space transformed into a place. What characterizes places is not their original usefulness, but the affective elements that make them up. An example of this can be found in the place where one lives, what is known as home will always bring together a series of practical elements, such as protection from the environment or inclement weather. However, it is the emotional aspect, those fragmented and hidden stories, that make it a home, making practicality secondary and giving way to feelings and symbols. The first thing a person refers to when talking about their home is not necessarily the fact that it protects them from the weather, but that it is a place that holds memories and where they feel good.

It should not be forgotten that a place never ceases to be a space; it always refers to being there, as it will always behave as a context. However, a space will not always be a place, as there are spaces whose meaning is based exclusively on the utility they provide (Augé, 2008). Augé (2008) calls these spaces non-places, understanding them as spaces determined by their utility. Examples of non-places include a train station, a bus terminal, etc. Although for Giglia (2012), these could become places if inhabited by people, i.e., shaped by affections, emotions, and symbols.

According to Giglia (2012), places become inherent and inseparable from individuals, since those who inhabit them will always shape them, taking them wherever they go. An example of this is when someone moves house, taking with them furniture, appliances, and personal items, such as decorative objects or photographs. The subject imbues these ob-

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jects with a series of elements of identity and personality, distributing and arranging them according to their will, shaping this new space according to their motivations and interests. Inhabiting a place implies taking it everywhere, to a new home, to a new office, etc.

This aspect is particularly relevant when talking about young people, as their consolidation as autonomous individuals goes hand in hand with the establishment, appropriation, and construction of places. According to Feixa (2018), this can be observed, for example, in the construction of their intimate spaces, such as their bedrooms, where individuals express their multiple manifestations of identity. For Margulis (2005), this is established in the creation of leisure spaces, such as neighborhoods dedicated to partying and celebration with an exclusively youthful character. Along the same lines, Navarro (2019) observes this characteristic in the occupation of commercial spaces, such as shopping malls or department stores, which are re-signified and charged with symbolism by the young people who inhabit them, turning them into places with a marked youth significance. The construction of places strongly manifests the "I am" of the subjects, so for those who are fighting their identity, building and defending a place can be decisive.

An idea of youth

As mentioned above, through the act of inhabiting, individuals transform and construct spaces into places, charging them with emotions and symbols. This allows the intervened space to become a reflection of the intimate and profound "I am," making it fundamental to the development of personal identities. This idea takes on great relevance when the focus is on youth, since it is in the act of inhabiting that all those elements of identity and belonging are played out, defended, manifested, and established, turning young people into subjects who are owners of a future but, above all, belong to a present with rights and dignity.

According to Margulis and Urresti (2008), youth is characterized as a category that is articulated in terms of age, constituted in a latency of responsibilities and associated with social classes that allow the privilege of suspending the actions of adulthood. Therefore, it is assumed to be a study group belonging to a specific age range, characterized by the idea of a "social moratorium," in which individuals do not yet assume the roles and responsibilities of the adult world, which means, and taking into account what Reguillo (2013) indicates, that their perspective of the "now"

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is conditioned by what "will be" and not by what "really is." For Benavides (2021), this idea of moratorium implies pausing the productive and social responsibilities of individuals, with the intention of taking advantage of this time to acquire the tools that will allow them to better face adult life.

Authors such as Piaget (2018) and Reguillo (2013) argue that another characteristic of youth is the state of construction and testing of identity, since, as will be discussed in more detail below, this stage sees the development and consolidation of various manifestations of identity that will have consequences on both the present and future of individuals. Canales *et al.* (2015) affirm that it is necessary to understand young people as possessors of a fragile, recently acquired autonomy that is constantly challenged and strained by the rule of an adult and hegemonic world (Oliveira, 2025).

It may seem that youth brings with it a number of advantages for facing the conditions of adult life, since this moratorium presents an opportunity for individuals' skills to mature and become more effective. However, contemporary reality suggests something different. According to Feixa (2020), this period in which individuals are not yet considered adults by the community places them in a situation of exposure and vulnerability. The suspension of responsibilities, coupled with an identity that is not yet consolidated and fragile autonomy, makes them invisible in a world that can be complex and hostile.

Construction of youth identity

For Quiroga *et al*. (2021), youth serves as a stage in the development of individuals in which they consolidate and explore various manifestations of identity, forming the basis of those elements that will be decisive during adulthood. This projection into the future is fundamental to understanding the phenomenon. However, the idea is not fall into the trap of reducing young people to a promise of future adults, but rather recognize and value their present. For Reguillo (2013), being young involves the exercise of various identity practices corresponding to a current reality loaded with cultural, aesthetic, and emotional characteristics that are unique to them.

According to Muñoz *et al*. (2020), the characteristics of youth are consolidated through interaction with other individuals, especially other young people. Reguillo (2013) indicates that in this relationship, diverse forms of being young are constructed, rather than a single youth, since, in the tension and conflict generated in interactions, individuals can take di-

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fferent approaches to facing the reality of being young. This reality means that youth identities are constructed in relation to other individuals, a relationship that is mainly conditioned by opposition. For some researchers, the most relevant opposition is that generated with the adult world (Oliveira, 2025; Serrano, 2022; Krauskopf, 2004; Reguillo, 2013), which means that different young people share this common factor, making them part of a generational experience (Feixa, 2014).

According to Le Breton (2012), relationships with peers are fundamental in the construction of identity, but they also expose individuals to the possibility of being judged by the rest of the community. This experience of being judged by others is heightened in the age of hyperconnectivity, where a kind of omnipresent panopticon represented by social media prevails (González, 2017). This means that individuals develop their identity, taking into account the permanent exposure of information offered by the network and the constant judgments of the individuals who make up virtual communities, which, according to Han (2019), generates an "uncontrolled avalanche of passions that does not constitute any public sphere" (p. 119). An opinion or comment on a behavior can be addressed or assimilated, and eventually discussed, but when there are thousands of them, they become a swarm that is difficult to bear, let alone contain. For Han (2018), the multitude of opinions behaves like a noisy experience, making it almost impossible to rescue any degree of information, thus hindering the establishment of identity practices.

Identity development in the construction of places

By appropriating spaces, occupying them, and shaping them through symbols and affections, subjects transform them into inhabited places (Augé, 2008; Giglia, 2012). For several authors, the source of this impulse lies in the need of young subjects to shape and rehearse various manifestations of identity (Morduchowicz, 2018; Feixa, 2018; Reguillo, 2013). Youth becomes that moment in the lives of individuals when they experience all the characteristics that will define them in the future, but with an impact and relevance in the present.

According to Soto (2016), spaces reflect these identity-related circumstances, transforming them into places of belonging for young people and making them exclusive (Bayón & Saraví, 2022). This exclusivity is the starting point for tension with the environment (Bayón & Saraví, 2022; Margulis, 2005; Feixa, 2018). Although spaces are initially neutral, they are also contested, since, according to Días and De Almeida

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(2017), individuals establish their power and autonomy in them. When a young person appropriates a space, they are occupying a place that was previously occupied, which, according to Bayón and Saraví (2022), can lead to mutual agreement on the occupation of the space or, conversely, to conflict and tension. The second option tends to be the most common and the main break with the adult world (Oliveira, 2025; Serrano, 2022).

As for Feixa (2018) and Reguillo (2017), young people need these spaces to exercise their various expressions of identity. Identity has no value if it cannot be converted into an aesthetic expression or a form of mastery; it has no meaning if it is not shared with others, which is why occupying spaces is not an option but an imperative. For Serrano (2022), individuals need a place to be, "to find references that lead them to be aware of their existence" (p. 10). The place they inhabit and construct offers them a starting point from which they can contextualize themselves, bearing in mind that the meanings and symbolism were placed there by themselves. Hence, young people are constantly looking for spaces, personal or public, to live the identity they have been developing. They will be willing to fight for this opportunity to inhabit and will spend much of their time finding and building a place that allows them to recognize themselves as part of something and help them find themselves as subjects with identity and belonging (Serrano, 2022).

There are many examples of this, some very general, but particularly interesting are the different experiences of social protest in which young people played a leading role. Three well-documented cases of meaning-making through an aesthetic that transformed space, turning it into places of resistance, but ultimately into places for young people. According to Reguillo (2017), this could be observed in the context of the mobilizations in New York and Spain during 2011, and in the context of the mobilization of occupied squares. Aguilera (2016) makes the same observation in Chile during the student mobilizations of 2006, a phenomenon popularly known as the "penguin revolution" (in Chile, school students are called "penguins" because of their uniforms). In the first two cases, public spaces were occupied, while in the third, schools were forcibly occupied. In all cases, not only political and social issues were at stake, but also the identities of those who participated in these protests. It is common to hear comments such as "I was there," followed by recognition of having participated in a milestone event that shaped one's identity.

In these cases, it is possible to say that the act of occupying and belonging becomes almost more important than the original reason for the mobilization. Darren Webb (2022) says:

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> No! They occupied a space, they stayed, and they refused to make demands or account for themselves. Many believed that the transformed social relations of a new community, of a different way of doing things, would emerge in and through the process of rejection and the pure reclamation of a space (p. 298).

The spatial occupation in the Occupy Wall Street phenomenon became more relevant than the initial motivation. The subjects identified with the space as they constructed it as a place, giving meaning to the interactions that were generated within it. The determination of that space on Wall Street developed a sense of personal identity for those who became inhabitants of the place, which caused the original motivation to begin to fade. A similar situation is presented by Aguilera (2016) when he collects stories from young Chilean students who participated in a school takeover during the 2006 protests. The occupation of space becomes more important to the subjects than their original motivation. In this instance, roles, affections, and symbols are formed according to the relationship that the group has in the occupied space. The young people even state that the experience makes them reconfigure their relationship with their environment, as spaces appear that were not previously categorized by them, such as the school kitchen or a tunnel that served as a refuge during the dictatorship and was used at that time to hide materials for the protests (Aguilera, 2016, p. 214). This experience becomes more meaningful for young people than their initial motivation, causing the mobilization to lose momentum over time.

This relationship between young people and space will be particularly relevant at a time when the virtual world is gaining momentum, as individuals turn to these virtual spaces in search of opportunities to make their expressions of identity and freedom visible, to develop and experience them, making these spaces meaningful.

Social media and the normalization of the virtual experience

According to Navarrete *et al.* (2017), social media is a concept used to "describe internet-based platforms for interacting with people who share interests, common goals, or similar contexts with users, or who are simply known" (p. 256). For Fernández *et al.* (2014), these platforms allow individuals to "build a public or semi-public profile within a limited system, articulate a list of other users with whom they share a connection, and view and exploit their list of connections and those made by other users

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within the system" (p. 12). In these definitions, and considering Lupano and Castro (2019), social networks are characterized as virtual platforms that allow interaction between individuals through profiles created with the idea of displaying only what they wish to present to the other individuals with whom they interact.

Van Dijck (2016) indicates that social networks are characteristic of Web 2.0 and, although they are offered as environments where users have control over the application, Morduchowicz (2018) and Pariser (2018) argue that they respond to particular interests, which means that they are not as neutral as they appear. Pariser (2018) asserts that social media is a business with owners and shareholders, and is sustained by the use and processing of information shared by users. In this way, they can create advertising tailored to each individual, thereby generating profits and creating efficient and personalized *marketing* campaigns. For example, Meta (2025), in its terms and conditions, explains its business model, acknowledging that all information provided by the user will be used to deliver everything that may be interesting. Probably the main appeal of social media lies in its ability to generate a sense of personalized belonging, as users have the freedom to shape the profiles and spaces offered by the platform, and in turn, the application rewards them with data that it assumes may be interesting to them, being appealing the experience of the immersion achieved through interaction with the virtual world.

Social media and contemporary youth

Tools such as the National Youth Survey conducted by INJUV (2022), the Digital X-Ray Report by CRITERIA (2023), and the study conducted by Tarullo (2020) on the motivations of young people to be on social media have established that most actions carried out by young people on the internet involve access to a social network, which, according to Morduchowicz (2018), leads them to consider social media as equivalent to the internet.

Young people see social media as spaces that allow interactions without the same community commitments required by relationships in the analog world. For Bauman and Leoncini (2018), social media allows individuals to present themselves with very few limitations, building profiles in which, according to Navarro (2019), they display all the characteristics they consider noteworthy and want others to know about.

Morduchowicz (2018) considers that social media initially behave as a private space, without adults, where they can fully exercise their

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autonomy and freedom, experiencing a power that allows them to shape their surroundings without opposition from others. This view is shared by Bauman and Leoncini (2018), who believe that young people can explore different applications and platforms, looking for those that best suit their needs, installing and uninstalling them without any commitment. They can also experiment with different identities, assuming virtually any characteristic as their own. Muñoz *et al.* (2020) argue that, in interactions on social media, young people can try out different standards of intimacy, something that is unlikely in interactions in the analog world. They can engage in actions protected by anonymity, without having to experience the tension of facing others face to face.

Morduchowicz (2018) and Pariser (2018) express the same concern about the experience with virtual space. The virtual world appears to be a free and autonomous space, attractive to young people seeking opportunities for development where they can break free from the constraints of the adult world. However, the reality is very different, as they are confronted with a virtual experience saturated with advertising and biased or false information. It cannot be ignored that social networks are private entities that thrive on advertising sales; there is no innocence on the internet, everything is mediated according to particular interests (Van Dijck, 2016; Pariser, 2018; Johnson, 2013). Pariser (2018) and Meta itself (2025) claim that these networks operate through algorithms that feed on the behavior of individuals on the web, processing information and proposing topics, news, and products that may be attractive to the user.

Young people are constantly seeking autonomy. For Bauman and Leoncini (2018), this search is transferred to the virtual world to shape a world more in line with their ideas and tastes. In this context, Morduchowicz (2018) believes that it is possible for individuals to find all the information they need to support their positions, regardless of its origin and veracity, making their point of view the only valid one, without the need to question or defend what they believe in. A social network that constantly provides information according to criteria determined by algorithms, according to Ponce (2016) and Vallejos *et al.* (2020), causes interactions on social networks to become a political and cultural ghetto, leaving aside one of the original objectives of the internet: the mainstreaming of democracy and intellectual discussion.

The permanent and immersive experience of social media means that, in the end, there is not an outside, as there is no contradiction in the statements made on the internet. On the contrary, according to Han (2019), it is in contradiction that we find the construction of the new,

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and according to Johnson (2013), diversity generates the growth of individuals. Thus, Morduchowicz (2018) considers that for young people who are forming themselves as social subjects, who belong to a community and who are defining their autonomy and identity, this can be extremely complex.

Social networks and young people in Chile

The first thing that appears in a search for research on the relationship between young people and social networks in Chile are studies that have directly questioned the relationship between youth, the internet, social networks, and ICTs, understanding that young people have a more naturalized relationship with these technologies than previous generations, even experiencing a continuous transition between the analog and the virtual. For example, Zarzuri (2014) develops the topic by assuming the use of social media as a means of communication, Palenzuela (2018) approaches the relationship as a technological means of organization, Cabello *et al.* (2017) question the practical use of technology, and Llorens *et al.* (2021) study the use of technology in schools. In all these works, social media is interpreted from its original conception as ICT, which in principle is not a problem, but which does not take into account the way in which today's young people develop their relationship with social media.

A specific example of this appears in the research by Salazar *et al.* (2021), which aims to explore the idea of *social media addiction among Chilean high school students*, taking into account different socioeconomic levels. The researchers used an instrument designed in 2014, which understands addiction as a situation that occurs during the practical use of virtual media. The results of the exercise indicated that young people do not show worrying levels of addiction, although connection times are high, which is one of the main factors indicating the presence of an addiction. The researchers indicate that they are unclear as to the reason for this situation.

Another contradiction can be observed in a study conducted by the University of Colima (Cuevas, 2020). This study addressed the construction of relationships around the use of virtual technologies and revealed contradictions such as young people considering that social media kept them away from others, but at the same time stating that they used it to interact.

In the application of the instruments in both studies, the questions focused on the utilitarian meaning that the subjects gave to their relation-

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ship with social media, leaving aside questions that referred to experiences, emotions, or feelings that could explain their behavior. This also appears in the research by Martínez *et al*. (2022), where social media is only understood as a means of exchanging information between followers of an artist, or in the research led by De los Reyes *et al.* (2021), where social media is understood as a tool through which violence and control can be exercised over a partner. In these cases, measurements are taken without questioning how the subjects experience the virtual experience.

A second strand of research on youth and social media delves into how young people engage in political protest and student mobilizations, presenting social media as the main means of organization used by young people during the student mobilizations that took place in Chile in 2006, 2011, and 2015. This line of research includes the work of Cabalin (2014), Ponce (2016), Pleyers (2018), and Aguilera (2016). In all of this research, social media is recognized as a relevant factor in the rise of student protests, reaching a consensus that social media is a technology used mainly by young people and that it played a primarily organizational and dissemination role. In these studies, they are understood as fundamental and foundational tools for youth organization, as they allow for interaction and information exchange with less mediation than traditional channels, in addition to being a medium that, at the time, was used almost exclusively by students.

In recent years, even before the pandemic, various studies have appeared that recognize that social media can be more than just ICT. For example, studies such as those by Gómez and Jiménez (2022) and Armijo (2024) understand the virtual as a context that can have consequences on the way youth identities are constructed, as it can influence and condition interactions between individuals. Social media is beginning to be seen as more than just a technological medium, and spatial categories are beginning to be attributed to it, which makes the way it is understood more complex. Another example of this is the research carried out by Del Prete and Rendon (2020) and Vallejos *et al.* (2020), where social media is understood as a spatial context in which interactions can be constructed, leaving behind the traditional idea that social media serves to facilitate communication and organization, and beginning to fulfill the role of a space in which citizenship can be exercised. The difference with previous research is that it understood social networks only as a means of communication or as a technology that facilitates interaction, disregarding the possibility of also influencing the construction of discourses and narratives of citizen identity.

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The other novel way in which current research has understood social media focuses on characterizing them as a spatial context in which skills and knowledge can be developed. This is the focus of research by Valdivia (2021), who argues that Instagram behaves as a space where young people are encouraged, through interaction with others, to learn how to create content to be displayed in that virtual space. In this case, the social network is presented as a context for sharing through the creation of audiovisual content.

This new approach to understanding the virtual world is also found in research that questions discrimination. An example is Del Prete and Rendon (2022), who present social networks not as tools for sending offensive messages, but as a context in which such actions can occur, behaving in a similar way to public spaces. In this way, social media becomes one of the conditioning factors in the act of violence, as a space that lacks the innocence of the instrument. This situation is being measured year after year by government and private organizations, which equate violence that occurs in virtual contexts with violence that occurs in the analog world, placing them on an equal footing in terms of their importance and impact on the development of society (Criteria, 2023).

It is relevant that these studies consider social media as a space and context, leaving aside the traditional idea of information and communication technology. This allows to have a more comprehensive understanding of social phenomena, with an emphasis on young people, as they can be considered the first original inhabitants of virtual spaces. Despite this, the idea that social media are tools continues to be present in much research, and work is still being carried out on this premise, where the research question continues to focus on how technology is used. This can be seen in research such as that of Bello and López (2022) and Coluccio and Muñoz (2021), where social networks are understood as tools that enable the development of leadership, or research such as that of Rodríguez *et al.* (2021) and Ibáñez (2024), which seek to understand the activities that subjects engage in when using social media, reducing the experience to sharing their own or third-party content.

It is understandable that the first studies to address the relationship between young people and social media understood that they were dealing with ICT, since that was the original purpose of social media and everything related to the internet. This is not a problem in itself, especially in older studies, but it becomes problematic when it is presented as the only valid approach to questioning this phenomenon. Today, it must be considered how young people experience social media, without reducing

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the question to the functional and utilitarian, since these new generations are developing part of their personal and social experiences in virtual spaces. It is possible that different research approaches on this topic can coexist in academia, and the way in which Chilean academia has addressed the phenomenon is a good example of this.

Conclusions

Considering the initial question of this study (how do young people relate to their social networks today?), it is possible to argue that the relationship between young people and their social networks is characterized by the distinction between ICT and virtual space. It is possible to argue that the relationship between young people and their social networks is characterized by the distinction between ICT and virtual space. While ICT is a tool with a practical, measurable meaning and whose value is considered in terms of its usefulness, a space is not reduced to its use. Although spaces may have a specific function, they can also be inhabited, which suspends their purely practical nature.

Inhabiting a space implies that individuals not only relate to it, shaping it, but also construct themselves while transforming that space. This distinction is therefore fundamental to understanding the world of young people, as it offers a perspective that has remained hidden in recent times. By shaping the spaces they occupy, young people also shape their expressions of identity, shaping their virtues, beliefs, and senses.

Considering the objective of this study, which is to present a theoretical proposal on which to base scientific research on the experience of inhabiting virtual spaces and its importance for understanding the world of young people, we propose a different view from the way academia has approached the relationship between young people and the internet and its platforms. It can be argued that this relationship is not reduced to a mere user experience, but is shaped by emotions and symbols. Therefore, the next step is to open to the possibility of using other research methodologies that allow for empirical verification of the ideas presented here. Exploring this relationship as a spatial relationship, opening to the possibility of understanding it from the concept of "inhabiting."

This paradigm shift could have significant consequences in various areas of the humanity and in initiatives aimed at young people. Considering social media as virtual spaces, with all their implications, should prompt a reconfiguration of strategies in the field of education and digital

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literacy. This is in line with the proposals of Gozálvez and Cortijo (2023) and Simbaña *et al.* (2025): to develop training opportunities that take into account that the use of a tool is not the same as accompanying young people in an experience that, although mediated by ICT, is still loaded with emotional and symbolic elements.

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Declaration on the use of artificial intelligence
José Rolando Alegría-Morán, **DECLARES** that the article entitled "The relationship between young people and social media in virtual spaces" was not created with the support of artificial intelligence (AI).

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Teachers' Perceptions of Otherness in the Age of Artificial Intelligence

Percepción del docente sobre la otredad en la era de la inteligencia artificial[1*]

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Abstract

Recognizing the "other" in their uniqueness through otherness is crucial to establishing meaningful social bonds, especially in teaching. However, the subject-subject relationship is fragmented when its development is not prioritized. In parallel, the rise of Artificial Intelligence (AI), which emulates certain human capacities, drastically reshapes global dynamics. The aim of this study is to assess, from the paradigms of higher education teachers in Mexico City, how they recognize otherness and its possible existence in AI. The research followed a quantitative, descriptive, and cross-sectional approach, with a purposive sample of 88 teachers. An *ad hoc* instrument was applied, showing adequate internal consistency (α = 0.83). Results revealed that teachers conceptualize otherness as the recognition of heterogeneity and develop it inclusively. Regarding AI, they highlight its potential to enhance human capabilities, although most are not trained in its use. They consider it a social duty to use AI ethically and responsibly but do not attribute otherness to it due to its lack of emotions, self-motivation, and consciousness. The conclusion is that teachers need multidimensional literacy on AI. This technology blurs boundaries and redefines roles between the subject (humanism) and the object (materialism). From the perspective of posthuman nomadism, otherness may be understood in the future—with the development of General or Super AI—as organic, artificial, or hybrid.

Keywords

Artificial Intelligence, Otherness, Alterity, Teachers, Education, Society.

Resumen

Reconocer al "otro" en su unicidad desde la otredad es crucial para establecer vínculos sociales significativos, especialmente en la labor docente. No obstante, la relación sujeto-sujeto se fragmenta cuando no se prioriza su desarrollo. En paralelo, la irrupción de la inteligencia artificial (IA), que emula capacidades humanas, reconfigura drásticamente las dinámicas globales. El objetivo de investigación fue valorar, desde los paradigmas de docentes de educación superior en la Ciudad de México, cómo reconocen la otredad y su posible existencia en la IA. La investigación es cuantitativa, descriptiva y transeccional, con un muestreo intencional de 88 docentes. Se aplicó un instrumento *ad hoc* con adecuada consistencia interna (α = 0,83). Los resultados revelaron que los docentes conceptualizan la otredad como reconocimiento de la heterogeneidad y la desarrollan de forma incluyente. Sobre la IA, destacan su uso para potenciar capacidades humanas, aunque la mayoría no está capacitada en ello. Consideran un deber social emplearla ética y responsablemente, pero no le atribuyen otredad por carecer de emociones, automotivación y conciencia. Se concluye que el profesorado necesita alfabetización multidimensional sobre la IA. Esta tecnología desdibuja fronteras y redefine los roles entre sujeto (humanismo) y objeto (materialismo). Desde el nomadismo posthumano, la otredad podría entenderse, en un futuro con "IA general" o "super IA", como orgánica, artificial o híbrida.

Palabras clave

Inteligencia artificial, otredad, alteridad, docentes, educación, sociedad.

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Introduction

Currently, the rapid advancement of digital technologies, particularly artificial intelligence (AI), poses unprecedented challenges for understanding human relationships, otherness, and the construction of subjectivities. In this context, there is a need to analyze how teachers, as mediators of knowledge and key social agents, conceptualize otherness and perceive its possible existence in artificial entities.

To this end, the objective of this study is to assess, based on teachers' paradigms and professional experience, how they recognize otherness in human relationships and whether they identify its possible projection in AI, thus exploring present and future dynamics in an increasingly digitalized world.

The problem addressed by the research lies in the lack of deep understanding of teachers' perceptions of otherness in environments mediated by emerging technologies, especially considering that AI redefines the structures of interaction, knowledge, and subjectivity.

The hypothesis guiding the study argues that, although teachers recognize otherness as an essential part of their human and educational practices, there is a critical perception regarding the possibility that AI possesses genuine characteristics of human otherness. The importance of the topic lies in the fact that understanding these paradigms is crucial for designing educational, ethical, and social strategies that promote a critical and humanistic integration of AI, without losing sight of the centrality of human beings and diversity in educational communities. The topic is highly topical, given the exponential growth of AI applications in educational, social, and professional fields, as well as contemporary debates on ethics, responsibility, and human-technological coexistence that are intensifying in the post-pandemic and global digital transformation scenarios.

Methodologically, the study adopts a quantitative descriptive-transectional approach, with a non-experimental design, analyzing teachers' perceptions using a validated instrument that groups responses by thematic dimensions and age ranges to capture generational nuances.

Historical and communicative trajectory of otherness

History documents the multiple relationships that interconnect human beings; amid this complexity emerges the concept of "the other," a topic studied by various disciplines whose object of study is otherness. This has been perceived from different contexts and historical moments. The term

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"otherness" comes from cultural anthropology, where "the other" is placed within a historical-social framework. Guglielmi (2006) argues that due to the diversity of theoretical currents and their evolution over time, it is difficult to establish a single definition of the concept.

There are three key historical moments that influence the conception of otherness. The first, at the end of the 19th century, characterizes the "other" in terms of economic relations in two fields of knowledge: the social—as a discipline of the cultural "us"—and the anthropological-cultural—as a discipline of the colonial "others," hence "others" are differentiated, both geographically and culturally, from the hegemonic countries (Alegre & Guglielmi, 2007)—with an emphasis on being.

The second moment is between the First and Second World Wars, when the paradigm of functionalist anthropology emerged, which focuses its study on the resolution of social needs through culture. According to Campos (2019), culture responds to the substantive needs of diverse groups, understood under their own paradigms; in this context, the "other" is seen as someone different from oneself, diverse, multiple, and complex.

The third period, after World War II, is characterized by the convergence of cultures and societies, allowing sociology and anthropology to share the same object of study. At this stage, the "other" is conceived as a product of different economic, cultural, and scientific inequalities that intersect with social representations determined by the construction of affective meaning. Likewise, Salvatore *et al.* (2020) indicate that the greater the exposure to otherness, the more similar the semantic structures manifested historically between distant cultures tend to be, giving rise to a multifaceted approach to otherness.

In line with this historical evolution, otherness can also be understood from the perspective of communication and language. According to Garrido Vergara (2011), in his review of Habermas' "theory of communicative action," the "world of life" is composed of culture, society, and personality, categories that influence the actions of individuals and their individual identity.

A historical overview of sociology allows to identify four types of actions: strategic action, oriented toward conscious ends; action regulated by shared social norms; dramaturgical action, which reflects individual subjectivity; and communicative action, based on linguistic interaction between subjects capable of influencing each other's actions. The latter action, fundamental to rational understanding, involves claims to validity that are subject to criticism and manifested through symbolic expressions. According to Solares (2015), these manifestations can be classified

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into pragmatic elements of a locutionary nature (expression of the message), illocutionary (expression to be understood), and perlocutionary (influence on the interlocutor).

From these concepts, it can be said that otherness has an intrinsic relationship with communication: it is linked both to the purpose of transmitting meanings and to the possibility of building consensus, understanding, and recognition of cultural and linguistic differences. In this sense, Ucok Sayrak (2016) indicates that "absolute otherness has significant communicative implications in terms of the relationship between the self and the other and the construction of meaning of difference and identity in intercultural communication" (p. 126).

Otherness as the foundation of inclusion

Otherness has been placed in the anthropological and social field as a fundamental concept for understanding cultural relations and the differences between individuals and groups. From a historical perspective, its study has made it possible to articulate social links in contexts of diversity. Community psychology is key to understanding these dynamics of social integration. Based on principles of social justice, it recognizes two essential dimensions: the *episteme* of relationship and the *episteme* of otherness. These concepts, emerging from the "philosophy of liberation," reinforce the need to overcome selfishness and individuality to build more inclusive communities.

The *episteme* of relationship represents the beginning of the approach towards the other, towards the unthought, the unknown, and the different, promoting acceptance within a community that respects the ideas and knowledge of all its members. For its part, the *episteme* of otherness, according to Montero (2015), recognizes the dynamics of social representations, admitting both recognition and possible rejection, but insisting on inclusion as a product of the historical character of the community.

Thus, education emerges as a privileged space for fostering respect for diversity. Delors (1996) identifies four pillars of education geared toward the comprehensive development of human beings: learning to know, learning to do, learning to live together, and learning to be. In particular, the third pillar is fundamental in a world marked by violence and the self-destruction of humanity and the planet, inviting us to build a culture of peace through mutual knowledge and intercultural understanding. Education, in this sense, faces the challenge of teaching empathy in

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its various forms (cognitive, emotional, and supportive) to facilitate the recognition of the "other" as an equal.

Otherness and technology in the age of AI and Society 5.0

The concept of otherness takes on new nuances in the context of Society 5.0, initially proposed by Japan to harness technological innovations for the benefit of humanity. This vision, in line with Ortega (2019) and Mourtzis *et al.* (2022), places people at the center of technological and social revolutions, surpassing the previous conception of Industry 4.0. In Society 5.0, characterized by the integration of AI, IoT, robotics, and *big data,* the interaction between individuals and cyberspace is redefined, promoting a new social contract based on intercultural cooperation and the acceptance of diversity in the digital age (Corral, 2020).

This Society 5.0 has a connection with Education 5.0, because it also proposes to focus on humans for comprehensive development in a sustainable world that integrates individuals and groups. It aims to promote the development of social and emotional skills, critical thinking, problem solving, and digital literacy (to develop digital citizenship), among other things. Vieira *et al.* (2023) indicate that the juxtaposition of Society 5.0 and Education 5.0, from a critical perspective, deserves the attention of the scientific community, governments, and other stakeholders.

This transformation has a natural link with education 5.0, which also focuses on the holistic development of human beings in a sustainable world. It emphasizes the need to strengthen social-emotional skills and critical thinking. However, researchers such as Vieira *et al.* (2023) argue that it is also necessary to develop digital literacy and digital citizenship. In this context, teachers play a new essential role as facilitators, mediators, and generators of dynamic teaching-learning environments, fostering the ecology of knowledge. This offers an opening toward overcoming the subject-object distinction in favor of more dialogical relationships (Arce Rojas, 2020; Hespanhol, 2023).

Among emerging technologies, AI—in its artificial neural network and generative AI forms—occupies an essential place in education. These tools, capable of assisting in content generation, personalizing learning, and fostering co-creation, also pose new challenges regarding the perception of otherness. Recent epistemological and scientific contributions by García Peñalvo *et al.* (2024) suggest that the interaction between biological and artificial neural networks could influence individuals' identity

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and self-perception. This scenario opens virtually unexplored ground regarding how to recognize (or not) the "other" in technological entities, a crucial debate in the context of education and future coexistence.

Problem, justification, and structure

The constant evolution of the world and classrooms has historically shaped an essential relationship between individuals. However, in the current context, this connection appears diffuse and fragmented. In this sense, Apolinar López (2016) asserts that this is due to a lack of knowledge and practices that allow teachers, from a humanistic and dialogical perspective, to interpret and assertively recognize the "other." This situation can undermine coexistence, encourage discrimination, reinforce stereotypes, and consolidate social asymmetries, which would be a reflection of deeply rooted cognitive prototypes (Jarymowicz *et al.*, 2016).

In addition, teachers face a reality in which they must interact and coexist on a daily basis not only with other human beings, but also with technological entities such as AI, establishing new forms of subject-object relationships. Various studies (Aljemely, 2024; Dan, 2022; Salas Pilco *et al.*, 2022) reveal that many teachers express resistance, ignorance, or empirical use of AI and lack the skills to implement it, both in the classroom and in their personal lives.

These authors also highlight that there is still a gap in studies exploring whether teachers recognize AI as an emerging form of otherness. This gap raises fundamental questions from an interdisciplinary and humanistic perspective: Are teachers fully aware of what otherness is and do they promote it inside and outside the classroom? Do they know and use AI in an informed way? Do they conceive AI beyond materialistic functionalism, recognizing possible emotional ties to this technology? Are they able to identify AI as a form of "other"?

To address these issues, an analytical framework was designed that organizes this study into four main dimensions:

- Conceptual reflections
- Academic environment
- Artificial intelligence
- Generic artificial intelligence

We also considered segmenting participants by age range in order to identify possible generational differences in the perception of other-

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ness and AI. This dual perspective provides a comprehensive framework for a more nuanced understanding of teachers' responses.

Methodological aspects

Type of study and sampling

This study takes a quantitative approach, with a descriptive, cross-sectional, and non-experimental design. This methodological choice allows to study teachers' perceptions of otherness and AI through the analysis of structured data. The design is based on the principles of the scientific method (Yucra & Bernedo, 2020) to generate applicable and verifiable knowledge suitable for complex social phenomena.

Participants were selected through purposive sampling, which is appropriate for studies that require information from specific actors, based on their proximity to the object of study. This type of non-probability sampling is based on choosing, through non-random methods, people who share relevant characteristics with the target population of the study, prioritizing access and availability (Arias Gómez *et al.*, 2016). It is especially useful when exploring a phenomenon in limited contexts or when no previously established sampling frame is available.

The sample consisted of 88 higher education teachers from Mexico City. Of these, 86 (97.7%) were women and two (2.3%) were men; 63 (71.6%) worked in private institutions and 25 (28.4%) in public institutions. In terms of academic level, 68 (77.3%) had a bachelor's degree, 4 (4.5%) had a master's degree or specialty, 15 (17%) had a master's degree, and 1 (1%) had a doctorate. Regarding teaching experience, 45 (51.1%) had between 1 and 5 years of service, 23 (26.1%) between 6 and 10 years, 7 (8%) between 11 and 15 years, 6 (6.8%) between 16 and 20 years, 2 (2.3%) between 21 and 25 years, and 5 (5.7%) had more than 25 years of service.

Finally, to contrast the results based on the age variable, the sample was segmented into the following ranges: 33 (37.5%) were between 21 and 30 years old, 31 (35.2%) were between 31 and 40 years old, 15 (17%) were between 41 and 50 years old, 4 (4.5%) were between 51 and 60 years old, and 5 (5.7%) were over 60 years old.

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Dimensions of analysis

In a study with social nuances, it is important to recognize the object of study from a rhizomatic perspective (Deleuze & Guattari, 2004; Marmo *et al*., 2022), reason for which it was broken down into a dimensional structure. These dimensions were defined based on the research intention and aimed at specifying the appropriate statistical models for interpreting the observations (Creswell & Creswell, 2019):

- *Conceptual reflections*. This addresses the perception, interpretation, and conceptualization of the relationship and differentiation between teachers and their fellow human beings in general (not exclusively teacher-teacher) based on otherness. It focuses on the recognition of individuality, identity, ethical and moral values, and human subjectivities. According to Foucault (1988), "the subject is found in relations of production and signification [...] and immersed in very complex power relations" (p. 3).
- *Academic environment*. According to Carayannis and Morawska (2022), it is relevant to explore how subjects construct and project human and technological relationships within educational, articulating social values from a dialogical logic and framed within the principles of society and education 5.0.
- *Artificial intelligence*. Lee (2023) indicates the restrain of examining teaching paradigms regarding the presence of AI in their personal and professional lives. It is also relevant to recognize their level of preparation to integrate it ethically and effectively. These preliminary elements aim to help understand how AI can reinforce and challenge social dynamics.
- *Generic artificial intelligence*. Investigate teachers' perceptions of the artificial neural capabilities of AI. Some authors (Chen *et al*., 2022; Hassabis *et al*., 2017; Macpherson *et al*., 2021) highlight the potential of this technology to simulate human attributes such as emotions, creativity, and decision-making. Some research (Samsonovich, 2020) also emphasizes the importance of investigating the use of AI based on ethical, moral, and axiological principles and, in turn, whether there is versatility in its cognitive capacity to address abstract, creative, and conscious aspects, with the intention of understanding its limits and potential, as well as its artificial approximation to cognitive neurobiological processes that provide new experiences between humans and machines.

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Data collection instrument

An *ad hoc* instrument was designed to obtain valid and reliable information, based on closed items with a Likert scale (1 = strongly disagree to 5 = strongly agree). This scale is recognized for its accuracy in measuring attitudes and opinions (Jebb & Tay, 2021). The questionnaire was constructed taking into account the researchers' theoretical and practical integration with regard to the object of study, which allowed for a multidimensional structuring of the items in accordance with the defined analytical dimensions.

Content validity was ensured through review by experts in AI applied to education, as well as by specialists in otherness in educational contexts. The clarity, relevance, and consistency of the items with the proposed dimensions were evaluated. Subsequently, a pilot test was administered to teachers with experience in the use of AI and familiar with the topic of otherness, which allowed the instrument to be refined based on their comments. The final instrument included 40 questions distributed across the four dimensions:

Table 1
Dimensions of analysis and examples of items used

Dimensions	Description	Instrument items
1. Conceptual reflections	Perceptions of otherness, identity, subjectivity and ethical and social relationships.	1. Can you conceptualize in detail what otherness is? 2. Can the following quote represent otherness? "The Other does not exist in itself. The Other only exists as Other for someone. The Other is first and foremost the Other for itself. The Other is nothing but the Other as Other for Another." 3. Can otherness be subject to hierarchies and power relations? 4. In your daily life, do you always consider "the other" in your critical thinking, decision-making, and actions? 5. Do you believe that not recognizing "the other" can dehumanize individuals? 6. Do you practice inclusive otherness? 7. Do you practice an exclusive otherness? 8. Is otherness a social construct? 9. Is otherness linked to the creation of prejudices and stereotypes? 10. Does otherness highlight the diversity of society?
2. Academic environment	Application of otherness in education and institutional relations.	11. In your professional work, do you always consider "the other" in your critical thinking, decision-making, and actions? 12. Do you educate your students based on otherness? 13. Do you encourage your students to recognize "the other"? 14. Do you promote the inclusion of otherness in your school projects? 15. Does your students' nuclear family recognize otherness? 16. Do your students recognize "the other" from a perspective of otherness? 17. Are positive behaviors based on humanism modeled in your school? 18. Do you work collaboratively with your fellow teachers on otherness in inter/transdisciplinary activities?

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		19. Is otherness promoted among all stakeholders in your educational institution? 20. Do all of your students' families encourage them to recognize "the other" inside and outside the home?
3. Artificial intelligence	Presence of AI in personal and professional life, skills and attitudes towards its use.	21. Is AI present in your daily life and are you aware of it? 22. Do you have a sufficient foundation to explain how AI works? 23. Are you trained to use AI? 24. Do you have the essential skills to adapt AI in your personal and professional life? 25. Will AI regulation enhance human activities? 26. Will AI generate more complex human interaction systems? 27. Could constant interaction with AI reflect a new way of seeing the world? 28. Is managing AI a social duty and responsibility? 29. Will AI in the future distance us from the "other" (human)? 30. Will it be possible to live in harmony between AI and humans?
4. Generic artificial intelligence	Cognitive, emotional, and ethical capabilities and ethical attributed to AI; reflection on its potential otherness.	31. Are AIs, with their network of artificial neural networks, comparable to the human brain? 32. Can AI solve complex tasks related to the social sciences in a similar way to humans? 33. Can AI develop otherness like humans? 34. Is learning from mistakes to improve decision-making characteristic of AI? 35. Is it a characteristic of AI to prioritize information it receives from its environment for human needs? 36. Can AI act based on ethics, morals, and axiological principles recognized by humans? 37. Is there versatility in AI's cognitive capacity for abstract and creative thinking? 38. Is AI self-motivated to perform tasks and activities? 39. Can AI feel emotions such as love, sadness, anger, fear, shame, joy, etc.? 40. Can AI recognize the characteristics, similarities, and differences of individuals if it receives specific information?

Data processing, statistical analysis, and validation of the instrument

The information was processed using the statistical program SPSS V.25. The reliability of the instrument was evaluated using Cronbach's alpha and had a value of 0.83; in this regard, DeVellis and Thorpe (2021) and Taber (2017) indicate that this type of value is optimal. Normality tests indicated a non-parametric distribution; therefore, Kruskal-Wallis and Pearson's chi-square statistics were applied and indicated no significance ($p > .05$) between the groups according to the different age ranges.

"Conceptual reflections" dimension

Regarding this first dimension, teachers, regardless of their age, showed a general tendency to conceptualize otherness, expressing agreement or total agreement (question 1). This finding is relevant for the formation of dialogic

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and pedagogical links in the classroom (Vargas Manrique, 2016), although it should be recognized that positive self-perceptions of one's own intercultural competence are common in self-assessments and may be biased.

When reflecting on the philosophical quote inspired by Jean-Paul Sartre and Emmanuel Lévinas (question 2), they also showed consensus that it adequately represents otherness. This result supports Salas Astrain (2012) and confirms that certain principles of contemporary phenomenology are present in their interpretative frameworks, although it does not allow us to infer a deep critical appropriation without complementary evaluations.

They expressed total agreement that otherness is a social construct (question 8). This approach, in line with the ideology of Cartagena (2021), emerges from historical, cultural, and political dynamics, which serve as essential markers such as social class, race, or gender and are not necessarily inherent to human beings, but rather to the constant collective representation that is reproduced through generations.

Regarding question 10, teachers acknowledged that otherness highlights social heterogeneity, which supports decolonial perspectives. Emiliozzi (2020) emphasizes the importance of conceiving diversity as a fundamental axis of social logic. Hence, otherness, viewed from the perspective of heterogeneity, heralds a shift in the system towards human rights from a decolonial root of *the vox populi.*

Regarding the constant consideration of the "other" in everyday life (question 4), most of the responses were positive in that teachers keep other individuals in mind in their paradigms, reflections, and decision-making. In this sense, Torres León (2023) says:

> To understand the notion of inclusion more deeply, it is also necessary to know the other that is to be included. Inclusion is not only a notion seen in practices; it is the product of social relations and their articulation with other social phenomena (p. 19).

On the development of inclusive otherness (question 6), most respondents indicated that they agreed or strongly agreed. It should be noted that developing this type of otherness promotes recognition of the "other" in their uniqueness and diversity, establishing an ethical responsibility that transcends differences with the "other" because it seeks to integrate them as a fundamental part of the human.

This form of otherness promotes acceptance of the uniqueness of the other and places the subject as jointly responsible for an ethical relationship that transcends simple coexistence. As some researchers have

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proposed (Orrego & Jaramillo, 2019), recognizing the other in their otherness implies setting aside one's own preconceptions and opening oneself up to curiosity, contemplation, and hospitality, assuming an unconditional ethical commitment. Achieving this form of relationship involves a process of personal transformation that entails distancing oneself from fixed moral frameworks and opening oneself to uncertainty.

In contrast, teachers disagreed or strongly disagreed with the statement about developing an exclusionary otherness (question 7). This finding is encouraging, as it suggests an openness to recognizing the subject from the perspective of otherness. It has been noted that when otherness is constructed from exclusion (Montero, 2015), there is a risk of turning the other into an object, denying their dignity and humanity. As the literature points out, this exclusion can lead to the symbolic or real elimination of the other by not being conceived as equal in rights and dignity.

Failing to visualize or recognize the "other" can dehumanize human beings; they were in complete agreement with this idea (question 5). It is essential that individuals be aware of the risks of denying otherness in social contexts (Haslam & Loughnan, 2014; Simon & Gutsell, 2021). Failure to recognize or creating a distance between human beings can objectify them and damage the subject-subject relationship.

Finally, in the perception of otherness linked to hierarchies and power relations (question 3) and the creation of prejudices and stereotypes (question 9), responses of agreement or indecision were observed. This picture reveals a partial understanding of the structural component of power in the construction of otherness. Stereotypes, as reductionist representations, can hinder an authentic interpretation of the other and generate social inequalities, which hinder the construction of egalitarian relationships (Romero *et al.*, 2020; Fedor, 2014).

The findings of this first dimension reflect positive perceptions of the concept of otherness, although these are qualified by the inherent limitations of the methodology used and the self-assessment nature of the responses.

"Academic environment" dimension

In the second dimension evaluated, trends were identified that reflect how teachers integrate otherness into their professional practice. The results show that, in general, participants consider the "other" in their critical thinking, decision-making, and behavior (question 11) from their professional role. Furthermore, they do so especially in the older age groups.

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This finding suggests a greater internalization of otherness as teaching experience progresses. From a neurocognitive perspective, critical thinking (Kuhn, 2019) is a higher executive function associated with the prefrontal cortex, enabling metareflection and self-regulation. This evidence undoubtedly reflects something that is transcendental in human interactions.

As for the education of their students, teachers agreed that they should be taught about the foundations of otherness (question 12) and encouraged to recognize the "other" (question 13). In this way, the perspective on the perception of the world is broadened by dialoguing, understanding, and transforming diverse realities with a sense of justice, solidarity, and being seen by the other, by others. The aforementioned approach (Karmos & Jacko, 1977; Salvatore *et al.*, 2020) goes beyond the simplistic view of merely transmitting curricular content in the classroom, because it contributes to the construction of critical and supportive subjectivities, which are fundamental for the consolidation of democratic societies.

Regarding students' perceptions, teachers mostly agreed that their students recognize the "other" from a perspective of otherness (question 16). This idea reveals the complexity of the process of internalizing the visualization of classmates as individuals with similarities and differences between them, which does not depend solely on teaching, but also on broader sociocultural factors. Extending this idea, Bolaños (2010) indicates that there are:

> Philosophical anthropological categories, such as that of the "between" (*zwischen*) of the intersubjective relationship, which constitutes a clear invitation to deepen the implications of interhuman encounters that go beyond the vanity, mistrust, and superficiality that often characterize human relationships. These constitute solid theoretical foundations for establishing relationships of dialogical otherness that may offer new possibilities for improving relations between human beings (p. 28).

Regarding the influence of the students' families, although they recognize progress in the recognition of otherness (question 15), there remains some uncertainty as to whether this is consistently promoted inside and outside the home (question 20). All of this is highly relevant in the contemporary context, as families should constitute practices of intimacy in which affinities favor the development of principles of openness and reciprocity, along with bonds that reinforce the social responsibility of recognizing the "other" in more flexible and humane dynamics. In contrast, there are often entrenched family practices that continue to accentuate interpersonal ties that project social asymmetries (Gabb, 2011), through differences in gender, roles, activities, abilities, etc., which do not lead to an environment of otherness.

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There is philosophical evidence (Mhurchú, 2019) that reports that navigating between belonging and otherness in building a home sustains the intertwining of the lives of individuals who project an alternative logic that emphasizes interconnection and co-constitution where the "one" prioritizes the "other." All of this reflects the tensions between traditional models and more flexible and pluralistic approaches to family socialization.

Regarding the work environment, most teachers stated that their school shapes positive behaviors based on humanism (question 17), although they expressed doubts about whether the promotion of otherness is systemic among all educational actors (question 19). The previous idea (González Muñiz, 2007; Vargas Manrique, 2016) suggests that although there are individual or group initiatives to promote the philosophical current of humanism, there is a need to consolidate a comprehensive inclusive institutional culture so that substantive elements for human beings can be developed, such as values, freedom, recognition of the individual as an end in itself, and ethical and emotional growth, among others.

As for interdisciplinary work, teachers agreed to work collaboratively with their peers on otherness in interdisciplinary and transdisciplinary tasks (question 18) and strongly agreed that school projects should be permeated with otherness (question 14). This is consistent with pedagogical approaches that promote diversity of perspectives and the construction of shared meanings as pillars of transformative education. However, for this type of dynamic to be effective and efficient (Reich & Reich, 2006), each subject must recognize the identity and cultural differences of the other when establishing a multidirectional, flexible, and humane line of communication. Likewise, this type of school dynamic (Miranda & Daturi, 2021) tends to develop through collaborative work between individuals or groups, favoring the development of empathy and the recognition of the "other" as an intentional subject who contributes and constructs.

Overall, the results of this dimension show that teachers are mostly committed to the values of otherness in their educational practices, although there are still areas of tension and opportunities for improvement, especially regarding the consolidation of institutional environments that systematically promote the recognition of the "other."

"Artificial intelligence" dimension

Most participants stated that they were aware of the presence of AI in their daily lives (question 21). This perception reflects the growing footprint of

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AI in human contexts. It should be noted that Pichardo *et al.* (2024) and Lee (2020) argue that AI is no longer just a functional tool for a specialized technical sector, but is now part of an epistemic framework that transforms social interactions and access to knowledge from multiple views.

However, widespread indecision was detected regarding technical and operational knowledge of how AI works (question 22). To this end, it is assumed that it is not easy for teachers (like many individuals in global society) to grasp the technical and functional elements of the technological nature of AI. This gap (Echavarría Arcila, 2023) reflects the distance between intuitive use and deep understanding of the fundamentals of this technology, a common phenomenon in today's society.

Regarding specific training in the use of AI (question 23), the majority stated that they had not received any training in this area. This lack of training may limit critical thinking and meaningful appropriation of AI in educational contexts (Guamán Inga *et al.*, 2023; Celik *et al.*, 2022), because the development of digital competencies, which includes both technical and reflective skills, is essential for effectively integrating this technology into teaching. The findings of the research by Cárdenas and Suárez (2024) and Harris Bonet *et al.* (2022) affirm that not receiving training in this area puts one of the key pieces of the classroom at risk, because it limits autonomy and projects an uncritical stance toward addressing the renewed social structure that converges with AI.

It is important to note that becoming literate and trained in the use of AI is not exclusively about improving technical skills in software management (through platforms, applications, and digital tools), but rather about developing a critical understanding of the social mechanics of the new horizons of digital citizenship, in order to enable individuals to question the structures of power and meaning that technologies represent, thereby dignifying human existence for the collective good.

Despite this lack of training, several groups reported feeling competent to adapt AI in both their personal and professional lives (question 24), reflecting a possible dissonance between perception and reality, where intuitive familiarity could be confused with ethical and effective mastery.

Developing digital skills in AI involves positioning oneself at a point between the human and the technological in an act of self-construction, in a world partially mediated by technology that reconstitutes human meaning and the work of teaching.

Following Cárdenas and Suárez (2024), it is understood that digital skills are key for teachers to move forward with emerging technologies and adapt to new educational contexts.

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Regarding ethical commitment, there was broad consensus that the use of AI should be a social duty (question 28). This recognition makes sense when assuming that this digital technology impacts the social aspect in different areas of everyday life and recodes the purpose of human beings. Because of this, an ethical commitment must be demanded for the use of and connection between the subject and AI, because:

> A world driven by Artificial Intelligence involves more than science, technology, engineering, and mathematics. As computers behave more like humans, the social sciences and humanities will become even more important [...]. If Artificial Intelligence is to reach its potential to serve humans, then every engineer will have to learn more about the social sciences, and every social science specialization will need to learn more about engineering (Porcelli, 2020, p. 58).

On the regulation of AI, most respondents believed that AI will enhance human activities (question 25); this view is shared by advocates of this new synthesis, who seek a critical and responsible integration of these technologies. In this sense (Shneiderman, 2022), those responsible for education will integrate interdisciplinary skills to design new learning scenarios, a vision that will expand human responsibilities and social ties.

Some participants agreed that continuous interaction with AI will project a new way of seeing the world (question 27). Younger teachers were more likely to perceive a transformation in the way of seeing the world, while older teachers were more indecisive.

Based on the latter, a dialogue can be extended with the postulates of Tolentino Sanjuan (2024), who suggests that there is a generational gap in the critical appropriation of the paradigm shifts driven by AI.

Regarding the risk that AI will drive humans apart (question 29), responses ranged from agreement to indecision. There is still no consensus in the academic literature that clarifies this perception; however, in everyday life, a threshold between the metaxial and the liminal is developing between humans and AI. Narváez (2024) recognizes that coexistence with algorithmic entities poses unprecedented challenges for social interaction.

Regarding the complexity of human interaction due to AI (question 26), the prevailing perception was that it will not necessarily become more complex, which contrasts with positions that warn of the growing delegation of human functions to automatic systems. Specifically, there are references (Wu, 2019) that defend the idea that human interaction becomes radically more complex with the presence of AI.

Following this line of thinking, teachers—and humans in general—will be able to delegate certain tasks and decision-making to artificial al-

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gorithms, which traditionally depended exclusively on human capabilities, knowledge, and subjectivity. This calls into question the preservation of the logic, dialogue, and sensitivity that humans experience with this technology.

Finally, on the possibility of harmonious coexistence between humans and AI systems (question 30), most expressed agreement, albeit with generational nuances. The specialized literature (Liu *et al.*, 2022) emphasizes the need to establish solid ethical foundations for beneficial coexistence between the subject and the object. These foundations must preserve a balance because it is importat to consider that, in a relative complementary symbiosis, each party contributes from its essence and purpose, without one reducing the other or displacing its uniqueness.

"Generic artificial intelligence" dimension

In this last dimension, teachers' perceptions of the comparability between AI and human capabilities were analyzed, also by age range.

First, it was observed that teachers tended to agree that artificial neural networks are comparable to human biological neural networks (question 31). This perception coincides with the initial intention of AI design (Pham *et al.,* 2023; Shao & Shein, 2023), which is inspired by the architecture and functionality of the human brain. However, it should be emphasized that artificial neural networks (Fjelland, 2020; Zohuri, 2023), although they replicate learning processes and follow certain patterns, are limited in comparison to human biological and experiential complexity.

Regarding the possibility that AI could perform complex tasks in social sciences as a human would (question 32), teachers expressed widespread disagreement. This result reflects a critical understanding of the current limitations of AI in areas that require deep contextual interpretation, emotionality, and ethical judgment, despite advances in multidisciplinary applications. There is also a critical stance (Cambria *et al.*, 2023; Ligo *et al.*, 2021) that emphasizes a relative gap in research and evidence addressing the impact of AI on disciplines such as sociology, anthropology, history, social psychology, etc.

Regarding AI's ability to recognize human characteristics, similarities, and differences (question 40), the results showed majority agreement, although this was tempered by indecision among some age groups. This technical recognition (Fokas, 2023; Tan *et al.*, 2021) does not imply a genuine understanding of human beings, given that AI lacks subjectivity, intuition, and cultural awareness.

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AI is currently limited to the training provided by the subject (through *prompt* engineering: commands given to an AI model to obtain relevant and appropriate responses). Narrow AI is limited by its lack of subjectivity, experience, values, emotions, and principles, which are fundamental elements of the human condition.

Teachers also agreed on AI's ability to efficiently prioritize information in order to meet human needs and requirements (question 35). In other words, although most of them were not literate in the use of AI, they have a good perception of what artificial learning models can technically develop. It is noteworthy that AI works with multilayer neural networks to organize and distribute information in complex systems. As Villegas Sánchez (2024) points out:

> Artificial neural networks are a model that takes the functioning of the nervous system as an example, allowing us to generate artificial neural networks with the ability to learn hierarchical knowledge, with applications in text, audio, and image recognition, similar to how a biological organism would do (p. 6).

However, they showed indecision regarding AI's ability to learn from error (question 34), which reveals a partial understanding of this technology's ability to learn through reinforcement and backpropagation. Steyvers and Kumar (2023) understand that these are fundamental processes in the adjustment of neural networks. Knowing how this technology improves its ability to learn through reinforcement (algorithms that learn through trial and error) goes beyond common understanding, as it inhabits a field that is highly technical and specialized.

Regarding the cognitive capacity of AI on abstract and creative tasks (question 37), indecision or disagreement prevailed, reflecting the complexity of this debate. Although AI has demonstrated capabilities to produce novel and complex content (Atkinson and Barker, 2023; Mitchell, 2023), it still differs radically from human potential because it lacks intuition, life experiences, and intrinsic motivations.

The abstraction and creativity of AI differ from human biological subjects due to the absence of experiential richness, multisensory perception, self-regulatory and internal systems (evaluation of effectiveness, importance, emotions, and motivation), and neurocognitive functions that transcend the self (through higher cognitive gears such as conceptualization, planning, and reasoning from complexity).

Broadly speaking, according to Veale *et al*. (2019), technological advances have not demonstrated that AI has cognitive versatility compa-

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rable to that of humans in interpreting and expressing the complexity of both the creative and the abstract.

There was clear disagreement on the self-motivation of AI to perform tasks or activities (question 38). This is also reflected in the scientific literature (Harvey, 2024; Ryan & Deci, 2017), which states that AI acts under human guidelines and lacks free will. Although models of limited artificial motivation are being explored (Baldassarre & Mirolli, 2013; Pessoa, 2019), there is no evidence of self-motivation comparable to that of humans.

The difference between self-motivation lies in the fact that the subject (human being) is a reflective, creative agent aware of a purpose that creates meaning and identity; from another perspective, the object (AI) is a reactive tool with capabilities governed by complex mathematical structures.

Likewise, teachers denied the possibility that AI can act ethically in an autonomous way (question 36), reaffirming that its "ethics" depend on its programming and human regulation. AI alone lacks intrinsic ethical meaning and morality; its ethical operability (which is only viable if it is programmed to do so) reflects values based on justice, equity, security, and respect, which, to a certain extent (UNESCO, 2021; Aparicio and Cortés, 2024), is regulated by national and international bodies through appropriate policies.

The rules governing the use of AI (Gallent *et al.*, 2024) must be constantly monitored to protect users under ethical guidelines and thus provide fairness and transparency. Another perspective on AI ethics lies in its use by humans, as conscious moral agents; responsibility for its management must be consistent with axiological and ethical attributes and universal principles. AI, not being a conscious entity with full intrinsic motivation, is a technology subordinate to human capacities to discern between good and evil.

They also rejected the idea that AI can experience human emotions (question 39). This rejection exposes a profound ontological difference between humans and AI. It is prudent to remember that emotions (García Andrade, 2019; Gravante, 2020) are attributed to the human condition and not to AI, as they are the result of evolutionary factors that highlight the ontological and biological difference between the two entities.

It is necessary to emphasize that feelings may be partially nonexistent in AI today, as it is confined to pre-programmed codes and algorithms; AI cannot naturally develop emotions as humans do. Paradoxically, however, AI without feelings can recognize and emulate multiple affective-emotional manifestations, thanks to its advanced models that simulate patterns of human behavior.

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Finally, they denied that AI can develop otherness as humans do (question 33). While AI can simulate complex interactions (Martínez Baigorri, 2024), it lacks the biological, social, and ethical foundations necessary for full recognition as a human "other."

There are no declarative statements that prove that AI has otherness, because, to date, technology in this field is limited to the capabilities of narrow AI (or weak AI). As mentioned earlier in this research, AI lacks subjectivity, emotions, self-motivation, empathy, principles and values, consciousness, uniqueness, and complexity in the sense of the innate and developed attributes of human. Consequently, AI is currently philosophically, socially, and humanistically incapable of recognizing the "other" as humans do, as it lacks several of the aforementioned elements.

On the other hand, AI has unique characteristics that make it "other" in its own way when performing actions such as analyzing, co-creating, addressing problems, satisfying human needs, recognizing certain emotions, interacting with other technologies, etc.

The presence of AI redefines the roles and relationships between subject and object, and it can be seen from post-human nomadism that there is the possibility of moving forward fluidly with a way of thinking that goes beyond the reductionism of traditional existentialism, so that future transformations of being "speak to us of alternative representations in which otherness, whether organic, artificial, or a mixture of both, is present" (Martínez Baigorri, 2024, p. 341).

It depends on human beings whether AI will at some point be recognized (or not) as an "other," whether humans are willing to restructure the paradigms that limit the conceptualization of human otherness (and whether the digital entity is programmed for this).

The results of this last dimension reinforce the need to deepen critical reflection on the epistemological and ontological limits of AI in relation to the human condition, in line with the challenges pointed out by recent literature.

Conclusions

This study aimed to assess, based on the paradigms and professional experience of teachers, how they recognize otherness and whether they identify its possible existence in AI, in order to explore the construction of present and future bonds between humans and this emerging technology. The findings presented underscore the importance of in-depth

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analysis to understand the ethical, social, and pedagogical implications in an increasingly digitized world.

Authors such as Aguilar-Gordón (2011) argue that technology should be understood as a means and as an end in itself. It is a means to achieve goals and objectives, and therefore, human beings must make rational use of technology to avoid objectification, instrumentalization, and even destruction.

However, when considering the evidence obtained, it is analyzed that caution should be exercised with this view, because digital technology, and AI in particular, must be approached with a critical, rational perspective that avoids dehumanization and excessive materialism.

On the one hand, the results of this research show that teachers do conceptualize, apply, and value otherness from another perspective, by revealing teachers' paradigms about the use and limits of AI in the educational process, in their daily lives, and in society in general. They do not consider AI to have otherness, because it lacks consciousness, ethical and moral issues, emotions, intrinsic motivation, etc., unless at some point in the future it is programmed to have that capacity.

In this sense, while some teachers recognize the transformative impact of AI on teaching and learning processes and its potential to reinforce social dynamics, others express uncertainty about its ethical and emotional capabilities and the possible fragmentation of the subject-subject relationship. This diversity of paradigms suggests the need to continually deepen the techno-scientific development of AI; teacher training on the ethical, technical, social, and pedagogical use of this technology; and conceptions of AI regarding a possible non-biological existentialism.

For these reasons, it is believed that otherness may continue to develop in the future, but that it will not necessarily be seen as it is known today. This possible scenario could unfold in parallel with the development of general AI (which will theoretically equal human intelligence) and the multifaceted surpassing of human capabilities through "super AI." Specifically, Uyar (2024) indicates that the unmatched capabilities of AI could lead people to attribute "supreme infallibility" to it, resulting in a cognitive and humanistic bias toward unthinking acceptance of its decisions. There are risks of confusing technological advancement with totalitarian superiority, as such dynamics could undermine the human entity. It is worth emphasizing that the potential otherness of AI is subject to technological advances and humans' willingness to recode the term otherness.

Therefore, it is not just a matter of personifying technology, but of recognizing its ability to interact and participate in human processes in a

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meaningful way. However, challenges remain related to professional training and the full recognition of otherness in complex social and cultural contexts, highlighting the need for greater awareness and training in the use of AI, aspects that remain urgent priorities in international educational and public policies.

A future framework for education is also proposed, in which AI not only assists but also continuously interacts collaboratively with teachers, enabling more personalized and inclusive approaches. This requires a careful balance between technological development and the preservation of fundamental human values to ensure that AI is a tool that amplifies teachers' ability to recognize and value diversity in all its forms.

Among the limitations of the study, the focus on a specific sample of higher education teachers in Mexico City stands out, which restricts the generalization of the results. In addition, although the quantitative design allowed to capture relevant trends, it would be advisable to incorporate more in-depth qualitative methodologies, such as interviews or focus groups, to explore the richness of subjective interpretations around otherness and AI.

In future research, it would be valuable to expand the sample to teachers from other sociocultural contexts and educational levels, as well as to integrate the voice of students as co-protagonists in their daily encounter with intelligent technologies. It would also be relevant to investigate the practical impact of AI tools specifically designed to promote educational diversity and inclusion.

Finally, the study invites us to critically rethink the role of AI in education and society; it provides a basis for exploring pedagogical and social strategies with a human touch that foster a more conscious relationship between humans and technologies. It is imperative to develop training programs that integrate digital skills with ethical and humanistic approaches to ensure that AI strengthens (rather than replaces) teachers' ability to build inclusive communities in an interconnected and constantly changing world.

Note

1 The journal's guidelines state that documents with a maximum of three authors are accepted. However, as this is an interesting, complex, and extensive article that has received outstanding evaluations from international reviewers and has been written by researchers from different countries and continents, the Editorial Board considers it a special case and has decided to make an exception for its publication (Sophia Journal: Collection of Philosophy of Education. Publication guidelines, section 2, identification details).

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Declaration on the use of artificial intelligence
Ricardo Alberto Reza Flores, Rosa Maria Vicari, Cristiano Galafassi, and Mireia Usart Rodríguez, **DECLARE** that the article entitled "Teachers' perceptions of otherness in the age of artificial intelligence" was not supported by artificial intelligence (AI).

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Artificial Intelligence and the Risk of an Inverted Analogy

La inteligencia artificial y el riesgo de una analogía invertida

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Abstract

The aim of this paper is to present the general elements that allow us to discuss the reality of Artificial Intelligence (AI) and its place in the world as a technological object. The intention is to suggest the need to revert the Intelligence Analogy that is primarily human and artificial just in a derivate form. To do so, first, a conceptual itinerary will be made showing some of the most important elements that philosophy has shown about human intelligence. In that way, it is possible to contrast the metaphor of AI. Thus, to distinguish the sense in which the words "intelligence" and "artificial" are used in reference to machines. In raising these aspects, we will address the distinction between mechanical and technological objects with the intention of showing some of the specificities of AI. Finally, the question is if, in the face of all these distinctions generated by the analysis of the reality of "artificial intelligence" as a novelty that has greater autonomy from the human, but uses all its mathematical ingenuity and communicative skills, it is necessary to propose more appropriate terms and categories to avoid the inversion of the Anthropological Analogy and to give precise contours to the marketing of these technologies.

Keywords

Intelligence, Artificial Intelligence, Technology, Human Being, Ethics, Responsibility.

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Resumen

Este trabajo tiene como objetivo plantear los elementos generales que permitan discutir la realidad de la inteligencia artificial (IA) y su lugar en el mundo como objeto tecnológico. Con esto se pretende plantear la necesidad de revertir la analogía de la inteligencia que en primer lugar es humana y solo de forma derivada artificial. Para ello, inicialmente, se hará un recorrido conceptual de algunos de los elementos más importantes que la filosofía ha dado a conocer sobre la inteligencia humana. De esta forma, es posible hacer un contraste con la metáfora de la IA. Es decir, distinguir el sentido con que se usan las palabras "inteligencia" y "artificial" en referencia a las máquinas. Al plantear estos aspectos abordaremos la distinción entre los objetos mecánicos y tecnológicos con la intención de mostrar algunas de las especificidades de la IA. Con esto en mente, se aborda una última cuestión en torno a si, frente a todas estas distinciones que genera el análisis de la realidad de la "inteligencia artificial" como una novedad que tiene mayor autonomía frente a lo humano, pero que usa todo su ingenio matemático y sus habilidades comunicativas, es necesario proponer términos y categorías más apropiadas para evitar la inversión de la analogía antropológica y dar contornos precisos al *marketing* de estas tecnologías.

Palabras clave

Inteligencia, inteligencia artificial, tecnología, ser humano, ética, responsabilidad.

That is the wonderful thing about human beings: we never get discouraged or upset enough to give up trying to do it all over again, because we know that it is important and worthwhile.
Ray Bradbury, Fahrenheit 451

Introduction

The risk posed by new technologies today is probably not that some literary or cinematic fictions will come true, in which human life is endangered by the exponential growth of artificial intelligence (AI), leading it to spiral out of control and turn against mankind. Although the autonomy of machines is currently shrouded in mystery, it is certain that we should not expect them to go out of control and do things that are beyond their architecture[1]. According to various philosophers and sociologists from a wide range of traditions, the real catastrophe that AI could cause is that, as an aid to certain human activities —which have often been rightly or wrongly claimed to be uniquely human—it could mortally damage them and, with them, essential areas of life such as memory, learning, critical thinking, art, the exercise of freedom, and the importance of face-to-face relationships (Barrios *et al.*, 2020).

This is nothing new. As French philosopher Éric Sadin (2017, p. 34) says, it is a process of digitization of human existence. Today, areas such as play, knowledge, profession, social relationships of love and friendship, sexuality, economics, politics, in other words, human life in general, are

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becoming "virtualized" and, in this way, are being transformed as are "the traditional ways of being and relating to the world" (Gonzálvez-Pérez & Cortijo-Ruiz, 2023, p. 44). Specifically, this is happening through specialized algorithms that present users with what they "want" and, in theory, respond to their preferences. However, *customization* in these circumstances seems more synonymous with "commodification" than with respect for the person. It is a process by which human beings become trapped in electronic devices and in the trends, influences, stories, narratives, and empirical certainties that algorithms offer them and that, paradoxically, undermine their most noble faculties. Therefore, it is not entirely unreasonable to say that the thinking subject of Modernity is being replaced by an *algorithmic subject (*Sadin, 2017, p. 60). This is not happening because human beings are ultimately thinking or mathematical beings (Quiceno & Morales, 2024), but because algorithms are becoming a source of certainty and a way of life (Sadin, 2020, p. 58).

The appropriateness of the emergence of this algorithmic subject is what needs to be reviewed when considering any strategy for regulating these technologies (Karasinski & Birolo, 2022). This is the only way to avoid surrendering to the impressive performance of AI and to remember both human responsibility and the philosophical reflection behind it. It must also be recognized that philosophy, in a certain sense, is at a disadvantage in the face of rapid technological advances and can only evaluate them with greater perspective in *hindsight.* In this sense, on the one hand, human responsibility is the *fulcrum* of the entire discussion; without this fundamental awareness, it is normal for this process of digitization to be a form of consensual self-destruction. On the other hand, given that technology normally runs far ahead of philosophy, we must recognize that we now live suffocated by propaganda, imaginings, films, and *marketing,* which seem to "render us incapable of properly assimilating what we are encountering" (Pérez Marcos, 2023, p. 17).

Consequently, by focusing on human responsibility and its relationship with its own work, the aim of this paper is to highlight some of the most important aspects of human intelligence so that we can discuss the reality of "artificial intelligence," its place in the world as a technological object and product, and reverse the meaning with which the terms are used. The latter is what has been called "reversing analogies." This is especially important because these technologies are gaining more and more space in human life and at times it seems to be positioning as the very way in which essential realities are understood and, as a consequence, give rise to other types of reductions that undermine dignity, education, and science.

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To achieve this objective, documentary sources have been reviewed to highlight some of the most important aspects of human intelligence and to propose what we believe are the essential features that define the phenomenon of AI. The aim is to show the need to discuss, review, and reverse the analogies or metaphors used by technology to describe its activity, which are gradually gaining cultural ground as the very meanings with which we understand things.

The document is therefore structured in three parts. First, a conceptual summary of the essential aspects of human intelligence is provided. Second, a definition of the AI metaphor is provided, seeking to distinguish the meaning with which the words intelligence and artificial are used in reference to humans and machines. In this reflection, it is essential to analyze the characteristics of AI in order to find both its similarities and characteristics, considering that it is a work made in the image of certain cognitive processes of human beings and that it has a *markedly anthropomorphic tendency.* Finally, we seek to answer the question of whether, given all the distinctions that the analysis raises, it is necessary to propose a linguistic apparatus with new, more precise categories that give clear contours to the *marketing* and literary fictions of these new technologies. The idea is to suggest that, given the emergence and importance of these technologies in human life, it is necessary at least to debate the issue.

Intelligence cannot be artificial

It is difficult to be exhaustive in such a short space on a subject as broad as intelligence. This is a subject that could also lead to reflection in different areas of philosophy, experimental science, and even theology. It would also be pretentious to say that all aspects of intelligence can be covered, even the most important ones. The idea is to attempt to outline a conceptual synthesis of what is considered appropriate for a non-reductionist reflection on the subject, which, of course, does not claim to be exhaustive. We seek to show the magnitude of a reflection that will remain open as long as intelligence itself exists and to contrast what we commonly refer to today as "artificial intelligence," which is, in part, the objective of this work.

We start with two pillars of Western thought: Plato and Aristotle. Plato (1872) left behind for posterity his reflections on the transcendence of ideas, the recognition of the rationality of the world, and the importance of self-knowledge. For his part, Aristotle (1994) has left clues as to what it means to intentionally open intelligence to everything that exists,

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including the divine, with whom, according to him, he seems to be related in this very way.

Plato left behind a legacy of the philosophy of ideas. The Athenian philosopher understood that, in some way, human beings are capable of communicating meaningfully and that this communication involves a common ground that does not depend on the speaker's perspective, but rather on the very consistency of reality (Ricoeur, 2013, pp. 24, 152). In this sense, ideas initially transcend the empirical world (Franck, 2018, p. 104) and suggest the existence of a type of reality that has its own stability, that invites contemplation, that illuminates the reality of experience as a form of concretion and for which the only ones capable are, precisely, intelligent beings (Plato, 1988, p. 342). In this *stabilitas* of theory lies the fact that the ideas of philosophy remain active in human life almost continuously (Gilbert, 2008, p. 64), as if they were a legacy passed down from generation to generation. In modern empirical sciences, this occurs according to the very evolution of what is considered "progress," given that, focused on what is supposed to be progress, they continually change the knowledge and certainties they attain, continually replacing them. Technology in this case is quite paradigmatic.

Secondly, Plato (1872) made humanity aware of the rationality of the world, as he describes in *Timaeus*, "the world has order and structure" (p. 164). However, the Athenian goes a step further when he interprets that the *order* of the world is the result of an intelligence capable of putting everything in its place. In this sense, he argues that human intelligence is capable of grasping this order and recognizing what is intelligent through rationality. Conversely, "rationality is the manifestation of an intelligence capable of establishing it" (Soler and López, 2005, p. 30), a legality that can be described (and which would be the principle of all prescription) through the different modalities of language with which we try to express it. In this case, not only categorical language, but also, for example, mathematical, physical, or biochemical language. Therefore, the principle of all basic and experimental science is to understand that the world has a rationality that can be known and communicated (Soler and López, 2005).

Finally, Plato (2018), as a result of his deep connection with Socrates, left for posterity his reflection on self-knowledge. For human beings, knowledge of the world is, at the same time, knowledge of oneself.

Aristotle (1994, p. 69) takes up this teaching in his own way, but his contribution to the understanding of intelligence is superlative. Firstly, that knowledge is marked by desire, by a kind of insatiable hunger for

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knowledge and a source of infinite novelty that dwells in human nature. But he adds that, in the forms of knowledge, human beings have a particularity, which is that their *nous poietikós* is capable of "making all things" (1978, p. 234). In this way, Aristotle understood that for intelligence to have such power, it had to be capable of abstraction, of bringing the intimacy of beings to itself and knowing them in their deepest radicality. This, as he rightly states, is only possible with an intelligence that is "impassive, non-material, and therefore immortal" (p. 234). Hence his doubts about the human character of intelligence.

However, it was Christian thinkers who took this issue to a deeper level by connecting it with the possibility of human beings knowing themselves (Augustine, 2019), exploring the personal transcendence of that knowledge (Landsberg, 2016, p. 322) and emphasizing the search for truth as a manifestation of that original encounter.

These thinkers[2] recognized that human beings, although insignificant in relation to the infinity of the universe, have within themselves the potential to know it and be aware of it. As Pascal (1986) masterfully describes:

> Man is but a reed, the weakest thing in nature; but he is a thinking reed. The entire universe need not take up arms against him to crush him: a vapor, a drop of water is enough to kill him. But even if the universe crushed him, man would still be nobler than what kills him, since he knows that he dies and knows the superiority that the universe has over him, while the universe knows nothing (pp. 63-64).

Surely, knowing the vast universe does not seem possible in any effective way. But the fact that human beings are open to knowing it intentionally reveals the depth of their inner nature, which is as infinite as the cosmos, even *more expansive* if one considers their task and their awareness of that task. Hence, many of these thinkers came to understand that both knowledge of the world and knowledge of oneself, with their mixed complexity, is an unlimited task that speaks to the very nature of human beings (Descartes, 1991).

These same thinkers took the question of intelligence to a second level of transcendence that Plato could not have fully imagined, i.e., that intelligence is personal (Di Nissa, 2000, p. 119). This means that the nobility of intelligence comes from the very dignity of the person who possesses it (Spaemann, 2010) and that, since it is about someone and not something, knowledge can only be personal and interpersonal and, therefore, lived and acted upon (Stein, 2020, p. 163). This is very important when considering intelligence and is often overlooked. Intelligence is

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not characteristic of separate beings; one cannot be humanly intelligent without a body (Landsberg, 2006, p. 14) and, ontologically, without a person who is aware of what he/she knows (Serretti, 2008, p. 82), of his/her emotions (Rodríguez Valls, 2015), and of the contents of consciousness that *he/she receives from* and *delivers to* those with whom the person integrates the world of life (Ricoeur, 2006, p. 379).

Thus, it could be said that intelligence without people, without ideas, without a body, without relationships, without emotions, and without actions is not true intelligence. Furthermore, only people can discriminate between knowledge. Their self-awareness allows them to differentiate between truth and falsehood, partiality and deliberate error, and ideology and the first principles of reality. As medieval doctors have reflected at length, truth is appropriate to intelligence (Thomas Aquinas, 2007, p. 38), that is why it usually has value in and of itself. It is sought because it perfects human beings and allows them to find meaning in existence. This does not preclude the search for utility, but in a sense, it serves as a guide.

In light of the above, the intelligence we call "artificial" is not intelligence and can perhaps only be seen as a potential complement (Khasawneh *et al*., 2024, p. 309). Intelligence cannot be artificial because it can only be personal. This idea could already be suspected from the argument, and although it is also a fact of experience, it is often questioned in light of the speed and enormous capacity of machines to structure the data available to them. For this reason, it is increasingly difficult to perceive the difference, and it is not even certain that everyone sees it this way.

In fact, the discussion seems to arise from neuroscience—which plays a role here that we cannot[3] develop—through a mechanistic view of human knowledge (McCulloch & Pitts, 1990) and, more precisely, of the human brain, which for many "is what thinks" (Changeux, 2005)[4]. With this anthropological perspective in mind, it is assumed that AI is a vastly improved version of the aforementioned core human capacity (Kurzweil, 2005). Here lies both "the foundation of the connectionist doctrine in information sciences" (Sadin, 2020, pp. 64-65) and the reversal of the anthropological analogy and the potential reduction of human beings and their dignity to objects.

AI thrives on reasoning and probabilistic calculation. This is a very important cognitive activity that links consciousness and the world, but it is limited to the processing of information through mathematical formalization. There is no machine, no person (a reality that cannot be reproduced algorithmically), no self-awareness, no body (even if it has a support),

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no multisensory apprehension, no relationality, no awareness of the other, no deliberation, no planning of courses of action for which to take responsibility, no ends and, therefore, no projection and much less ignorance or errors. AI reproduces a very specific aspect of human intelligence that, to a certain extent, has increased in recent times, giving the automation of probabilistic calculation, a magnitude that it does not actually have.

The question, then, is why current technological devices are called "intelligent." The answer must be found in their very activity. Apparently, because they draw on human ingenuity, they naturally appear *smart* (astute and efficient) for certain types of human tasks. Similarly, because they have a greater degree of autonomy than artistic and mechanical productions, something that is timidly beginning to be called technological as an absolute limit of the technical category. This is because once is "turned on" or "set in motion," it does not need or allow human intervention in its "deliberations." This "autonomy" reaches the point where humans begin to fear being surprised, as there is a *space for response* that closely resembles what they recognize in themselves as the principle of interiority (the famous *black box)* and the unpredictability of their freedom. Analyzing the type of AI may shed more light on the task at hand.

Production: between physical processes and conscious life

Without it being necessary to analyze its origins directly, as Wiener (1988) suggests in the statements that drive the American cybernetic movement, AI is driven by an anthropomorphic tendency. This is understandable, on the one hand, because of the image it has as a reference and, on the other, because of its very aspirations (Blanco & Garrido, 2024, p. 174). In other words, a dynamic is set in motion that aims to make this work become like its producer and even go beyond it.

In this case, in order not to stray from the issue, the distinction proposed by the American philosopher John Searle (1980) may be quite useful. AI can be divided into two modes: strong and weak. The goal of strong AI has been lost, and most philosophers and technicians recognize that what is aspired to is beyond the reach of this type of mechanism. It does not seem possible to reproduce a person and their self-awareness either in a laboratory or in a workshop where all possible computing power and the most quantum nanotechnology are combined (Arana, 2015).

Weak AI, on the other hand, which focuses on enhancing the mathematical, programming, and training aspects of algorithms without

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attempting to replace what is truly human, has been more successful (Sadin, 2017, p. 21). The peace of mind that this may offer some is only apparent. Although we should not expect conscious automated beings to wage war on humanity, we must not lose sight of the fact that their capabilities are extremely powerful and have a direct impact on human life (González Cuenca, 2021, p. 152). As Guardini (1982) argues, in technological matters, the risk is always that "the producer renounces the individual life of the work and becomes accustomed to wanting to produce only what the machine allows" (p. 53). With this, their personal relationship with reality disappears, placing their trust and their life in the hands of their product.

For these reasons, it must be said that when this mechanism is described as artificial, the statement is only partially correct. Specifically, it is interpreted as something that is not alive, is not personal, and is not produced by generation, but rather as the result of the transformative power of human beings in the world. However, in this case, the artificial is a limit that algorithms cross by virtue of their relationship with human intelligence. Thus, there is an aspect of human rationality that cannot be reduced to other useful products (such as a hammer or a pot) or mechanical products (such as the pulley or gear systems found in a factory).

To that extent, it should also be specified that weak AI is a mechanism that represents a sophistication of human action. It brings together all the computing power of mathematics, whose formality involves a degree of abstraction from the experience of the world, the development of programming languages with great capacities to encompass various variables of reality and respond to them in multiple ways, and, of course, the combination with an electromechanical support that allows it to function.

These aspects allow us to see something of the complexity of AI, but at the same time something of its specificity. As Hannah Arendt (2005) comments when analyzing the types of acts, actions, and activities of human beings in the world, in classical antiquity there was hardly any distinction between art and technical production. Both, in fact, were referred to as the fruit of the same type of human labor: *poiēsis*. A shoemaker and a blacksmith were the same as artists in that both were producers of an aspect of reality that was a copy of an original model or a simple cultural or utilitarian aspect that constituted public life (Arendt, 2005, p. 170).

However, taking a great leap forward[5], with what is now called modern philosophy and physics, a gap appears between them. Within human productive works, one thing is the result that emerges from art and another is the result of the manufacture of devices. The latter involves an attempt to give autonomy to the work through mechanical functioning

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or an internal "logic" or "physics" between its constituent parts. "Mechanical" is no longer understood as an extension of human capabilities, but as something that crystallizes through a calculated and efficient process involving human ingenuity. However, the mechanical has a particularity, which is that its latent processes *are patent*. In other words, they can be interrupted by human action and, to a certain extent, redirected not only in their purpose but also intervened in their principle and execution, even though they maintain autonomy from the human body and, only in part, from human intelligence.

To say that mechanical processes are patent implies, to a certain extent, accepting that humans can intervene in their architecture, in their step-by-step programming, and in the purpose of their exercise. In this sense, if these variables function properly, the mechanical process is normally predictable. Thus, the actions of a bottling machine, a sewing machine, a rice cooker, or a car can be known in advance. Machines are predictable because they follow precise laws and instructions that humans put into them and that allow them to see their results without much difficulty, except for errors that are normally mechanical or programming errors.

At this point, it must be said that the technical (which can still be identified *tout court* as the mechanical) achieves a higher degree of this productive aspect in technology, but even more so, it achieves its own specificity through its relationship with human cognitive aspects. This specificity can be described in at least three ways: its *greater degree of autonomy*, its *computational capacity*, and its *human coating*.

AI implies a greater "distance" between the machine and its dependence on human intervention. This is what its greater autonomy refers to and implies a difference from the mechanical. If mechanics already implied "letting things run according to established laws" and a "withdrawal" from the human body, in AI human intervention almost disappears in the process of performing tasks and implies a "withdrawal" from human intelligence. In this case, it is possible to act on the architecture and expect a result on which the mechanism can be evaluated. However, the "parts," "steps," and "sequences" are veiled from the user (Arão, 2024, p. 3). In this sense, a response that seems unexpected is expected, and the machine receives feedback on its performance, which allows it to refine its predictions. Through probabilistic calculation, it can integrate interaction into its response capacity. This has meant that the metaphor of learning has also been extended to refer to the fact that AI adapts to different contexts of interaction and improves the quality of its responses.

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AI, even though it has mechanical elements, performs a series of "internal" processes in which humans can no longer intervene and which make its results seemingly unpredictable (something that goes even beyond the design or architecture of the machines and the probabilistic algorithms that govern them). Its computational power also plays a role here. Humans working in technology have strived to digitize reality, reducing it to storable data.

That is why the second aspect that characterizes AI is its computing power. Data scientists rigorously and efficiently refine their algorithms with the aim of producing high-quality syntheses of this vast amount of digitized information in increasingly shorter times and with greater accuracy in terms of the possibilities available. Thus, if the automatic response of an AI can already cause surprise, the quality of the result can dazzle or cause deep confusion when it addresses truly human questions. These are feelings that many may already have experienced when dealing closely with the possibilities of these systems.

The third specific aspect of this technology lies in the way they use to display their results. AI has been programmed through the mathematization of logic so that it can respond humanly with actions such as language and art (music, painting, literature). Essentially, the complexity of technological processes has been disguised with some essential aspects of humanity. Hence, it appears as "something" with which a back-and-forth exchange can be established, an *input* and *output* of information that closely emulates the human communication process (a fact that would fool Turing and several other unsuspecting individuals). In this way, AI enters human life as something capable of intervening in its own sociocultural narrative and possessing the very reasonableness of the world, insofar as it can be digitized, as an open horizon for its activity.

For some, these distinctions may fall short, but for others, it is the possibility of turning the rationality of the world into a computational rationality. "Everything is data." Thus, it is possible to fly thousands of planes at the same time and reduce accidents, allow patients to successfully treat their ailments, identify people in criminal acts, make *marketing* and trade strategies more efficient, find lost monuments, and convert databases of legal, medical, psychological, or political judgments into "objective" and "structured" opinions via algorithms. The magnitude of these activities makes it not common for this tool to be associated with "the pursuit and attainment of power" (Niño *et al.*, 2024, p. 251).

It seems clear that terms in one sense are beginning to fall short, and therefore some concepts such as intelligence, learning, ethics, artifi-

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cial, synthesis, language, ontology, freedom, etc. are becoming confusing and impoverishing reality. This raises an essential question: given the specificity of this type of technological work, is it necessary to coin new terminology that allows us to distinguish between things so that they are not confused with one another?

A new lexicon for technology

It is relevant to ask whether, in the face of the novelty of AI, it is necessary to propose new categories. Initially, it must be said that the question is important for at least two reasons. Firstly, because this problem has also arisen in relation to environmental awareness and animal welfare: the idea that animals have a specificity in relation to humans and that understanding this can lead to a responsible way of approaching the natural world and establishing certain limits on uncontrolled human action. This issue also has a fundamental anthropological correlate, given that predating the natural world is tantamount to humans preying on themselves. In the case of AI, it would not be a question of creating an ethics of AI, as some transhumanists such as Bostrom (2011) propose, but rather an ethics for AI, as Benanti (2022) suggests. Secondly, this new terminology would make it possible to distinguish between what is properly human and what is technological (Ocampo Ponce, 2024). Sadin (2020) is emphatic in denouncing that technological movements have borrowed an entire philosophical lexicon "from the register of cognitive sciences without any shame or concern for terminological precision" (p. 19). A clear example is the use of words such as "artificial intelligence," "*machine learning*," "*deep learning*," and "web ontologies." In these cases, we speak of intelligence, learning, and ontology, and use these terms to refer to mechanisms that do not resemble what they refer to. If there is any similarity in any case, it is philosophically clear that the difference is higher.

Despite this, it should be recognized that, while these distinctions could help defend human dignity and certain abuses of *marketing* by technology companies and political propaganda, they overlook the simple fact that it is human beings who epistemologically order the world and that there is undoubtedly an ontological kinship, both with nature and with the work produced. Thus, the proposal is as simple as it is common sense: to recover the reflection on the human being as *princeps analogatum*. It is a matter of turning our gaze back to the fact that AI is not the evolution of human intelligence, but simply its aspect most closely linked to calculation, parameters, and the workings of reason.

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In this way, two paths are proposed that are quite convenient for human beings and for the philosophy that deals with these issues. One is to continue reflecting on the fundamental aspects of human existence and, especially, on the question of who human beings are. Second, to recognize that when faced with nature and with our own work, it is human beings whom we must study in depth in order to better understand the reality that surrounds us and the responsibility we have for what we do in the world. The logical reason for this exercise in responsibility is that, as far as we know, human beings are the only beings capable of thinking about themselves and the cosmos. If these analogies are found in animals and machines, it is because, in the first case, it is human beings who recognize a relationship of similarity in them and try to name their behavior and, in the second case, because it is human beings who design machines as a way of helping to perfect their actions and activities in the world. When the analogy is reversed, this is exactly what is meant.

It seems increasingly clear that the question of human responsibility poses an enormous challenge. One can think of the difficulty of arbitrating the question of who should be responsible for the results delivered by AI. This is because the relationship with AI is not experienced as a continuous event arising from the exercise of freedom. In reality, the engineer and the direct and indirect users, as well as the algorithm itself, are only partially "accountable" (again extending the language in the latter case). Responsibility, which is a personal prerogative, appears fragmented in the face of AI. On the one hand, because the user has no way of intervening in the biases of an AI and because the algorithm synthesizes information that has a diversity of authors—hence the credit for the work cannot be attributed solely to the person who writes a *prompt*. On the other hand, because the absence of apparent consequences in reality, beyond the virtual realm, erodes the moderating influence of ethics on users. Robbing a bank with a couple of commands, for example, may seem like a game, and the consequences for the people and institutions affected are barely visible.

For this reason, it is important to consider how to think about shared responsibility without diluting personal responsibility. Surely, as some have reflected, this should promote the increasingly necessary fact that institutions must have human faces and decisions must be traceable within them and in their algorithms. But this is a matter that needs to be discussed much more publicly.

Thus, returning to the ontological and linguistic question, it seems that today it is essential to turn our gaze back to anthropology and try to ensure that in the various spheres in which human beings carry out

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their actions (such as interpersonal, educational, work, economic, or political), their dignity and the task of responsibility that their intelligence implies can always be recognized. It does not seem a good option for human beings to dissolve into their work because of insecurity about their own vulnerabilities or because of a desire for extremely deceptive power. This does not exclude the possibility that, in some sectors of reality, it may be advisable to coin certain terms that can be accepted by the scientific and academic community so that we can speak more accurately about this phenomenon, whose possibilities and risks still need to be better understood. Some concepts can be proposed, such as "computer producers," "data compilation," or "web positioning," which are closer to cyber reality and detract less from notions such as "intelligence," "learning," or "ontology," respectively. It must be emphasized that this is an issue that should be discussed publicly and openly in various forums with the aim of making the population aware of the differences and genuine similarities. A clear example is what has happened in the European Commission, where an attempt has been made to propose a human-centered perspective to address the problem of trustworthy AI (Terrones Rodríguez & Rocha Berardi; Roche Berardi, 2024, p. 222). However, in the case of this paper, we only seek to point out a few examples to illustrate the issue and, insofar as it may be helpful, to dispel some of the fear that ignorance about them may cause.

As Romano Guardini (1982, p. 121) argued, we must not capitulate in the face of technology. On the contrary, as it is a work that arises from the consortium of the noblest human powers, it requires greater effort and discipline for human beings to grow through it rather than become diluted. The exercise of responsibility by the most educated members of society is essential, as it is an attack on human dignity for human intelligence to be the raw material of artificial intelligence, just as iron and wood were the raw materials of large factories. For this reason, it may be healthy to limit the exercise of something for which we are not yet mature, and which seems to require mature consciences (Perezchica *et al.*, 2024).

This is the way to reverse the analogy, i.e., starting from a right consciousness of oneself that is not afraid of one's own vulnerabilities and responsibly recognizes one's own capacities. Anchoring reflection in a healthy anthropology prevents human beings from conforming or mistakenly identifying with their work and seeing in it the real reflection of a perfection that makes them feel simultaneously vulnerable and more capable. This middle or virtuous position is difficult to achieve; most of the time it is even unpopular and, in its distortion, as described by philo-

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sopher and psychiatrist Thomas Fuchs (2023, p. 543), it is reminiscent in every way of the tragedy of Narcissus. The story of a man in love with his own image who gradually loses himself and, blinded by his desires, dies in the arms of his spectral figure: AI.

Conclusions

We have attempted to show the complexity of reality and the reflection of human intelligence, a subject that remains open and does not seem to be reducible to algorithmic calculation or stored data, as is intended through AI. As mentioned above, human intelligence is enormously complex and cannot be reproduced or emulated simply through probabilistic calculation. Furthermore, new computational technologies are realities that combine certain cognitive aspects with other material aspects that have their own specificity as human creations. In this sense, they are not mere extensions that perform tasks or generate pleasure, but rather occupy a space between the human and the mechanical.

In this case, it is precisely the human aspect of AI that needs to be continuously evaluated. Certain technological dystopias are not expected to come to pass, such as the one that posits that the combination of robotics and computational rationality could generate humanoids that get out of control and attempt to end or diminish human life (unless we program them to do so). It is true that, since its inception, AI has been driven by the desire to reproduce human consciousness through the power of technology. This desire, as several contemporary thinkers recognize, seems increasingly unrealizable, although it is not certain that new technologies will not awaken this ancient creative impulse in the future. Therefore, what is at stake is rather to assess the markedly anthropomorphic orientation of these technologies and the enormous impact they are beginning to have on different areas of human life. As Sadin (2020) said, a change of era is emerging through the digitization of life. Human beings are beginning to seek truth, friendship, fun, love, and certainty through algorithms. Therefore, the new spectral reality of technology may jeopardize essential human aspects linked to interpersonal relationships, authentic learning, the configuration of science, and, in general, the different strata of society that take part in this matter (states, institutions, universities, economic entities, and users in general).

This responsibility lies, first and foremost, in restoring awareness to human beings that AI is a creation that has come out of their hands

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and is nourished by their ingenuity and capacity. Human beings must take charge of it with mature awareness. They must not believe that they are playing God, nor that what they have produced is a humiliation for their lives. That is why it is not trivial to look back at language as a way of addressing this issue in its common configuration and to recognize that it is necessary to speak clearly in order to avoid confusion and reductions that ultimately undermine human dignity. Consequently, reversing the analogy is a way of returning our gaze to anthropology, with the intention of avoiding some of the totalitarian errors of the past, which are, of course, *the chronicle of a death foretold*.

Notes

1 We have found a good summary of this discussion in Volpato Dutra and De Góes (2024, pp. 2-5).
2 Some examples include St. Gregory of Nicaea, St. Augustine, St. Thomas Aquinas, Pascal, Descartes, and some contemporaries such as Romano Guardini, Paul Landsberg, Edith Stein, and Karol Wojtyla.
3 We recommend the excellent summary presented in the work of Murillo (2024).
4 Although neuroscience is initially recognized as experimental, neuroscientists often structure their findings in a philosophical way. In this sense, theoretical aspects are repeated by some of the leading authors in this experimental discipline. We propose the paradigmatic examples of Kandel (2019), Gazzaniga (2019), Aguado (2019), and Damasio (2022).
5 Without attempting to reduce the issue to a few philosophical notes, I find myself in line with Guardini (1982) on this matter, when he says that in the Christian world "the rational, instinctive, and contemplative-creative elements are approximately in balance in the way man understands nature, behaves towards it, uses it, and shapes it. Man takes possession of what is given, intensifies its forms, increases its effects, but essentially and as a whole, does not break its structure" (p. 50).
6 Some stronger mechanists, following Descartes, think that animals are included in this view, and other contemporary materialists, through behaviorism, also include human beings.
7 The artistic case has been much discussed recently in relation to AI, with some considering its activity to be fundamentally plagiarism (Marburger, 2024, p. 5).

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It is scientific journal, which uses the peer-review system, under double-blind review methodology, according to the publication standards of the American Psychological Association (APA). Compliance with this system allows authors to guarantee an objective, impartial and transparent review process, which facilitates the publication of their inclusion in reference databases, repositories and international indexing.

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2. Scope and policy

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8) Discussion and conclusions: Summarize the most important findings, relating the observations themselves with relevant studies, indicating contributions and limitations, without adding data already mentioned in other

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sections. Also, the discussion and conclusions section should include the deductions and lines for future research.

9) Supports and acknowledgments (optional): The Council Science Editors recommends the author (s) to specify the source of funding for the research. Priority will be given to projects supported by national and international competitive projects. In any case, for the scientific evaluation of the manuscript, it should be only anonymized with XXXX for its initial evaluation, in order not to identify authors and research teams, which should be explained in the Cover Letter and later in the final manuscript.

10) The notes (optional) will go, only if necessary, at the end of the article (before the references). They must be manually annotated, since the system of footnotes or the end of Word is not recognized by the layout systems. The numbers of notes are placed in superscript, both in the text and in the final note. The numbers of notes are placed in superscript, both in the text and in the final note. No notes are allowed that collect simple bibliographic citations (without comments), as these should go in the references.

11) References: Bibliographical citations should be reviewed in the form of references to the text. Under no circumstances should references not mentioned in the text be included. Their number should be sufficient to contextualize the theoretical framework with current and important criteria. They will be presented alphabetically by the first last name of the author.

b. Reviews

Literature reviews are based on the analysis of major publications on a giveLiterature reviews are based on the analysis of major publications on a given topic; Its objective is to define the current state of the problem and to evaluate the investigations carried out. Its structure responds to the phases of the theme/ problem, contributions of researchers or teams, changes in theory or main theoretical currents; unsolved problems; current and future trends (Giordanino, 2011). According to UNESCO, this type of work is also known as "recapitulative studies"

1) Title (Spanish) /Title (English): Concise but informative, in Spanish on the first line and in English on the second. A maximum of 85 characters with spaces are accepted. The title is not only the responsibility of the authors, changes being able to be proposed by the Editorial Board.

2) Identification data: Of each of the authors, organized by priority. A maximum of 3 authors will be accepted per original, although there may be exceptions justified by the topic, its complexity and extent. When the subject matter is of significant relevance to the scientific community, involves complex categorical analysis within a specific field of knowledge, is developed by researchers from different countries and continents, and receives an outstanding evaluation from international peer reviewers. Each name must next to the names must follow the professional category, work center, email of each author and

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complete ORCID number. Aspects that must be included in the Cover Letter, must also be uploaded to the OJS system of the journal, in the Metadata section and /or in a word document attached to the file containing the work proposed for the evaluation.

3) Abstract (Spanish) / Abstract (English): It will have a minimum length of 210 and a maximum of 220 words in Spanish; and 200 and maximum 210 words in English. The abstract will describe concisely and in this order: 1) Justification of the topic; 2) Objectives; 3) Methodology; 4) Main results; 5) Main conclusions. It must be impersonally written "This paper analyzes..." In the case of the abstract, the use of automatic translators will not be accepted due to their poor quality.

4) Keywords (Spanish) / Keywords (English): A maximum of 6 keywords must be presented for each language version directly related to the subject of the work. The use of the key words set out in UNESCO's Thesaurus and of the Journal itself will be positively valued.

5) Introduction: It should include a brief presentation of the topic, the formulation of the purpose or objective of the study, the context of the problem and the formulation of the problem that is proposed, the presentation of the idea to be defended, the justification explaining the importance, the relevance of the study; the methodological framework used, and finally, a brief description of the structure of the document. In the justification it is necessary to use bibliographical citations as well as the most significant and current literature on the subject at national and international level.

6) Body or development of the document: It implies putting into practice throughout the text, a critical attitude that should tend towards the interpellation, in order to attract the attention of the topic and the problem treated. The writer must generate in the reader the capacity to identify the dialogical intention of the proposal and to promote an open discussion.

7) Conclusions: Objectively state the results and findings. Offer a vision of the implications of the work, the limitations, the tentative response to the problem, the relations with the objective of the research and the possible lines of continuity (to fulfill this objective it is suggested not to include all the results obtained in the research). The conclusions should be duly justified according to the research carried out. The conclusions may be associated with the recommendations, evaluations, applications, suggestions, new relations and accepted or rejected hypotheses.

8) Bibliography: It is the set of works used in the structuring of the scientific text. It should include only the reference of the works used in the research. Bibliographical references should be ordered alphabetically and conform to the international APA standards, in their sixth edition.

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3.2. Guidelines for references

Periodic Publications

Journal article (author): Valdés-Pérez, D. (2016). Valdés-Pérez, D. (2016). Incidencia de las técnicas de gestión en la mejora de decisiones administrativas [Impact of Management Techniques on the Improvement of Administrative Decisions]. Retos, 12(6), 199-2013. https://doi.org/10.17163/ret.n12.2016.05

Journal Article (Up to six authors): Ospina, M.C., Alvarado, S.V., Fefferman, M., & Llanos, D. (2016). Introducción del dossier temático "Infancias y juventudes: violencias, conflictos, memorias y procesos de construcción de paz" [Introduction of the thematic dossier "Infancy and Youth: Violence, Conflicts, Memories and Peace Construction Processes"]. Universitas, 25(14), 91-95. https://doi.org/10.17163/uni.n25.%25x

Journal article (more tan six authors): Smith, S.W., Smith, S.L. Pieper, K.M., Yoo, J.H., Ferrys, A.L., Downs, E.,... Bowden, B. (2006). Altruism on American Television: Examining the Amount of, and Context Surronding. Acts of Helping and Sharing. Journal of Communication, 56(4), 707-727. https://doi.org/10.1111/j.1460-2466.2006.00316.x

Journal article (without DOI): Rodríguez, A. (2007). Desde la promoción de salud mental hacia la promoción de salud: La concepción de lo comunitario en la implementación de proyectos sociales. Alteridad, 2(1), 28-40. (https://goo.gl/zDb3Me) (2017-01-29).

Books and Book Chapters

Full books: Cuéllar, J.C., & Moncada-Paredes, M.C. (2014). El peso de la deuda externa ecuatoriana. Quito: Abya-Yala.

Chaprter of book: Zambrano-Quiñones, D. (2015). El ecoturismo comunitario en Manglaralto y Colonche. En V.H. Torres (Ed.), Alternativas de Vida: Trece experiencias de desarrollo endógeno en Ecuador (pp. 175-198). Quito: Abya-Yala.

Digital media

Pérez-Rodríguez, M.A., Ramírez, A., & García-Ruíz, R. (2015). La competencia mediática en educación infantil. Análisis del nivel de desarrollo en España. Universitas Psychologica, 14(2), 619-630. http://dx.doi.org/10.11144/Javeriana.upsy14-2.cmei

It is prescriptive that all quotations that have DOI (Digital Object Identifier System) are reflected in the References (can be obtained at http://goo.gl/gfruh1). All journals and books that do not have DOI should appear with their respective link (in their online version, if they have it, shortened by Bitly: https://bitly.com/) and date of consultation in the indicated format.

Journal articles should be presented in English, except for those in Spanish and English, in which case it will be displayed in both languages

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using brackets. All web addresses submitted must be shortened in the manuscript, except for the DOI that must be in the indicated format (https://doi.org/XXX).

3.3. Epigraphs, Figures and Charts

The epigraphs of the body of the article will be numbered in Arabic. They should go without a full box of capital letters, neither underlined nor bold. The numbering must be a maximum of three levels: 1. / 1.1. / 1.1.1. A carriage return will be established at the end of each numbered epigraph.

The charts must be included in the text in Word format according to order of appearance, numbered in Arabic and subtitled with the description of the content.

The graphics or figures will be adjusted to the minimum number required and will be presented incorporated in the text, according to their order of appearance, numbered in Arabic and subtitled with the abbreviated description. Their quality should not be less than 300 dpi, and it may be necessary to have the graph in TIFF, PNG or JPEG format.

4. Submission Process

The receipt of articles is permanent, however, considering that the publication of the Sophia Journal is bi-annual, the manuscripts must be sent at least one period before the date stipulated in the corresponding Call.

The manuscripts must be sent through the OJS (Open Journal System) system of the journal, for which it is necessary that the author previously registers in the respective space (enter in the following link: http://sophia.ups.edu.ec/index.php/sophia/user/register, complete the form and follow each of the suggested steps).

The five documents that must be submitted are:

1. **Letter of introduction.** This document includes a declaration stating that the submitted manuscript is an original contribution, has not been submitted to or is under review by any other journal. It also includes the acceptance of the signing authors, allowing, if applicable, the editorial team of Sophia to make changes to the content, formal aspects, and style of the document following the journal's requirements after the manuscript review process. Additionally, the Letter of introduction or Presentation contains a Rights Transfer section (partial transfer of rights to the publisher) and a Conflict of Interest Declaration, in accordance with editorial guidelines. This document must be signed and submitted through the OJS system in the "Supplementary Files" section.

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2. **Cover Letter.** This letter should include the following information
Title. In Spanish in the first line, in letter Arial 14, with bold and centered, with a maximum of 85 characters with space. In English in the second line, in letter Arial 14, in italics and bold.
Full names and surnames of the authors. Organized in order of priority, a maximum of 3 authors are accepted per original, although there may be exceptions justified by the topic, its complexity and extent. When the subject matter is of significant relevance to the scientific community, involves complex categorical analysis within a specific field of knowledge, is developed by researchers from different countries and continents, and receives an outstanding evaluation from international peer reviewers. Each name must include the name of the institution in which he/she works as well as the city, country, email and ORCID number.
Abstract (Spanish) It will have a minimum length of 210 and a maximum of 220 words. It must include 1) Justification of the topic; 2) Objectives; 3) Methodology; 4) Main results; 5) Main conclusions. It must be impersonally written "The present paper analyzes..."
Abstract. Summary with all its components, translated into English and in cursive. Do not use automatic translation systems.
Keywords (Spanish): 6 standardized terms preferably of a single word and of the UNESCO and the Journal's Thesaurus separated by commas (,).
Keywords. The 6 terms above translated into English and separated by comma (,). Do not use automatic translation systems.
3. **Authorship Declaration (CRediT Taxonomy).** Applicable for articles written by multiple authors; this document details the contribution of each author to the manuscript submitted to Sophia, in accordance with the 14 aspects outlined by the CRediT Taxonomy. This document must be signed and submitted through the OJS system in the "Supplementary Files" section. It is necessary to use the format required by the journal.
4. **Artificial Intelligence (AI) Use Declaration.** This is the formal declaration made by the author(s) regarding the level of artificial intelligence (AI) used in the preparation of the manuscript, whether in parts or components of the document. It explains in detail, clearly, and precisely how this tool was utilized in the process and/or in the presentation of the research results. The document must be signed by the responsible author(s) and submitted through the OJS system of the journal.
5. **Manuscript** totally anonymized, according to the guidelines referred in precedence.
All authors must register with their credits on the OJS platform, although only one of them will be responsible for correspondence. No author can submit or have in review two manuscripts simultaneously, estimating an absence of four consecutive numbers (2 years).

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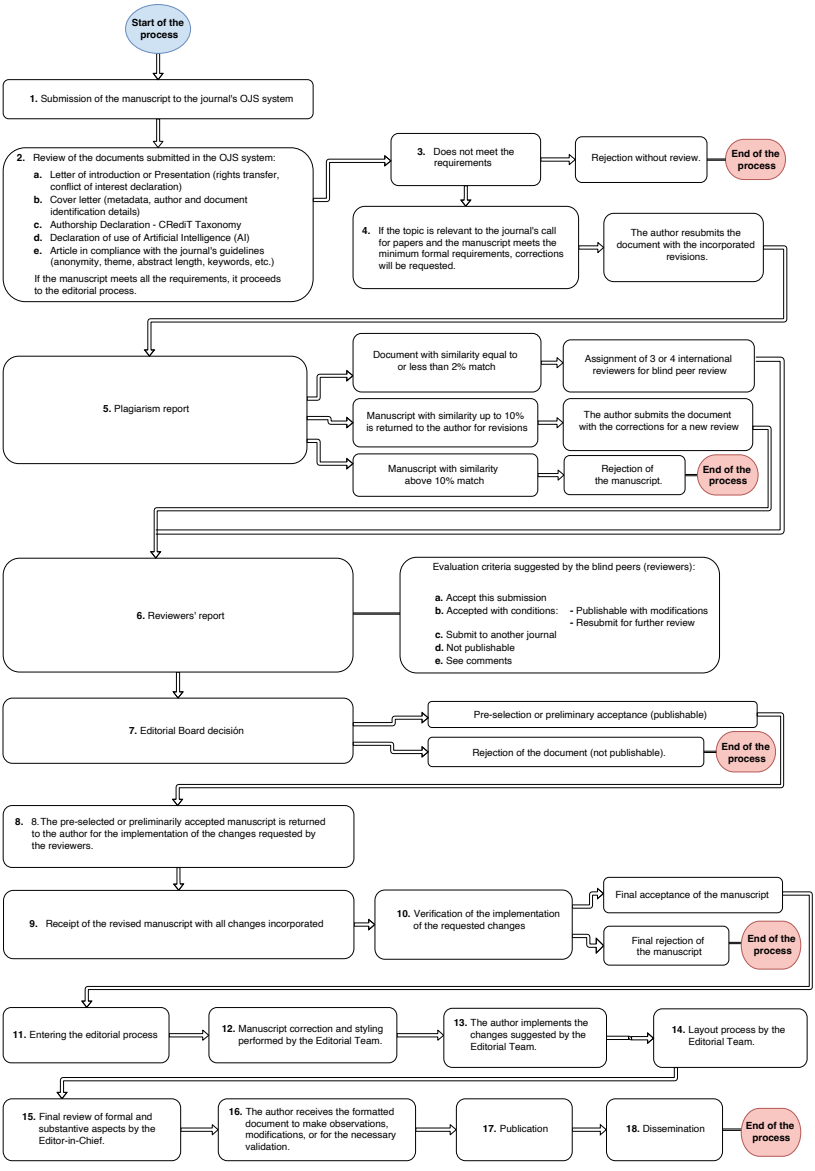
5. Article evaluation process



6. Publication interval

The font size and style as stated in section 4 (Submission Process). The interval between receipt and publication of an article is 7 months (210 days).

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Normas de Publicación en «Sophia»

ISSN: 1390-3861 / e-ISSN: 1390-8626

1. Información general

«Sophia» es una publicación científica de la Universidad Politécnica Salesiana de Ecuador, editada desde junio de 2006 de forma ininterrumpida, con periodicidad fija semestral, especializada en Filosofía de la Educación y sus líneas interdisciplinares como Epistemología, Deontología, Estética, Estudios Críticos, Hermenéutica, Axiología, Ontología, Antropología Filosófica, Sociología, Analítica Filosófica... vinculadas al ámbito de la educación.

Es una revista científica arbitrada, que utiliza el sistema de evaluación externa por expertos (*peer-review*), bajo metodología de pares ciegos (*doble-blind review*), conforme a las normas de publicación de la American Psychological Association (APA). El cumplimiento de este sistema permite garantizar a los autores un proceso de revisión objetivo, imparcial y transparente, lo que facilita a la publicación su inclusión en bases de datos, repositorios e indexaciones internacionales de referencia.

«Sophia» se encuentra indexada en **(SCOPUS)** Emerging Sources Citation Index **(ESCI)** de Web of Science; en Scientific Electronic Library Online **(SciELO)**; en el Sistema de Información Científica **(REDALYC)**; en el directorio y catálogo selectivo del Sistema Regional de Información en Línea para Revistas Científicas de América Latina, el Caribe, España y Portugal **(LATINDEX)**, en la Matríz de Información para el Análisis de Revistas **(MIAR)**, en Clasificación Integrada de Revistas Científicas **(C.I.R.C)**, en Academic Resource Index **(Research Bible)**, en la Red Iberoamericana de Innovación y Conocimiento Científico **(REDIB)**, en el Portal de difusión de la producción científica **(Dialnet)**; en Bibliografía Latinoamericana en Revistas de Investigación Científica y Social **(BIBLAT)**; en el Directorio de Revistas de Acceso Abierto **DOAJ** y en repositorios, bibliotecas y catálogos especializados de Iberoamérica.

La revista se edita en doble versión: impresa (ISSN: 1390-3861) y electrónica (e-ISSN: 1390-8626), en español y en inglés, siendo identificado además cada trabajo con un DOI (Digital Object Identifier System).

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2. Alcance y política

2.1. Temática

Contribuciones originales en materia de Filosofía de la Educación, así como áreas afines: Epistemología, Deontología, Estética, Estudios Críticos, Hermenéutica, Axiología, Ontología, Antropología Filosófica, Sociología, Analítica Filosófica,... y todas aquellas disciplinas conexas interdisciplinarmente con una reflexión filosófica sobre la educación.

2.2. Aportaciones

«Sophia» edita estudios críticos, informes, propuestas, así como selectas revisiones de la literatura (*state-of-the-art*) en relación con la Filosofía de la Educación, aceptando asimismo trabajos de investigación empírica, redactados en español y en inglés.

Las aportaciones en la revista pueden ser:

- **Revisiones:** 10.000 a 11.000 palabras de texto, sin incluir tablas y referencias. Se valorará especialmente las referencias justificadas, actuales y selectivas de alrededor de un mínimo de 60 obras.
- **Investigaciones:** 8.000 a 9.500 palabras de texto, sin incluir título, resúmenes, descriptores, tablas y referencias.
- **Informes, estudios y propuestas:** 8.000 a 9.500 palabras de texto, sin incluir título, resúmenes, tablas y referencias.

2.3. Características del contenido

Todos los trabajos presentados para la publicación en «Sophia» deberán cumplir con las características propias de una investigación científica:

- Ser originales, inéditos y relevantes.
- Abordar temáticas que respondan a problemáticas y necesidades actuales.
- Aportar para el desarrollo del conocimiento científico en el campo de la Filosofía de la Educación y sus áreas afines.
- Utilizar un lenguaje adecuado, claro, preciso y comprensible.
- No haber sido publicados en ningún medio ni estar en proceso de arbitraje o publicación.
- No ser resultado de trabajos de tesis, monografías y/o trabajos de titulación.
- No exceder el 2% de similitud con otros documentos.
- En caso de que corresponda, declarar de forma explícita y responsable el uso de herramientas de inteligencia artificial, asegurando que su aplicación se haya limitado a funciones de apoyo técnico

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o redacción, sin afectar la originalidad ni la autoría intelectual del manuscrito.

Dependiendo de la relevancia y pertinencia del artículo, se considerarán como contribuciones especiales y ocasionalmente se publicarán:

- Trabajos que superen la extensión manifestada.
- Artículos con más de tres autores cuando se trate de un tema relevante para la comunidad científica, complejo categorialmente dentro de un determinado campo del saber, elaborado por investigadores provenientes de distintos países y continentes, y con evaluación sobresaliente por parte de los revisores internacionales.
- Trabajos que no se correspondan con el tema objeto de la reflexión prevista para el número respectivo.

2.4 Periodicidad

«Sophia» tiene periodicidad semestral (20 artículos por año), publicada en los meses de enero y julio; y por número cuenta con dos secciones de cinco artículos cada una, la primera referida al tema central de carácter **Monográfico** debidamente preparado y, la segunda, una sección **Miscelánea**, compuesta por aportaciones variadas dentro de la temática de la publicación.

2.5 Transparencia, equidad y reconocimiento del aporte de los investigadores. Para promover la transparencia, la equidad y el reconocimiento adecuado de las contribuciones realizadas por cada uno de los colaboradores en la producción científica, la revista Sophia utiliza la **Taxonomía de roles de los colaboradores (CRediT).**

2.6 Integridad de la investigación. Para garantizar la integridad del proceso de investigación y la honestidad intelectual, Sophia declara el uso de Inteligencia Artificial (IA) con la finalidad de identificar el grado de intervención automatizada en la creación, en la redacción, en el análisis o en la revisión de contenidos. Esta declaratoria se convierte en un imperativo para delimitar la responsabilidad humana en la generación del contenido que será publicado por Sophia y para propiciar una cultura de apertura al uso de herramientas tecnológicas que median adecuadamente la producción científica. El uso declarado de la Inteligencia Artificial constituye un requisito para el avance ético y riguroso del conocimiento.

2.7 Retractación: En caso de que el autor de algún manuscrito ingresado en el ***Proceso de Evaluación*** en la *Revista Sophia: Colección de Filosofía de la Educación*, en el documento ***Declaración de uso de Inteligencia Artificial*** exigido como requisito por la revista, haya

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manifestado expresamente el no uso de Inteligencia Artificial y que a pesar de las revisiones ejecutadas en las distintas fases del proceso editorial hasta su publicación, por cualquier motivo involuntario no se haya detectado oportunamente aspectos de similitud, coincidencia, falsa o inapropiada información relacionados con la aplicación de inteligencia artificial en el documento y que posteriormente a la publicación del mismo se verifique el uso indebido de Inteligencia Artificial, la revista se reserva el derecho de sancionar al autor o autores del artículo con la **retractación** respectiva, esto implica el retiro del documento por parte de la revista, la renuncia a la afirmación expuesta por el autor o autores en el documento ***Declaración de uso de Inteligencia Artificial.*** El autor o los autores deberán **admitir públicamente el error y revocar lo declarado previamente.**

2.8 *Pagos:* Sophia no cobra por publicar. No hay ninguna cuota o pago por parte de los autores o lectores. El acceso a su contenido es totalmente gratuito. El procesamiento de los manuscritos y/o los materiales de publicación son patrocinados por la Universidad Politécnica Salesiana del Ecuador. Los autores están exentos de todo pago.

3. Presentación, estructura y envío de los manuscritos

Los trabajos se presentarán en tipo de letra Arial 12, interlineado simple, justificado completo y sin tabuladores ni espacios en blanco entre párrafos. Se separarán con un espacio en blanco los grandes bloques (título, autores, resúmenes, descriptores, créditos y epígrafes). La página debe tener 2 centímetros en todos sus márgenes.

Los trabajos deben presentarse en documento de Microsoft Word (.doc o .docx), siendo necesario que el archivo esté anonimizado en Propiedades de Archivo, de forma que no aparezca la identificación de autor/es.

Los manuscritos deben ser enviados única y exclusivamente a través del OJS (Open Journal System), en el cual todos los autores deben darse de alta previamente. No se aceptan originales enviados a través de correo electrónico u otra interfaz.

3.1. Estructura del manuscrito

Para aquellos trabajos que se traten de investigaciones de carácter empírico, los manuscritos seguirán la estructura IMRDC, siendo opcionales los epígrafes de Notas y Apoyos. Aquellos trabajos que por el contrario se traten de informes, estudios, propuestas y revisiones sistemáticas podrán ser más flexibles en sus epígrafes, especialmente en Material y métodos; Análisis y resultados;

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Discusión y conclusiones. En todas las tipologías de trabajos son obligatorias las Referencias.

a. Investigaciones empíricas

Su objetivo es contribuir al progreso del conocimiento mediante información original, sigue la estructura IMRDC: Introducción (objetivos, literatura previa), Materiales y métodos; Análisis y Resultados; Discusión, integración y conclusiones. Siguiendo los criterios planteados por la Unesco, este tipo de textos científicos se llaman también como: "memorias originales"

La estructura recomendada, especialmente en trabajos que incluyen investigaciones empíricas, es la siguiente:

1) Título (español) / Title (inglés): Conciso pero informativo, en castellano en primera línea y en inglés en segunda. Se aceptan como máximo 85 caracteres con espacio. El título no solo es responsabilidad de los autores, pudiéndose proponer cambios por parte del Consejo Editorial.

2) Datos de Identificación: Nombres y apellidos completos de cada uno de los autores, organizados por orden de prelación. Se aceptarán como máximo 3 autores por original, aunque pudieren existir excepciones justificadas por el tema, su complejidad y extensión. Cuando se trate de un tema relevante para la comunidad científica, complejo categorialmente dentro de un determinado campo del saber, elaborado por investigadores provenientes de distintos países y continentes, y con evaluación sobresaliente por parte de los revisores internacionales. Junto a los nombres deberá incluirse, el nombre de la institución en la que trabaja así como la ciudad, el país, el correo electrónico y número completo de ORCID de cada autor aspectos que deberán constar de modo obligatorio en la Carta de Presentación, además deberán ser cargados en el sistema OJS de la revista, en la sección Metadatos y/o en un documento word adjunto al archivo que contiene el trabajo que se propone para la evaluación.

3) Resumen (español) / Abstract (inglés): Tendrá como extensión mínima de 210 y máxima de 220 palabras en español; y de 200 y máximo de 210 palabras en inglés. El resumen describirá de forma concisa y en este orden: 1) Justificación del tema; 2) Objetivos; 3) Metodología y muestra; 4) Principales resultados; 5) Principales conclusiones. Ha de estar escrito de manera impersonal "El presente trabajo analiza...". En el caso del abstract no se admitirá el empleo de traductores automáticos por su pésima calidad.

4) Descriptores (español) / Keywords (inglés): Se deben exponer máximo 6 términos por cada versión idiomática relacionados directamente con el tema del trabajo. Será valorado positivamente el uso de las palabras claves expuestas en el Thesaurus de la UNESCO y en el de la propia revista localizado en el siguiente enlace: https://sophia.ups.edu.ec/tesauro_sophia.php

5) Introducción y estado de la cuestión: Debe incluir el planteamiento del problema, el contexto de la problemática, la justificación, fundamentos y

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propósito del estudio, utilizando citas bibliográficas, así como la literatura más significativa y actual del tema a escala nacional e internacional.

6) Material y métodos: Debe ser redactado de forma que el lector pueda comprender con facilidad el desarrollo de la investigación. En su caso, describirá la metodología, la muestra y la forma de muestreo, así como se hará referencia al tipo de análisis estadístico empleado. Si se trata de una metodología original, es necesario exponer las razones que han conducido a su empleo y describir sus posibles limitaciones.

7) Análisis y resultados: Se procurará resaltar las observaciones más importantes, describiéndose, sin hacer juicios de valor, el material y métodos empleados. Aparecerán en una secuencia lógica en el texto y las tablas y figuras imprescindibles evitando la duplicidad de datos.

8) Discusión y conclusiones: Resumirá los hallazgos más importantes, relacionando las propias observaciones con estudios de interés, señalando aportaciones y limitaciones, sin redundar datos ya comentados en otros apartados. Asimismo, el apartado de discusión y conclusiones debe incluir las deducciones y líneas para futuras investigaciones.

9) Apoyos y agradecimientos (opcionales): El Council Science Editors recomienda a los autor/es especificar la fuente de financiación de la investigación. Se considerarán prioritarios los trabajos con aval de proyectos competitivos nacionales e internacionales. En todo caso, para la valoración científica del manuscrito, este debe ir anonimizado con XXXX solo para su evaluación inicial, a fin de no identificar autores y equipos de investigación, que deben ser explicitados en la Carta de Presentación y posteriormente en el manuscrito final.

10) Las notas (opcionales) irán, solo en caso necesario, al final del artículo (antes de las referencias). Deben anotarse manualmente, ya que el sistema de notas al pie o al final de Word no es reconocido por los sistemas de maquetación. Los números de notas se colocan en superíndice, tanto en el texto como en la nota final. No se permiten notas que recojan citas bibliográficas simples (sin comentarios), pues éstas deben ir en las referencias.

11) Referencias: Las citas bibliográficas deben reseñarse en forma de referencias al texto. Bajo ningún caso deben incluirse referencias no citadas en el texto. Su número debe ser suficiente para contextualizar el marco teórico con criterios de actualidad e importancia. Se presentarán alfabéticamente por el primer apellido del autor.

b. Revisiones

Las revisiones de literatura se basan en el análisis de las principales publicaciones sobre un tema determinado; su objetivo es definir el estado actual del problema y evaluar las investigaciones realizadas. Su estructura responde a las fases del tema/problema, aportes de investigadores o equipos, cambios en la teoría o las corrientes teóricas principales; problemas sin resolver; tendencias actuales y futuras (Giordanino, 2011). De acuerdo con la UNESCO, este tipo de trabajos se conocen también como: "estudios recapitulativos"

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1) Título (español) / Title (inglés): El título del artículo deberá ser breve, interesante, claro, preciso y atractivo para despertar el interés del lector. Conciso pero informativo, en castellano en la primera línea y en inglés en la segunda línea. Se aceptan como máximo 85 caracteres con espacio. El título no solo es responsabilidad de los autores, también los Miembros del Consejo Editorial puede proponer cambios al título del documento.

2) Datos de Identificación: Nombres y apellidos completos de cada uno de los autores, organizados por orden de prelación. Se aceptarán como máximo 3 autores por original, aunque pudieren existir excepciones justificadas por el tema, su complejidad y extensión. Cuando se trate de un tema relevante para la comunidad científica, complejo categorialmente dentro de un determinado campo del saber, elaborado por investigadores provenientes de distintos países y continentes, y con evaluación sobresaliente por parte de los revisores internacionales. Junto a cada nombre deberá incluirse, el nombre de la institución en la que trabaja así como la ciudad, el país, el correo electrónico y número completo de ORCID de cada autor aspectos que deberán constar de modo obligatorio en la Carta de Presentación, además deberán ser cargados en el sistema OJS de la revista, en la sección Metadatos y/o en un documento word adjunto al archivo que contiene el trabajo que se propone para la evaluación.

3) Resumen (español) / Abstract (inglés): Tendrá como extensión mínima de 210 y máxima de 220 palabras en español; y de 200 y máximo de 210 palabras en inglés. El resumen describirá de forma concisa y en este orden: 1) Justificación del tema; 2) Objetivos; 3) Metodología; 4) Principales resultados; 5) Principales conclusiones. Ha de estar escrito de manera impersonal "El presente trabajo analiza...". En el caso del abstract no se admitirá el empleo de traductores automáticos por su pésima calidad.

4) Descriptores (español) / Keywords (inglés): Se deben exponer máximo 6 términos por cada versión idiomática relacionados directamente con el tema del trabajo. Será valorado positivamente el uso de las palabras claves expuestas en el Thesaurus de la UNESCO y en el de la propia revista.

5) Introducción: Deberá incluir una presentación breve del tema, la formulación del propósito u objetivo del estudio, el contexto de la problemática y la formulación del problema que se propone enfrentar, la presentación de la idea a defender, la justificación que explica la importancia, la actualidad y la pertinencia del estudio; el marco metodológico utilizado, y finalmente, una breve descripción de la estructura del documento. En la justificación es necesario utilizar citas bibliográficas así como la literatura más significativa y actual del tema a escala nacional e internacional.

6) Cuerpo o desarrollo del documento: Implica poner en práctica a lo largo de toda la exposición, una actitud crítica que deberá tender hacia la interpelación, a efectos de concitar la atención del tema y el problema tratados. El escritor deberá generar en el lector la capacidad de identificar la intención dialógica de la propuesta y potenciar en el una discusión abierta.

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7) Conclusiones: Expone de manera objetiva los resultados y hallazgos; ofrece una visión de las implicaciones del trabajo, las limitaciones, la respuesta tentativa al problema, las relaciones con el objetivo de la investigación y las posibles líneas de continuidad (para cumplir con este objetivo se sugiere no incluir todos los resultados obtenidos en la investigación). Las conclusiones deberán ser debidamente justificadas de acuerdo con la investigación realizada. Las conclusiones podrán estar asociadas con las recomendaciones, evaluaciones, aplicaciones, sugerencias, nuevas relaciones e hipótesis aceptadas o rechazadas.

8) Bibliografía: Es el conjunto de obras utilizadas en la estructuración del texto científico. Deberá incluir únicamente la referencia de los trabajos utilizados en la investigación. Las referencias bibliográficas deberán ordenarse alfabéticamente y ajustarse a las normas internacionales APA, en su sexta edición.

3.2. Normas para las referencias

Publicaciones periódicas

Artículo de revista (un autor): Valdés-Pérez, D. (2016). Incidencia de las técnicas de gestión en la mejora de decisiones administrativas [Impact of Management Techniques on the Improvement of Administrative Decisions]. *Retos, 12*(6), 199-2013. https://doi.org/10.17163/ret.n12.2016.05

Artículo de revista (hasta seis autores): Ospina, M.C., Alvarado, S.V., Fefferman, M., & Llanos, D. (2016). Introducción del dossier temático "Infancias y juventudes: violencias, conflictos, memorias y procesos de construcción de paz" [Introduction of the thematic dossier "Infancy and Youth: Violence, Conflicts, Memories and Peace Construction Processes"]. *Universitas, 25*(14), 91-95. https://doi.org/10.17163/uni.n25.%25x

Artículo de revista (más de seis autores): Smith, S.W., Smith, S.L. Pieper, K.M., Yoo, J.H., Ferrys, A.L., Downs, E.,... Bowden, B. (2006). Altruism on American Television: Examining the Amount of, and Context Surronding. Acts of Helping and Sharing. *Journal of Communication, 56*(4), 707-727. https://doi.org/10.1111/j.1460-2466.2006.00316.x

Artículo de revista (sin DOI): Rodríguez, A. (2007). Desde la promoción de salud mental hacia la promoción de salud: La concepción de lo comunitario en la implementación de proyectos sociales. *Alteridad, 2*(1), 28-40. (https://goo.gl/zDb3Me) (2017-01-29).

Libros y capítulos de libro

Libros completos: Cuéllar, J.C., & Moncada-Paredes, M.C. (2014). *El peso de la deuda externa ecuatoriana*. Quito: Abya-Yala.

Capítulos de libro: Zambrano-Quiñones, D. (2015). *El ecoturismo comunitario en Manglaralto y Colonche*. En V.H. Torres (Ed.), Alternativas de Vida: Trece experiencias de desarrollo endógeno en Ecuador (pp. 175-198). Quito: Abya-Yala.

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Medios electrónicos

> Pérez-Rodríguez, M.A., Ramírez, A., & García-Ruíz, R. (2015). La competencia mediática en educación infantil. Análisis del nivel de desarrollo en España. Universitas Psychologica, 14(2), 619-630. https://doi.org/10.11144/Javeriana.upsy14-2.cmei

Es prescriptivo que todas las citas que cuenten con DOI (Digital Object Identifier System) estén reflejadas en las Referencias (pueden obtenerse en http://goo.gl/gfruh1). Todas las revistas y libros que no tengan DOI deben aparecer con su link (en su versión on-line, en caso de que la tengan, acortada, mediante Bitly: https://bitly.com/ y fecha de consulta en el formato indicado.

Los artículos de revistas deben ser expuestos en idioma inglés, a excepción de aquellos que se encuentren en español e inglés, caso en el que se expondrá en ambos idiomas utilizando corchetes. Todas las direcciones web que se presenten tienen que ser acortadas en el manuscrito, a excepción de los DOI que deben ir en el formato indicado (https://doi.org/XXX).

3.3. Epígrafes, tablas y gráficos

Los epígrafes del cuerpo del artículo se numerarán en arábigo. Irán sin caja completa de mayúsculas, ni subrayados, ni negritas. La numeración ha de ser como máximo de tres niveles: 1. / 1.1. / 1.1.1. Al final de cada epígrafe numerado se establecerá un retorno de carro.

Las tablas deben presentarse incluidas en el texto en formato Word según orden de aparición, numeradas en arábigo y subtituladas con la descripción del contenido.

Los gráficos o figuras se ajustarán al número mínimo necesario y se presentarán incorporadas al texto, según su orden de aparición, numeradas en arábigo y subtituladas con la descripción abreviada. Su calidad no debe ser inferior a 300 ppp, pudiendo ser necesario contar con el gráfico en formato TIFF, PNG o JPEG.

4. Proceso de envío

La recepción de artículos es permanente, sin embargo, considerando que la publicación de la Revista Sophia es semestral, el envío de los manuscritos deberá efectuarse al menos un período antes de la fecha estipulada en la Convocatoria correspondiente.

Los manuscritos deberán remitirse a través del sistema OJS (Open Journal System) de la revista, para lo cual es necesario que el autor se registre previamente en el espacio respectivo (ingrese en el siguiente link: http://sophia.ups.edu.ec/index.php/sophia/user/register, complemente el formulario y siga cada uno de los pasos que se sugieren).

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Los cinco documentos que deben ser enviados son:

1. **Carta de Presentación.** Contiene la Declaración en la que se explica que el manuscrito enviado es una aportación original, que no ha sido enviado ni se encuentra en proceso de evaluación en otra revista. Consta la aceptación de las autorías firmantes, para que, en caso de ser procedente, luego del proceso de revisión del manuscrito, el equipo de redacción de Sophia, realice la introducción de cambios en el contenido, en aspectos formales y en el estilo del documento conforme a las exigencias de la Revista. Adicionalmente, la Carta de Presentación contiene el apartado de Cesión de Derechos (cesión parcial de derechos a la editorial) y la Declaración de conflicto de intereses, de acuerdo con las normas editoriales. Este documento deberá ser firmado y consignado a través del sistema OJS, en la sección: **"Ficheros complementarios"**.
2. **Cover Letter.** En la que se consigna la siguiente información:
   Título. En castellano en la primera línea, en letra Arial 14, con negrita y centrado, con un máximo de 85 caracteres con espacio. En inglés en la segunda línea, en letra Arial 14, en cursiva y con negrita.
   Nombres y apellidos completos de los autores. Organizados por orden de prelación, se aceptan como máximo 3 autores por original, aunque pudieren existir excepciones justificadas por el tema, su complejidad y extensión. Cuando se trate de un tema relevante para la comunidad científica, complejo categorialmente dentro de un determinado campo del saber, elaborado por investigadores provenientes de distintos países y continentes, y con evaluación sobresaliente por parte de los revisores internacionales. Junto a cada uno de los nombres deberá incluirse, el nombre de la institución en la que trabaja así como la ciudad, el país, el correo electrónico y número de ORCID.
   Resumen. Tendrá como extensión mínima 210 y máxima 220 palabras. El resumen describirá de forma concisa y en este orden: 1) Justificación del tema; 2) Objetivos; 3) Metodología; 4) Principales resultados; 5) Principales conclusiones. Ha de estar escrito de manera impersonal "El presente trabajo analiza...".
   Abstract. Resumen con todos sus componentes, traducido al inglés y en letra cursiva. No utilizar sistemas de traducción automáticos.
   Descriptores. Máximo 6 términos estandarizados preferiblemente de una sola palabra y del Thesaurus de la UNESCO y de la propia revista, separados por coma (,).
   Keywords. Los 6 términos antes referidos traducidos al inglés y separados por coma (,). No utilizar sistemas de traducción automáticos.

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3. **Declaración de Autoría (Taxonomía CRediT).** Aplicable para los casos de artículos elaborados por varios autores; detalla la contribución realizada por cada uno de los autores del documento presentado a Sophia, en concordancia con los 14 aspectos descritos según la Taxonomía CRediT. Este documento deberá ser firmado y consignado a través del sistema OJS, en la sección: **"Ficheros complementarios".** Es necesario utilizar el formato exigido por la Revista.
4. **Declaración de Uso de Inteligencia Artificial (IA).** Consiste en la Declaración formal que el/los autor/es realiza/n acerca del nivel de uso de inteligencia artificial (IA) en la elaboración, en partes o en componentes del documento presentado; explica de manera detallada, clara y precisa la forma en que dicha herramienta fue utilizada en el proceso y/o en la presentación de los resultados de la investigación. El documento debe estar respaldado con la/s firma/s de responsabilidad correspondientes y deberá ser consignado a través del sistema OJS de la Revista.
5. **Manuscrito** totalmente anonimizado, conforme a las normas referidas en precedencia.
   Todos los autores han de darse de alta, con sus créditos, en la plataforma OJS, si bien uno solo de ellos será el responsable de correspondencia. Ningún autor podrá enviar o tener en revisión dos manuscritos de forma simultánea, estimándose una carencia de cuatro números consecutivos (2 años).

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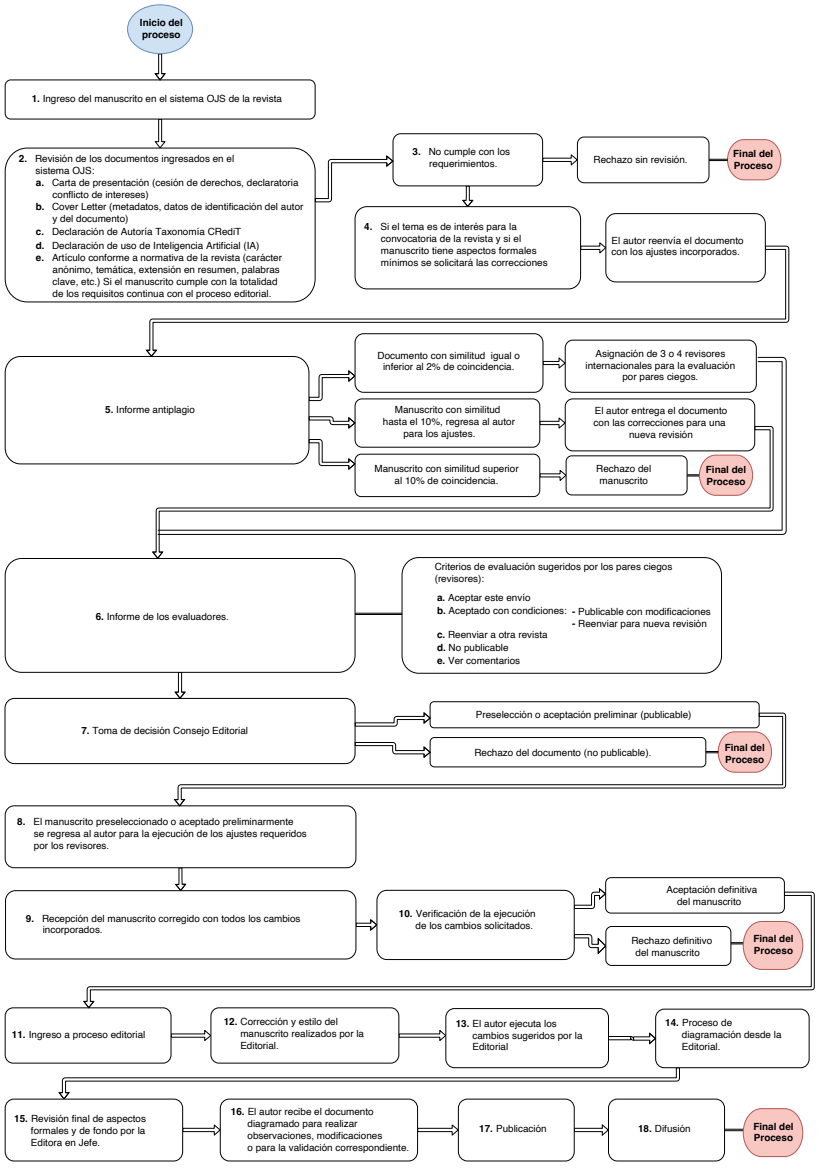
5. Proceso de evaluación del artículo



6. Intervalo de publicación

El intervalo comprendido entre la recepción y la publicación de un artículo es de 7 meses (210 días).

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Indications for External Reviewers of «Sophia»

The **Board of External Reviewers of «Sophia»** is an independent collegiate body whose purpose is to guarantee the excellence of this scientific publication, because the blind evaluation - based exclusively on the quality of the contents of the manuscripts and carried out by experts of recognized International prestige in the field - is, without a doubt, the best guarantee for the advancement of science and to preserve in this header an original and valuable scientific production.

To this end, the **Board of External Reviewers** is made up of several scholars and international scientists specialized in **Education**, essential to select the articles of the greatest impact and interest for the international scientific community. This in turn allows that all the articles selected to publish in «**Sophia**» have an academic endorsement and objectifiable reports on the originals.

Of course, all reviews in «**Sophia**» use the internationally standardized system of double-blind peer evaluation that guarantees the anonymity of manuscripts and reviewers. As a measure of transparency, the complete lists of reviewers are published on the official website of the journal (http://Sophia.ups.edu.ec/)

1. Criteria for acceptance/rejection of manuscript evaluation

The editorial team of «**Sophia**» selects those that are considered more qualified in the subject of the manuscript from the list of reviewers of the Board of Reviewers. While the publication requires the maximum collaboration of reviewers to expedite the evaluations and reports on each original, acceptance of the review must be linked to:

a. **Expertise**. Acceptance necessarily entails the possession of competences in the specific theme of the article to be evaluated.
b. **Availability**. Reviewing an original takes time and involves careful reflection on many aspects.
c. **Conflict of interests**. In case of identification of the authorship of the manuscript (despite their anonymity), excessive academic or family closeness to their authors, membership in the same University, Department, Research Group, Thematic Network, Research Projects, joint publications with authors... or any other type of connection or conflict / professional proximity; The reviewer must reject the publisher's invitation for review.
d. **Commitment of confidentiality.** Reception of a manuscript for evaluation requires the Reviewer to express a commitment of confidentiality, so that it cannot be divulged to a third party throughout the process.

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In the event that the reviewer cannot carry out the activity for some of these reasons or other justifiable reasons, he/she must notify the publisher by the same route that he/she has received the invitation, specifying the reasons for rejection.

2. General criteria for the evaluation of manuscripts

a) Topic

In addition to being valuable and relevant to the scientific community, the topic that is presented in the original must be limited and specialized in time and space, without excessive localism.

b) Redaction

The critical assessment in the review report must be objectively written, providing content, quotes or references of interest to support its judgment.

c) Originality

As a fundamental criterion of quality, an article must be original, unpublished and suitable. In this sense, reviewers should answer these three questions in the evaluation:

- Is the article sufficiently novel and interesting to justify publication?
- Does it contribute anything to the knowledge canon?
- Is the research question relevant?

A quick literature search using repositories such as Web of Knowledge, Scopus and Google Scholar to see if the research has been previously covered, may be helpful.

d) Structure

Manuscripts that refer to «Sophia» must follow the IMRDC structure, except those that are literature reviews or specific studies. In this sense, the originals must contain summary, introduction, methodology, results, discussion and conclusion.

- The **title, abstract, and keywords** should accurately describe the content of the article.
- The **review of the literature** should summarize the state of the question of the most recent and adequate research for the presented work. It will be especially evaluated with criteria of suitability and that the references are to works of high impact - especially in WoS,

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Scopus, Scielo, etc. It should also include the general explanation of the study, its central objective and the followed methodological design.

- In case of research, in the **materials and methods**, the author must specify how the data, the process and the instruments used to respond to the hypothesis, the validation system, and all the information necessary to replicate the study are collected.
- **Results** must be clearly specified in logical sequence. It is important to check if the figures or charts presented are necessary or, if not, redundant with the content of the text.
- In the **discussion**, the data obtained should be interpreted in the light of the literature review. Authors should include here if their article supports or contradicts previous theories. The conclusions will summarize the advances that the research presents in the area of scientific knowledge, the future lines of research and the main difficulties or limitations for carrying out the research.
- **Language**: It will be positively assessed if the language used facilitates reading and is in favor of the clarity, simplicity, precision and transparency of the scientific language. The Reviewer should not proceed to correction, either in Spanish or English, but will inform the Editors of these grammatical or orthographical and typographical errors.
- Finally, a thorough **review of the references** is required in case any relevant work has been omitted. The references must be precise, citing within the logic of the subject at study, its main works as well as the documents that most resemble the work itself, as well as the latest research in the area.

3. Relevant valuation dimensions

For the case of empirical research articles**,** «**Sophia**» uses an evaluation matrix of each original that responds to the editorial criteria and to compliance with the publication guidelines. In this sense, the reviewers must attend to the qualitative-quantitative assessment of each of the aspects proposed in this matrix with criteria of objectivity, reasoning, logic and expertise.

If the original is a review of the literature (status of the matter) or other type of study (reports, proposals, experiences, among others), the Editorial Board will send to the reviewers a different matrix, including the characteristics of Structure of this type of originals:

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STUDIES, REPORTS, PROPOSALS AND REVIEW	
Valuable items	**Score**
01. Relevancy of the title (clarity, precision and with a maximum of 85 characters).	0/5
02. They summarize (In an alone paragraph and without epigraphs, minimum / minimal: 210-220 words).	0/5
03. Introduction (brief presentation of the topic; formulation of the problem; it designs to defending or hypothesis to demonstrating; I target; importance of the topic; current importance; methodology; structure of the document).	0/5
04. Review of the bibliographical foundation (Beside using current bibliography to consider the incorporation of Sophia's documents).	0/10
05. Structure and organization of the article (argumentative capabilities, coherence and scientific redaction).	0/10
06. Original contributions and contextualized analyses.	0/5
07. Conclusions that answer to the topic, to the problem and to the raised aim.	0/5
08. Citations and references of agreement to the regulation and to the format requested by the magazine (Any document and author who consists in the section of bibliography must consist in the body of story and viceversa).	0/5
Maximun total	50 points

RESEARCHES	
Valuable items	**Score**
01. Relevancy of the title (clarity, precision and with a maximum of 85 characters).	0/5
02. They summarize (In an alone paragraph and without epigraphs, minimum / minimal: 210-220 words).	0/5
03. Introduction (brief presentation of the topic; formulation of the problem; it designs to defending or hypothesis to demonstrating; I target; importance of the topic; current importance; methodology; structure of the document).	0/5
04. Review of the bibliographical foundation (Beside using current bibliography to consider the incorporation of Sophia's documents). Methodological rigorous and presentation of instruments of investigation.	0/10

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RESEARCHES	
Valuable items	**Score**
05. Structure and organization of the article (argumentative capabilities, coherence and scientific redaction). Analysis and results of investigation with logical sequence in the text. Presentation of tables and figures without duplicity of information.	0/10
06. Original contributions and contextualized analyses of the information.	0/5
07. Discussion, conclusions and advances that answer to the topic, to the problem and to the raised aim.	0/5
08. Citations and references of agreement to the regulation and to the format requested by the magazine (Any document and author who consists in the section of bibliography must consist in the body of story and vice versa).	0/5
Total	50 points

4. Ethical issues

a. **Plagiarism:** Although the journal uses plagiarism detection systems, if the reviewer suspects that an original is a substantial copy of another work, he must immediately inform the Editors citing the previous work in as much detail as possible.
b. **Fraud:** If there is real or remote suspicion that the results in an article are false or fraudulent, it is necessary to inform them to the Editors.
c. **Omitting the author declaration:** In the article, it is necessary to acknowledge the contributions made by each author according to their level of involvement.
d. **Conflicts of interest:** In order to ensure transparency and objectivity in the work, any potential conflict of interest that may influence the results or interpretation of the research must be declared.
e. **Ethical consent and respect for participants:** When the article involves human or animal subjects, the authors must have obtained the relevant ethical permissions and ensure that the research has been conducted in accordance with established ethical principles, respecting the privacy and well-being of the participants.
f. **Transparency in the use of artificial intelligence (AI):** In cases where AI has been used in the research, the authors must declare its use, clearly and precisely specifying how it has been employed, describing the algorithms, tools, and techniques used, as well as the

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data, parts, or sections developed with the support of the tool, following the applicable ethical guidelines.

g. **Data access and replicability:** The authors must ensure that the data used in the research is accessible for verification and replication, promoting transparency and reproducibility of the results.

5. Evaluation of the originals

After completing the quantitative and qualitative evaluation of the manuscript under review, the reviewer may propose recommendations aimed at improving the quality of the original text. The manuscript will be graded according to the following four options

1. **Accept this submission.** The topic, content, and structure align with the themes outlined in the call for papers and are related to the journal's research areas.
2. **Accepted with conditions.** The article is interesting; however, it does not meet some formal requirements set by the journal to proceed with the editorial process. It is necessary to clearly identify the components that need improvement, list the comments, and specify the paragraphs and pages where modifications are suggested. This criterion involves two aspects: a. Publishable with modifications; and b. Resubmit for further review.
3. **Submit to another journal.** This criterion applies when the topic is interesting, the document is well-structured, but it does not align with the nature and research areas of the journal.
4. **Not publishable.** The article is rejected due to the identified deficiencies, which are justified and reasoned with both qualitative and quantitative evaluation. If the quantitative evaluation scores less than 35 out of 50 points, the report must be detailed and explain the reasons for rejection.

All the above criteria include a comments section, represented by the phrase: See comments.

6.Article Retraction

An article may be retracted from *Sophia: Collection of Philosophy of Education* if, after its publication, the improper use of Artificial Intelligence (AI) tools is verified and was not disclosed by the author(s) in the required AI Usage Declaration submitted during the editorial process.

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Even if the manuscript successfully passed all editorial review stages without the timely detection of similarities, overlaps, or inappropriate content related to automated assistance, if it is later confirmed that there was undeclared AI intervention in the creation, writing, analysis, or review of the text, the journal reserves the right to officially retract the article.

Such retraction entails the removal of the published document, the nullification of the original statement made by the authors, and the requirement that the authors publicly acknowledge the error and formally revoke their prior declaration.

This measure reflects *Sophia*'s firm commitment to academic integrity, objectivity and rigor in manuscript evaluation, publication quality, scientific transparency, and the ethical advancement of knowledge.

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Indicaciones para revisores externos de «Sophia»

El **Consejo de Revisores Externos de «Sophia»** es un órgano colegiado independiente cuyo fin es garantizar la excelencia de esta publicación científica, debido a que la evaluación ciega —basada exclusivamente en la calidad de los contenidos de los manuscritos y realizada por expertos de reconocido prestigio internacional en la materia— es la mejor garantía y, sin duda, el mejor aval para el avance de la ciencia y para preservar en esta cabecera una producción científica original y valiosa.

Para ello, el **Consejo de Revisores Externos** está conformado por diversos académicos y científicos internacionales especialistas en **Filosofía de la Educación**, esenciales para seleccionar los artículos de mayor impacto e interés para la comunidad científica internacional. Esto permite a su vez que todos los artículos seleccionados para publicar en «**Sophia**» cuenten con un aval académico e informes objetivables sobre los originales.

Por supuesto, todas las revisiones en «**Sophia**» emplean el sistema estandarizado internacionalmente de evaluación por pares con «doble ciego» (*doble-blind*) que garantiza el anonimato de los manuscritos y de los revisores de los mismos. Como medida de transparencia, anualmente se hacen públicos en la web oficial de la revista (http://Sophia.ups.edu.ec/) los listados completos de los revisores.

1. Criterios de aceptación/rechazo de evaluación manuscritos

El equipo editorial de «**Sophia**» selecciona del listado de evaluadores del Consejo de Revisores a aquellos que se estiman más cualificado en la temática del manuscrito. Si bien por parte de la publicación se pide la máxima colaboración de los revisores para agilizar las evaluaciones y los informes sobre cada original, la aceptación de la revisión ha de estar vinculada a:

a. **Experticia.** La aceptación conlleva necesariamente la posesión de competencias en la temática concreta del artículo a evaluar.
b. **Disponibilidad**. Revisar un original exige tiempo y conlleva reflexión concienzuda de muchos aspectos.
c. **Conflicto de intereses.** En caso de identificación de la autoría del manuscrito (a pesar de su anonimato), excesiva cercanía académica o familiar a sus autores, pertenencia a la misma Universidad, Departamento, Grupo de Investigación, Red Temática, Proyectos de Investigación, publicaciones conjuntas con los autores... o cualquier otro tipo de conexión o conflicto/cercanía profesional; el revisor debe rechazar la invitación del editor para su revisión.
d. **Compromiso de confidencialidad**. La recepción de un manuscrito para su evaluación exige del Revisor un compromiso expreso de

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confidencialidad, de manera que éste no puede, durante todo el proceso, ser divulgado a un tercero.

En caso que el revisor no pueda llevar a cabo la actividad por algunos de estos motivos u otros justificables, debe notificarlo al editor por la misma vía que ha recibido la invitación, especificando los motivos de rechazo.

2. Criterios generales de evaluación de manuscritos

a) Tema

La temática que se plantea en el original, además de ser valiosa y relevante para la comunidad científica, ha de ser limitada y especializada en tiempo y espacio, sin llegar al excesivo localismo.

b) Redacción

La valoración crítica en el informe de revisión ha de estar redactada de forma objetiva, aportando contenido, citas o referencias de interés para argumentar su juicio.

c) Originalidad

Como criterio de calidad fundamental, un artículo debe ser original, inédito e idóneo. En este sentido, los revisores deben responder a estas tres preguntas en la evaluación:

- ¿Es el artículo suficientemente novedoso e interesante para justificar su publicación?
- ¿Aporta algo al canon del conocimiento?
- ¿Es relevante la pregunta de investigación?

Una búsqueda rápida de literatura utilizando repositorios tales como Web of Knowledge, Scopus y Google Scholar para ver si la investigación ha sido cubierta previamente puede ser de utilidad.

d) Estructura

Los manuscritos que se remiten a «**Sophia**» deben seguir la estructura señalada en las normas de publicación tanto para las investigaciones empíricas como para revisiones de la literatura o estudios específicos. En este sentido, los originales han de contener resumen, introducción, metodología, resultados, discusión y conclusión.

- El título, el resumen y las palabras clave han de describir exactamente el contenido del artículo.

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- La revisión de la literatura debe resumir el estado de la cuestión de las investigaciones más recientes y adecuadas para el trabajo presentado. Se valorará especialmente con criterios de idoneidad y que las referencias sean a trabajos de alto impacto —especialmente en WoS, Scopus, Scielo, etc. Debe incluir además la explicación general del estudio, su objetivo central y el diseño metodológico seguido.
- En caso de investigaciones, en los materiales y métodos, el autor debe precisar cómo se recopilan los datos, el proceso y los instrumentos usados para responder a las hipótesis, el sistema de validación, y toda la información necesaria para replicar el estudio.
- En los resultados se deben especificar claramente los hallazgos en secuencia lógica. Es importante revisar si las tablas o cuadros presentados son necesarios o, caso contrario, redundantes con el contenido del texto.
- En la discusión se deben interpretar los datos obtenidos a la luz de la revisión de la literatura. Los autores deberán incluir aquí si su artículo apoya o contradice las teorías previas. Las conclusiones resumirán los avances que la investigación plantea en el área del conocimiento científico, las futuras líneas de investigación y las principales dificultades o limitaciones para la realización de la investigación.
- Idioma: Se valorará positivamente si el idioma utilizado facilita la lectura y va en favor de la claridad, sencillez, precisión y transparencia del lenguaje científico. El Revisor no debe proceder a corrección, ya sea en español o inglés, sino que informará a los Editores de estos errores gramaticales u ortotipográficos.
- Finalmente, se requiere una profunda revisión de las referencias por si se hubiera omitido alguna obra relevante. Las referencias han de ser precisas, citando en la lógica de la temática a estudiar, sus principales obras así como los documentos que más se asemejen al propio trabajo, así como las últimas investigaciones en el área.

3. Dimensiones relevantes de valoración

Para el caso de artículos de investigaciones empíricas, «**Sophia**» utiliza una matriz de evaluación de cada original que responde a los criterios editoriales y al cumplimiento de la normativa de la publicación. En este sentido los revisores deberán atender a la valoración cuali-cuantitativa de cada uno de los aspectos propuestos en esta matriz con criterios de objetividad, razonamiento, lógica y experticia.

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Para el caso de artículos reflexivos, estudios, revisiones de literatura (estado de la cuestión) u otro tipo de estudio (informes, propuestas, experiencias, entre otras), el Consejo Editorial remitirá a los revisores una matriz distinta, comprendiendo las características propias de estructura de este tipo de originales:

ESTUDIOS, PROPUESTAS, INFORMES Y EXPERIENCIAS	
Ítems valorables	**Puntaje**
01. Pertinencia del título (claridad, precisión y con un máximo de 85 caracteres).	0/5
02. Resumen (En un solo párrafo y sin epígrafes, mínimo/máximo: 210-220 palabras).	0/5
03. Introducción (breve presentación del tema; formulación del problema; idea a defender o hipótesis a demostrar; objetivo; importancia del tema; actualidad; metodología; estructura del documento).	0/5
04. Revisión de la fundamentación bibliográfica (Además de usar bibliografía actual considerar la inclusión de documentos de Sophia).	0/10
05. Estructura y organización del artículo (capacidad argumentativa, coherencia y redacción científica).	0/10
06. Aportaciones originales y análisis contextualizados.	0/5
07. Conclusiones que respondan al tema, al problema y al objetivo planteado.	0/5
0.8. Citaciones y referencias de acuerdo a la normativa y al formato solicitado por la revista (Todo documento y autor que conste en la sección de bibliografía debe constar en el cuerpo del artículo y viceversa).	0/5
Total máximo	50 puntos

INVESTIGACIONES	
Ítems valorables	**Puntaje**
01. Pertinencia del título (claridad, precisión y con un máximo de 85 caracteres)	0/5
02. Resumen (En un solo párrafo y sin epígrafes, mínimo/máximo: 210-220 palabras).	0/5
03. Introducción (breve presentación del tema; formulación del problema; idea a defender o hipótesis a demostrar; objetivo; importancia del tema; actualidad; metodología; estructura del documento).	0/5

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INVESTIGACIONES	
Ítems valorables	**Puntaje**
04. Revisión de la fundamentación bibliográfica (Además de usar bibliografía actual considerar la inclusión de documentos de Sophia). Rigor metodológico y presentación de instrumentos de investigación.	0/10
05. Estructura y organización del artículo (capacidad argumentativa, coherencia y redacción científica). Análisis y resultados de investigación con secuencia lógica en el texto. Presentación de tablas y figuras sin duplicidad de datos.	0/10
0.6. Aportaciones originales y análisis contextualizados de los datos.	0/5
0.7. Discusión, conclusiones y avances que respondan al tema, al problema y al objetivo planteado.	0/5
0.8. Citaciones y referencias de acuerdo a la normativa y al formato solicitado por la revista (Todo documento y autor que conste en la sección de bibliografía debe constar en el cuerpo del artículo y viceversa).	0/5
Total máximo	50 puntos

4. Cuestiones éticas

a. **Plagio:** Aunque la revista utiliza sistemas de detección de plagio, si el revisor sospechare que un original es una copia sustancial de otra obra, ha de informar de inmediato a los Editores citando la obra anterior con tanto detalle cómo le sea posible.
b. **Fraude:** Si hay sospecha real o remota de que los resultados en un artículo son falsos o fraudulentos, es necesario informar de ellos a los Editores.
c. **Omitir declaración de autoría:** En el artículo, es necesario reconocer las contribuciones realizadas por cada uno de los autores de acuerdo a su grado de participación.
d. **Conflictos de interés:** Con la finalidad de asegurar la transparencia y objetividad en el trabajo, es preciso declarar cualquier posible conflicto de interés que pueda influir en los resultados o la interpretación de la investigación.
e. **Consentimiento ético y respeto por los participantes:** Cuando el artículo involucre a sujetos humanos o animales, los autores deben haber obtenido los correspondientes permisos éticos y asegurarse de que la investigación se haya realizado en concordancia con los principios éticos establecidos, respetando la privacidad y el bienestar de los participantes.

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f. **Transparentar el uso de inteligencia artificial (IA):** En el caso de que en la investigación se haya utilizado IA, los autores deben declarar su empleo especificando con claridad y precisión la manera en que ha sido utilizada, describiendo los algoritmos, las herramientas y las técnicas empleadas, así como los datos, las partes o secciones elaboradas con el apoyo de la herramienta siguiendo las directrices éticas aplicables.
g. **Acceso a los datos y replicabilidad:** Los autores deben garantizar que los datos utilizados en la investigación sean accesibles para su verificación y replicación, promoviendo la transparencia y la reproducibilidad de los resultados.

5. Evaluación de los originales

Luego de completar la evaluación cuanti-cualitativa del manuscrito en revisión, el revisor podrá proponer recomendaciones destinadas a mejorar la calidad del texto original. La calificación del manuscrito se realizará conforme a las siguientes cuatro opciones:

1. **Aceptar este envío.** El tema, contenido y estructura responden a la temática prevista en la convocatoria y están vinculados con las líneas de investigación de la Revista.
2. **Aceptado con condiciones.** El artículo es interesante, sin embargo, no cumple con algunos aspectos de carácter formal exigidos por la revista para avanzar con el proceso editorial. Es preciso identificar con claridad los componentes que deben ser mejorados, debe enumerar los comentarios, especificar los párrafos y páginas en las que se sugiere las modificaciones. Este criterio, implica dos aspectos: a. Publicable con modificaciones; y, b. Reenviar para nueva revisión.
3. **Reenviar a otra revista.** La aplicación de este criterio aplica cuando el tema es interesante, el documento se encuentra bien estructurado, pero no responde a la naturaleza y líneas de investigación de la revista.
4. **No publicable.** El artículo es rechazado debido a las deficiencias detectadas, justificadas y razonadas con valoración cualitativa y cuantitativa. Si en la evaluación cuantitativa obtiene una valoración menos de 35 de los 50 puntos, el informe deberá ser detallado y explicativo de las razones del rechazo.

Todos los criterios anteriores contienen una sección de comentarios, representada por la expresión: Ver comentarios.

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6. Retractación de un artículo

Un artículo puede ser retractado de la revista *Sophia: Colección de Filosofía de la Educación* cuando, tras su publicación, se verifica el **uso indebido de herramientas de Inteligencia Artificial (IA)** que no fue declarado por el autor o autores en el documento de **Declaración de uso de IA**, exigido como requisito durante el proceso editorial.

Aunque el manuscrito haya superado las distintas fases de revisión sin que se detectaran a tiempo similitudes, coincidencias o contenidos inapropiados vinculados al uso automatizado, si posteriormente se comprueba que hubo intervención no declarada de IA en la creación, redacción, análisis o revisión del texto, la revista se reserva el derecho de **retractar oficialmente el artículo**.

Esta retractación implica el retiro del documento publicado, la renuncia a la afirmación original emitida por los autores en su declaración, y la obligación de que los mismos **reconozcan públicamente el error** y **revoquen su declaración previa**.

Esta medida forma parte del compromiso de *Sophia* con la integridad académica, la objetividad y rigurosidad en la evaluación de los manuscritos, la calidad de la publicación, la transparencia científica y el avance ético del conocimiento.

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Protocol of Manuscript Evaluation for External Reviewers

Instructions

- The fulfillment of each one of the articles will be valued in agreement to the following protocol.
- The total sum of the articles will determine the approval or rejection of the article.
- The minimal puntaje in order that the article is approved will be of 48/50.

Article Details		
Date of submission for evaluation:	Date of return of evaluation:	Article code:
Title of the article to be evaluated:		
SECTION: REPORTS, STUDIES, PROPOSALS AND REVIEWS		
01.- Relevancy of the title (clarity, precision and with a maximum of 85 characters)	Mandatory comments:	
	Value from 0 to 5	
02.- They summarize (In an alone paragraph and without epigraphs, minimum / minimal: 210-220 words).	Mandatory comments:	
	Value from 0 to 5	
03.- Introduction (brief presentation of the topic; formulation of the problem; it designs to defending or hypothesis to demonstrating; I target; importance of the topic; current importance; methodology; structure of the document)	Mandatory comments:	
	Value from 0 to 5	
04.- Review of the bibliographical foundation (Beside using current bibliography to consider the incorporation of Sophia's documents).	Mandatory comments:	
	Value from 0 to 10	

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05.- Structure and organization of the article (argumentative capabilities, coherence and scientific redaction)	Mandatory comments:	
	Value from 0 to 10	
06.- Original contributions and contextualized analyses	Mandatory comments:	
	Value from 0 to 5	
07.- Conclusions that answer to the topic, to the problem and to the raised aim	Mandatory comments:	
	Value from 0 to 5	
08.- Citations and references of agreement to the regulation and to the format requested by the magazine (Any document and author who consists in the section of bibliography must consist in the body of story and vice versa)	Mandatory comments:	
	Value from 0 to 5	
OBTAINED PUNCTUATION	Of the total of 50 predictable points, this assessor grants:	

REDACTED OPINION More detailed if the work does not get 48/50 points, to inform the autor (s). This text is sent verbatim to the autor (s) amonymously	

RECOMMENDATION ON HIS PUBLICATION IN SOPHIA			
Validation criteria	**Result**		
	Yes	**Yes, with conditions**	**No**
01. Widely recommended			
02. Recommended only if his quality is improved attending to the totality of the suggestions realized by the revisers			
03. His publication is not recommended			
PROPOSED CHANGES (In case of "Yes, with conditions")			

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Protocolo de evaluación de manuscritos para revisores externos

Instrucciones

- El cumplimiento de cada uno de los ítems será valorado de acuerdo al siguiente protocolo.
- La suma total de los ítems determinará la aprobación o rechazo del artículo. El puntaje mínimo para que el artículo sea aprobado será de 48/50.

Datos del artículo		
Fecha envío evaluación:	Fecha devolución evaluación:	Código artículo:
Título del artículo a evaluar:		
SECCIÓN: ESTUDIOS, PROPUESTAS, INFORMES Y REVISIONES		
01.- Pertinencia del título (claridad, precisión y con un máximo de 85 caracteres)	Comentarios obligatorios:	
	Valore de 0 a 5	
02.- Resumen (En un solo párrafo y sin epígrafes, mínimo/máximo: 210-220 palabras).	Comentarios obligatorios:	
	Valore de 0 a 5	
03.- Introducción (breve presentación del tema; formulación del problema; idea a defender o hipótesis a demostrar; objetivo; importancia del tema; actualidad; metodología; estructura del documento)	Comentarios obligatorios:	
	Valore de 0 a 5	
04.- Revisión de la fundamentación bibliográfica (Además de usar bibliografía actual considerar la inclusión de documentos de Sophia)	Comentarios obligatorios:	
	Valore de 0 a 10	
05.- Estructura y organización del artículo (capacidad argumentativa, coherencia y redacción científica)	Comentarios obligatorios	
	Valore de 0 a 10	

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06.- Aportaciones originales y análisis contextualizados	Comentarios obligatorios:	
	Valore de 0 a 5	
07.- Conclusiones que respondan al tema, al problema y al objetivo planteado	Comentarios obligatorios:	
	Valore de 0 a 5	
08.- Citaciones y referencias de acuerdo a la normativa y al formato solicitado por la revista (Todo documento y autor que conste en la sección de bibliografía debe constar en el cuerpo del artículo y viceversa)	Comentarios obligatorios:	
	Valore de 0 a 5	
PUNTUACIÓN OBTENIDA	Del total de 50 puntos previsibles, este evaluador otorga:	

OPINIÓN REDACTADA (Más detallada si el trabajo no tiene 48/50 puntos, para informar al autor/es) Este texto se remite textualmente al/los autor/es de forma anónima			
RECOMENDACIÓN SOBRE SU PUBLICACIÓN EN SOPHIA			
PUBLICABLE	**Resultado**		
	SI	**Sí, con condiciones**	**NO**
01. Ampliamente recomendado			
02. Recomendado sólo si se mejora su calidad atendiendo a la totalidad de las sugerencias realizadas por los revisores			
03. No se recomienda su publicación			
MODIFICACIONES PROPUESTAS (En caso de «Sí, con condiciones»)			

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Checklist prior to sending the manuscript

1. CHECK OF THE MANUSCRIPT, PRIOR TO SENDING	
To facilitate the process of evaluation of the manuscript and to accelerate the report of its possible publication, a final self-review of the manuscript is advised, checking the following questions.	
COVER LETTER	
Title of the manuscript in spanish (maximum 85 characters).	
Title of the manuscript in english (maximum 85 characters).	
The two versions of the title of the manuscript are concise, informative and collect as many identifiable terms as possible.	
The abstract in spanish is included, in a single paragraph and without epigraphs (minimum / maximum: 210/220 words).	
The abstract in english is included, in a single paragraph and without epigraphs (minimum / maximum: 210-220 words).	
Abstracts in spanish and english respond in order to the following issues: justification of the subject, objectives, study methodology, results and conclusions.	
It includes 6 descriptors (in english and spanish) (only simple words, not phrases or combinations of words), with the most significant terms, and if possible standardized.	
The texts in english (title, abstract and descriptors) have been written or verified by an official translator or expert in this language (The use of automatic translators is prohibited).	
All the identification data of the authors are included in the order stipulated in the norms: identification and correspondence data, professional filiations, last academic degree...	
The first and last name of the authors has been normalized.	
Each author is identified with their ORCID code.	
The maximum number of authors is three, with the exception of those works that justify a higher but limited number of authors	
The author(s) have duly signed the letter of presentation of the article, which includes the partial transfer of rights and the declaration of conflict of interest.	
MANUSCRIPT	
It includes title of the manuscript, abstract, and keywords. All in spanish and english.	

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An introduction is included that in order contains: brief presentation of the subject; problem formulation; Idea to defend or hypothesis to prove; objective; Importance of the theme; relevance; methodology; structure of the document.	
The text is within the minimum and maximum extension: In the Review sections: 10,000/11,000 words of text (without including the references). In the research section: 8,000/9,500 words of text (without including the references). Reports, Studies: 8,000/9,500 words of text (without including the references).	
In case of research, the manuscript responds to the structure required in the guidelines (IMRDC).	
In the case of a report, study or review, the manuscript respects the minimum structure required by the guidelines.	
The review work includes three citations from three previous issues of Sophia Journal.	
The manuscript explicitly cites and cites the used sources and materials.	
The methodology described for the research work is clear and concise, allowing its replication, if necessary, by other experts.	
The conclusions follow on objective and problem raised are supported by the results obtained and presented in the form of a synthesis.	
If statistical analyzes have been used, they have been reviewed/contrasted by an expert.	
The citations in the text are strictly in accordance with the APA 6 regulations, reflected in the instructions.	
In case of use of final notes, it has been verified that these are descriptive and cannot be integrated into the general citation system. Footnotes are not acceptable.	
The final references have been rigorously reviewed and only those that have been cited in the text are included.	
The final references conform in style and format to the international standards used in Sophia.	
The number of references is according to the theoretical basis of the study carried out	
DOIs have been included in all References that carry it in the following format: doi: https://doi.org/XXXXXX	
All web addresses of references have been shortened with Google Url Shortner	

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If figures and charts are included, they should provide additional and not repeated information in the text. Their graphic quality has been verified.	
The number of charts and / or figures does not exceed 6	
If the case, financial support is declared.	
ASPECTOS FORMALES	
The rules have been strictly observed in the use of bold, capital letters, italics and underlines.	
Arial font, size 12 has been used.	
A single line spacing (1) has been used without tab.	
The epigraphs have been properly and hierarchically numbered in Arabic.	
Double spaces have been deleted.	
The typographic quotes « » (with alt + 174 and alt + 175 for opening and closing) have been used.	
Word dictionary for surface spelling has been used.	
The text has been supervised by external staff to ensure grammar and style.	
PRESENTATION	
The signed **Letter of Introduction or Presentation** is attached, containing a Declaration that explains the originality of the manuscript; the authorization for the journal's editorial team to make necessary changes to the content, formal aspects, and style of the document; the Rights Transfer and the Conflict of Interest Declaration.	
The attached **Cover Letter** identifies the section of the journal to which the manuscript is submitted, includes informed consent for experimentation (if applicable); provides the article title in both Spanish and English, as required by the journal; details the complete identification information for each author; includes an abstract of at least 210 words and no more than 220 words; provides an abstract in English with a minimum of 200 words and a maximum of 210 words; does not use automatic translation systems; includes 6 keywords in Spanish and 6 keywords in English, separated by commas, in accordance with the UNESCO Thesaurus and the Journal's Thesaurus; and declares any financial support for the research (optional).	
The **CRediT Author Statement** clearly and accurately explains the contributions made by each of the article's authors and includes the responsibility signatures.	
The **Artificial Intelligence Use Statement** contains complete, clear, and precise information regarding its presentation	

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The manuscript is uploaded to the platform in Word format and without authors identification	
ANNEXED DOCUMENTS	
The five attached documents are: Presentation, Cover Letter, CRediT Author Statement, Artificial Intelligence (AI) Use Statement, and the article in Word format	
The accompanying documents and annexes have been published with Figshare.	

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Chequeo previo al envío del manuscrito

1. CHEQUEO DEL MANUSCRITO, PREVIO AL ENVÍO	
Para facilitar el proceso de evaluación del manuscrito y acelerar el informe de su posible publicación, se aconseja una autorevisión final del manuscrito, comprobando las siguientes cuestiones.	
DOCUMENTO PORTADA (Cover Letter)	
Se incluye título del manuscrito en español (máximo 85 caracteres).	
Se incluye título del manuscrito en inglés (máximo 85 caracteres).	
Las dos versiones del título del manuscrito son concisas, informativas y recogen el mayor número de términos identificativos posibles.	
Se incluye resumen en español, en un solo párrafo y sin epígrafes (mínimo/máximo: 210/220 palabras).	
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Los resúmenes en español e inglés responden ordenadamente a las siguientes cuestiones: justificación del tema, objetivos, metodología del estudio, resultados y conclusiones.	
Se incluyen 6 descriptores (en español e inglés) (sólo palabras simples, no sintagmas o combinaciones de palabras), con los términos más significativos, y a ser posibles estandarizados.	
Los textos en inglés (título, resumen y descriptores) han sido redactados o verificados por un traductor oficial o persona experta en este idioma (Se prohíbe el uso de traductores automáticos).	
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MANUSCRITO	
Se incluye título del manuscrito en español, inglés, resumen, abstract, descriptores y keywords	

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Se incluye una introducción que en orden contiene: breve presentación del tema; formulación del problema; idea a defender o hipótesis a demostrar; objetivo; importancia del tema; actualidad; metodología; estructura del documento.	
El trabajo respeta la extensión mínima y máxima permitidas: Sección de Revisiones: 10.000/11.000 palabras de texto (sin incluir las referencias). Investigaciones: 8.000/9.500 palabras de texto (sin incluir las referencias). Informes, Estudios: 8.000/9.500 palabras de texto (sin incluir las referencias).	
En caso de investigación, el manuscrito responde a la estructura exigida en las normas (IMRDC).	
Si se trata de un informe, estudio o revisión, el manuscrito respeta la estructura mínima exigida en las normas.	
En los trabajos de revisión se incluyen tres citas de tres números anteriores de la Revista Sophia.	
El manuscrito explicita y cita correctamente las fuentes y materiales empleados.	
La metodología descrita, para los trabajos de investigación, es clara y concisa, permitiendo su replicación, en caso necesario, por otros expertos.	
Las conclusiones responden al objetivo y al problema planteados, se apoyan en los resultados obtenidos y se presentan en forma de síntesis.	
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El número de referencias está de acuerdo a la fundamentación teórica del estudio realizado	
Se han incluido los DOI en todas las Referencias que lo lleven con el siguiente formato: doi: https://doi.org/XXXXXX	
Todas las direcciones web de las referencias han sido acortadas con Google Url Shortner	

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Si se incluyen figuras y tablas éstas deben aportar información adicional y no repetida en el texto. Su calidad gráfica se ha verificado.	
El número de tablas y/o figuras no sobrepasa las 6.	
En su caso, se declaran los apoyos y/o soportes financieros.	
ASPECTOS FORMALES	
Se ha respetado rigurosamente la normativa en el uso de negritas, mayúsculas, cursivas y subrayados.	
Se ha utilizado letra Arial, tamaño 12.	
Se ha usado un interlineado sencillo (1) y sin tabulaciones.	
Se han numerado los epígrafes en arábigo de forma adecuada y jerárquicamente.	
Se han suprimido los dobles espacios.	
Se han empleado las comillas tipográficas « » (con alt+174 y alt+175 para apertura y cierre).	
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Se adjunta la **Carta de Presentación** firmada por todos los autores, contiene Declaración que explica la originalidad del manuscrito; la autorización para que la redacción de la revista realice la introducción de cambios necesarios en el contenido, en aspectos formales y en el estilo del documento; la *Cesión de Derechos y la Declaración de conflicto de intereses.*	
Se adjunta la **Cover Letter** que identifica la sección de la revista a la que se dirige el documento, el consentimiento informado de experimentación (si el caso lo amerita); contiene el título del artículo en español y en inglés con las características exigidas por la revista, detalla los datos completos de identificación de cada uno de los autores; presenta el resumen mínimo 210 y máximo 220 palabras; contiene el abstract con mínimo 200 y máximo 210 palabras; no utiliza sistemas de traducción automáticos; presenta 6 palabras clave y 6 keywords, separadas por coma, conforme al Thesaurus de la UNESCO y al Thesaurus de la Revista; declara el apoyo y soporte financiero de la investigación (opcional).	
La **Declaración de Autoría CRediT** explica con claridad y precisión las contribuciones realizadas por cada uno de los autores del artículo y contiene las firmas de responsabilidad.	
La **Declaración de Uso de Inteligencia Artificial,** contiene la información completa, clara y precisa en lo que amerita a su presentación.	

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El manuscrito se sube a la plataforma en formato Word y sin identificación de autores.	
DOCUMENTOS ANEXOS	
Se adjuntan los cinco documentos anexos: Cover Letter; Carta de presentación; Declaración de Autoría CRediT; Declaración de uso de Inteligencia Artificial (IA) y el artículo en versión Word	
Los documentos complementarios y anexos han sido publicados con Figshare.	

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Cover Letter

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Monographic Dossier ___
Miscellaneous ___

Title in Spanish: Arial 14 bold and centered.
Maximum 85 characters with spaces
Title in English: Arial 14 cursive. Maximum 85 characters with spaces

Name author 1 (standardized)
Institution, City, Country
Institutional email
ORCID

Name author 2 (standardized)
Institution, City, Country
Institutional email
ORCID

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Abstract (Spanish)

Minimum 210 and maximum 220 words. It must include 1) Justification of the topic; 2) Objectives; 3) Methodology; 4) Main results; 5) Main conclusions. It must be impersonally written "The present paper analyzes..."

Abstract (English)

Minimum 200 and maximum 210 words. It must include 1) Justification of the topic; 2) Objectives; 3) Methodology; 4) Main results; 5) Main conclusions. It must be impersonally written "The present paper analyzes..." Do not use automatic translation systems.

Keywords (Spanish)

6 standardized terms preferably of a single word and of the UNESCO Thesaurus separated by commas (,).

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Keywords

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Cover Letter

Sección (Marcar)
Dossier Monográfico ___
Miscelánea ___

Título en español: Arial 14 negrita y centrado.
Máximo 85 caracteres con espacios
Title in English: Arial 14 cursiva. Máximo 85 caracteres con espacios

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Correo electrónico institucional
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Nombre autor 2 (estandarizado)
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Correo electrónico institucional
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Resumen

Mínimo 210 y máximo 220 palabras. Debe incluir 1) Justificación del tema; 2) Objetivos; 3) Metodología; 4) Principales resultados; 5) Principales conclusiones. Ha de estar escrito de manera impersonal "El presente trabajo analiza..."

Abstract

Mínimo 200 y máximo 210 palabras cursiva. Debe incluir 1) Justificación del tema; 2) Objetivos; 3) Metodología; 4) Principales resultados; 5) Principales conclusiones. Ha de estar escrito de manera impersonal "El presente trabajo analiza..." No utilizar sistemas de traducción automáticos.

Descriptores

6 términos estandarizados preferiblemente de una sola palabra y del Thesaurus de la UNESCO separados por coma (,).

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Keywords

Los 6 términos referidos en inglés separados por coma (,). No utilizar sistemas de traducción automáticos.

Apoyos y soporte financiero de la investigación (opcional)

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País:
Ciudad:
Proyecto subvencionado:
Código de proyecto:

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PRESENTATION
Letter of introduction

Mr. Editor of «Sophia»

Having read the regulations of the journal «Sophia» and analyzed its coverage, thematic area and approach, I consider that this journal is the ideal one for the dissemination of the work that I hereby attach, for which I beg you to be submitted for consideration for publication. The original has the following title "_____", whose authorship corresponds to _____.

The authors (s) certify that this work has not been published, nor is it under consideration for publication in any other journal or editorial work.

The author (s) are responsible for their content and have contributed to the conception, design and completion of the work, analysis and interpretation of data, and to have participated in the writing of the text and its revisions, as well as in the approval of the version which is finally referred to as an attachment.

Changes to the content are accepted if they occur after the review process, and also changes in the style of the manuscript by the editorial process of «Sophia».

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It is also declared that they have respected the ethical principles of research and are free from any conflict of interest.

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PRESENTACIÓN
Carta de Presentación

Sr. Editor de «Sophia»

Leída la normativa de la revista «Sophia» y analizada su cobertura, área temática y enfoque, considero que esta revista es la idónea para la difusión del trabajo que le adjunto, por lo que le ruego sea sometida a la consideración para su publicación. El original lleva por título "_____", cuya autoría corresponde a _____.

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Se aceptan la introducción de cambios en el contenido si hubiere lugar tras la revisión, y de cambios en el estilo del manuscrito por parte de la redacción de «Sophia».

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Announcements 2025-2030 / *Convocatorias 2025-2030*

Call for papers 2025-2030

Sophia 40
Philosophy in the education of principles and values

Lines of research:

- Philosophy of values and their implications in education
- Knowledge of moral virtues
- Didactics of ethics
- Didactics of axiology
- Discourse as an ethical practice
- Education in ethical, political, civic, and religious values
- Philosophy of education based on axiology
- Freedom, justice, and democracy in education
- Onto-anthropological aspects in values education
- Importance of vocation and peaceful coexistence in the educational environment
- Philosophical currents contributing to values education
- Teaching professional ethics
- Responsibility of professionals in the pursuit and communication of truth
- Ethical dilemmas related to truth in various professions
- Ethical dilemmas related to the use of technology and digital media

Article Contributions: We welcome articles from prominent representatives in the field of philosophy, addressing the central theme and its implications in the philosophy of education, psychology, pedagogy, or other disciplines.

Manuscript submission deadline: July 15, 2025
Publication date of this edition: January 15, 2026

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Sophia 41
Fundamental categories for understanding the philosophy of education in contemporary society

Lines of research:

- Educational theory
- Ontic and ontological categories in the philosophy of education
- Critical theory of education
- Paradoxes of critical thinking and educational reality
- Nature and philosophy of learning
- Critical perspective on educational methodology and innovation
- Critical pedagogies and methodologies
- Self-concept and metacognitive strategies
- Contributions of formal logic, modal logic, and dialectical logic to understanding the philosophy of education

Article Contributions: We welcome articles from prominent representatives in the field of philosophy, addressing the central theme and its implications in psychology, pedagogy, or other disciplines.

Manuscript Submission Deadline: December 15, 2025
Publication Date of This Edition: July 15, 2026

Sophia 42
Philosophy in media communication and digital media in education

Lines of research:

- Reflections on media education
- Truthfulness of information in digital media
- Philosophical analyses of misinformation phenomena
- Questions on the impact of fake news on society and education
- Critical formation of individuals regarding media and digital technologies
- Reflections on various media and digital formats
- Philosophical foundations of digital literacy and media education
- Critical and competent civic formation in the use of media and digital technologies
- Constructivist and critical approaches to media education
- Philosophical methods for teaching media skills
- Pedagogical strategies for teaching media and digital skills
- Critical thinking for media analysis
- Technical and creative skills for media content production
- Ethics and responsibility in the digital age
- Ethics and responsibility in creating and disseminating digital content

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- Impact of media and technology on society
- Education on online privacy and personal data protection
- Strategies for maintaining digital security and ethics in technology use
- Equitable access to technology and media
- Policies and practices to reduce the digital divide and promote technological inclusion
- The role of media literacy in forming informed and participative citizens
- The use of digital media for civic participation
- Ethical dilemmas related to the use of technology and digital media
- Social responsibility and professional ethics in creating and consuming media content
- Integration of media education into the curriculum
- Critical evaluation of educational programs and practices in media literacy
- Emerging trends in digital literacy and their relevance to the future of education
- Globalization through the internet and the power of Artificial Intelligence as a leveling force in education

Article contributions: We welcome articles from prominent representatives in the field of philosophy, addressing the central theme and its implications in psychology, pedagogy, or other disciplines.

Manuscript submission deadline: July 15, 2026
Publication date of this edition: January 15, 2027

Sophia 43
Philosophy of neuroeducation

lines of research:

- Ethical, epistemological, and methodological implications of applying neuroscientific knowledge in education
- Nature, limitations, and purposes of neuroeducation
- Philosophical reflection on the relationship between neuroscience, psychology, and pedagogy
- Neurobiological foundations of learning
- Brain plasticity and memory consolidation
- Fundamental cognitive processes: attention, perception, memory, and emotions in education
- Principles of neuroscience to improve teaching and learning
- Ethics of neuroeducation
- Informed consent in neuroeducational research
- Critical evaluation of neuroscientific methodologies
- Criticisms of neuroscience and neuroeducation

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- Designing learning environments adapted to students' cognitive and emotional needs
- Impact of emotions on learning and memory processes
- Strategies to foster intrinsic motivation and emotional well-being in the classroom
- Lifelong learning and neuroplasticity in adulthood
- Philosophical reflection on the use of emerging technologies like neuroimaging and brain stimulation in educational research
- Philosophical reflection on teacher training and neuroeducation
- Influence of neuroscientific knowledge on educational practice
- Philosophy of mind and neuroeducation
- Moral neuroeducation
- Neuroethics related to education

Article contributions: We welcome articles from prominent representatives in the field of philosophy, addressing the central theme and its implications in psychology, pedagogy, or other disciplines.

Manuscript submission seadline: December 15, 2026
Publication date of this edition: July 15, 2027

Sophia 44
Ethics of artificial intelligence in education

Lines of research:

- Ethical and moral implications of AI development and use
- Transparency, privacy, and data protection
- Ethical handling of personal data
- Autonomy and educational decision-making with AI systems
- Human autonomy and supervision with AI
- Effects of automation and AI in education
- Philosophical reflection on the use of AI
- Strategies to combat misinformation generated by AI
- Criticisms of machine autonomy and robot ethics
- Cultural and ethical differences in the perception and regulation of AI
- Approaches, perspectives, and trends to address the challenges and opportunities of this technology
- The use of AI in virtual educational environments
- Security, justice, and benefits of AI for stakeholders
- Reflections on equity promoted by AI
- Impact of AI on teachers' responsibilities and students' roles
- Ethics as a balance point between technology and human interaction in the educational process

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- Educational assessment
- Ethical use of AI to evaluate student performance
- Ethical approach to the implementation of artificial intelligence in education

Article contributions: We welcome articles from prominent representatives in the field of philosophy, addressing the central theme and its implications in psychology, pedagogy, or other disciplines.

Manuscript submission deadline: July 15, 2027
Publication date of this edition: January 15, 2028

Sophia 45
Philosophy of education in truth and post-truth

Lines of research:

- Conceptions, theories, and criteria of truth
- Epistemological foundations of how we know the truth
- Theories of knowledge and their application in education
- Implications of truth in educational processes
- The truth in the teacher vs. the truth in the student
- Ethics and truth in educational research
- Types of truth, problems, and limits of truth in education
- Education in truth based on critical thinking
- Education in truth in the post-truth era
- Educational dimension of post-truth
- Intellectual honesty, integrity, objectivity, and rigorous pursuit of knowledge
- Truth as the center of the educational process
- The role of truth in civic education and citizen formation
- Relationship between truth, power, and propaganda in education
- Strategies to promote self-reflection and personal pursuit of truth
- Importance of authenticity and honesty in personal and educational development
- Methods of teaching truth
- Truth in the sciences, humanities, and social sciences
- The pursuit of truth in academic and scientific research
- Cultural relativity and truth
- Teaching truth in a multicultural and pluralistic context

Article contributions: We welcome articles from prominent representatives in the field of philosophy, addressing the central theme and its implications in psychology, pedagogy, or other disciplines.

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Manuscript submission deadline: December 15, 2027
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Sophia 46
Philosophy of the environment and education

Lines of research:

- Interaction between environmental philosophy and education
- Philosophical approaches to environmental education
- Environmental ethics in education
- The ethics of respect and care for the environment
- Environmental ethical dilemmas in the classroom
- Transdisciplinary dialogue on sustainable development and regenerative cultures from critical pedagogy
- Philosophy of nature and education, philosophical perspectives on nature influencing education
- The role of education in global sustainability
- Philosophy of ecology in education
- Educational methods to develop ecological awareness
- Environmental education in the formation of ecological values
- Teaching environmental equity
- Ecofeminism in environmental education
- Philosophy of climate change and education
- Climate change from a philosophical perspective
- Critical pedagogy for understanding the environment
- Teaching about the rights of nature
- Philosophical implications of nature
- Philosophical foundations of curriculum integration with environmental topics
- Interdisciplinary curriculum from environmental philosophy
- Anthropocentrism and ecocentrism
- Philosophy and environmental technoscience in education
- Ethics of geoengineering and other technological interventions in the environment
- Ontology of the environment
- Philosophy of ecology
- Criticisms and challenges in implementing the rights of nature

Article contributions: We welcome articles from prominent representatives in the field of philosophy, addressing the central theme and its implications in psychology, pedagogy, or other disciplines.

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Sophia 47
Problems and challenges in the philosophy of education

Lines of research:

- Philosophical foundations of inequality and educational equity in education
- The role of the philosophy of education in cultural diversity
- The role of the philosophy of education in political and civic formation
- Intercultural philosophy and educational competencies in globalization
- Evaluation of the relevance and updating of educational content
- Alternative methods of educational assessment
- Decentralization and governance in education
- Philosophy of education for understanding the mental health of teachers and students
- Pedagogical orientations based on philosophical currents
- Critical thinking in the classroom

Article contributions: We welcome articles from prominent representatives in the field of philosophy, addressing the central theme and its implications in psychology, pedagogy, or other disciplines.

Manuscript submission deadline: December 15, 2028
Publication date of this edition: July 15, 2029

Sophia 48
The role of the teacher in character formation and virtue modeling

Lines of research:

- Character education from philosophy
- Articulation of ethical theory, pedagogical practices, and cultivation of a school environment for moral development
- Philosophical strategies for character education
- Teaching values
- Modeling virtues
- Teachers' behavior and decisions
- Teachers as role models of virtues
- Moral and ethical dilemmas in the classroom
- Philosophy for children programs for developing critical thinking skills
- Experiential learning for character education

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- Project-based learning as an experience to strengthen human character
- Importance of interdisciplinarity in character formation
- Influence of the school environment in character formation
- The practice of virtues as a mechanism for forming the character of the subject
- Character education through developmental stages
- Teaching values
- Philosophical methods, techniques, and strategies for character formation
- Philosophical-pedagogical proposals for character formation
- Personal reflection and self-knowledge as mechanisms for character formation
- Philosophical currents for character formation
- Ethical theories for character formation
- Theories of moral development (Piaget, Kohlberg, etc.)
- Understanding character formation through the relationship between moral and psychological development
- Role of character education in civic participation and the common good
- Role of religion and spirituality in character education
- Importance of religions in character formation
- Criticisms and defenses of character education programs
- Role of mentors in character education
- Character formation from philosophy
- Character formation from pedagogy
- Philosophical and pedagogical strategies for character education
- Interdisciplinary approach to moral education
- Relationship between character and knowledge
- Theories, practices, and school environments in moral development and character education
- Pedagogy and philosophy in moral education
- The art of character formation from pedagogy and moral philosophy
- Philosophy and pedagogical practices for character development

Article contributions: We welcome articles from prominent representatives in the field of philosophy, addressing the central theme and its implications in psychology, pedagogy, or other disciplines.

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Sophia 49
Philosophical foundations and perspectives of transformative education

Lines of research:

- Theoretical foundations of critical consciousness
- Participatory pedagogy as a basis for transformative education
- Contextualized education as key to personal and social transformation
- Interdisciplinarity as a mechanism to address problems
- Critical consciousness as the basis for transformative education
- Participatory pedagogy as a reference for transformative education
- Interdisciplinary approach to education and social transformation
- Foundations of transformative education from Freire to Foucault
- Holistic learning as a foundation for transformative education
- Theory, praxis, and philosophy towards transformative education
- Contextualized education as a basis for personal and social transformation
- Interdisciplinarity and critical consciousness in transformative education
- Philosophical perspectives of transformative education: Freire, Dewey, etc.
- Theories and practices for holistic understanding of transformative education
- Holistic perspective of learning and understanding as a basis for transformative education
- Philosophical foundations of transformative education from Freire, Dewey, Kant, Rousseau, Giroux, Foucault, Gramsci, etc.

Article contributions: We welcome articles from prominent representatives in the field of philosophy, addressing the central theme and its implications in psychology, pedagogy, or other disciplines.

Manuscript submission deadline: December 15, 2029
Publication date of this edition: July 15, 2030

Sophia 50
Phenomenology of experience in education

Lines of research:

- Study of subjective experience
- Phenomenological methods to understand the mind
- Importance of lived and subjective experiences in integral formation
- Philosophical foundations of lived experience
- Attention and focus as necessary aspects for understanding
- Sensory and cognitive perception in educational experience
- Influence of the temporality of experience on learning

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- Impact of time perception on educational experience
- Importance of situational context, physical, educational, social, and cultural space in the learning experience
- Development of personal and professional identity of the main educational agents
- Importance of authenticity in education
- Influence of emotions and feelings on educational experience and learning process
- Relationship between emotion and cognition
- Influence of emotional experiences on understanding and academic performance
- Critical reflection on educational experiences to foster deep and meaningful learning
- Adapting the curriculum to respond to perceptions and needs
- Experiential learning and self-directed discovery
- Reflective and empathetic teaching based on students' perspectives and experiences
- Learning environments to foster interaction and collaboration

Article contributions: We welcome articles from prominent representatives in the field of philosophy, addressing the central theme and its implications in psychology, pedagogy, or other disciplines.

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Convocatorias 2025-2030

Sophia 40
La filosofía en la educación de principios y valores

Líneas de Investigación: Filosofía de los valores y su implicación en la educación; el conocimiento de las virtudes morales; didáctica de la ética; didáctica de la axiología; discurso como práctica ética; educación en valores éticos, políticos, cívicos, religiosos; filosofía de la educación basada en la axiología; la libertad, la justicia y la democracia en la educación; lo onto-antropológico en la educación en valores; la importancia de la vocación y la convivencia pacífica en el entorno educativo; corrientes filosóficas que aportan para la educación en valores; la enseñanza de la ética profesional; responsabilidad de los profesionales en la búsqueda y comunicación de la verdad; dilemas éticos relacionados con la verdad en diversas profesiones; dilemas éticos relacionados con el uso de tecnología y medios digitales.

Generación de artículos desde representantes de la filosofía destacados en el tema central y sus implicaciones en la filosofía de la educación, en la psicología, en la pedagogía o en otras disciplinas.

Fecha límite para la recepción de manuscritos: 15 de julio de 2025
Fecha de publicación de esta edición: 15 de enero de 2026

Sophia 41
Categorías fundamentales para la comprensión de la filosofía de la educación en la sociedad actual

Líneas de Investigación: Teoría educativa; categorías ónticas y ontológicas de la filosofía de la educación; teoría crítica de la educación; paradojas del pensamiento crítico y realidad educativa; naturaleza y filosofía del aprendizaje, perspectiva crítica de la metodología y la innovación educativa; pedagogías y metodologías críticas; autoconcepto y estrategias metacognitivas; contribuciones de la lógica formal, de la lógica modal, de la lógica dialéctica para la comprensión de la filosofía de la educación

Generación de artículos desde representantes de la filosofía destacados en el tema central y sus implicaciones en la psicología, en la pedagogía o en otras disciplinas.

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Sophia 42
Filosofía en la comunicación mediática
los medios digitales en la educación

Líneas de Investigación: Reflexiones sobre la educación mediática; la veracidad de la información en medios digitales; análisis filosóficos de los fenómenos de desinformación; cuestionamientos sobre el impacto de las noticias falsas (fake news) en la sociedad y la educación; la formación crítica de los individuos en relación con los medios de comunicación y las tecnologías digitales; reflexiones sobre diversos formatos mediáticos y digitales; fundamentos filosóficos de la alfabetización digital y la educación mediática; formación ciudadana crítica y competente en el uso de medios y tecnologías digitales; enfoques constructivistas y críticos en la educación mediática; métodos filosóficos para la enseñanza de habilidades mediáticas; estrategias pedagógicas para la enseñanza de habilidades mediáticas y digitales; pensamiento crítico para el análisis de medios; habilidades técnicas y creativas para la producción de contenido mediático; ética y responsabilidad en la era digital; ética y responsabilidad en la creación y difusión de contenido digital; impacto de los medios y la tecnología en la sociedad; educación sobre la privacidad en línea y protección de datos personales; estrategias para mantener la seguridad digital y la ética en el uso de tecnologías; acceso equitativo a la tecnología y a los medios de comunicación; políticas y prácticas para reducir la brecha digital y promover la inclusión tecnológica; rol de la alfabetización mediática en la formación de ciudadanos informados y participativos; el uso de los medios digitales para la participación cívica; dilemas éticos relacionados con el uso de tecnología y medios digitales; responsabilidad social y ética profesional en la creación y consumo de contenido mediático; integración de la educación mediática en el currículo; evaluación crítica de programas y prácticas educativas en alfabetización mediática; tendencias emergentes en la alfabetización digital y su relevancia para el futuro de la educación; La globalización mediante internet y el poder de la Inteligencia Artificial como fuerza de nivelación de la educación

Generación de artículos desde representantes de la filosofía destacados en el tema central y sus implicaciones en la psicología, en la pedagogía o en otras disciplinas.

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Sophia 43
Filosofía de la neuroeducación

Líneas de Investigación: Implicaciones éticas, epistemológicas y metodológicas de aplicar conocimientos neurocientíficos en la educación; naturaleza, limitaciones y finalidades de la neuroeducación; reflexión filosófica de la relación entre neurociencia, psicología y pedagogía; bases neurobiológicas del aprendizaje; plasticidad cerebral y consolidación de la memoria; procesos cognitivos fundamentales: atención, percepción, memoria y emociones en la educación; principios de la neurociencia para mejorar la enseñanza y el aprendizaje; ética de la neuroeducación; el consentimiento informado en la investigación neuroeducativa; evaluación crítica de las metodologías neurocientíficas; críticas a la neurociencia y a la neuroeducación; diseño de entornos de aprendizaje adaptados a las necesidades cognitivas y emocionales de los estudiantes; impacto de las emociones en los procesos de aprendizaje y memoria; estrategias para fomentar la motivación intrínseca y el bienestar emocional en el aula; aprendizaje a lo largo de la vida y neuroplasticidad en la edad adulta; reflexión filosófica sobre el uso de tecnologías emergentes como la neuroimagen y la estimulación cerebral en la investigación educativa; reflexión filosófica sobre la formación docente y la neuroeducación; influencia de los conocimientos neurocientíficos en la práctica educativa; filosofía de la mente y neuroeducación; neuroeducación moral; neuroética vinculada con la educación.

Generación de artículos desde representantes de la filosofía destacados en el tema central y sus implicaciones en la psicología, en la pedagogía o en otras disciplinas.

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Sophia 44
Ética de la inteligencia artificial en la educación

Líneas de Investigación: Implicaciones éticas y morales del desarrollo y uso de la IA; transparencia, privacidad y protección de datos; manejo ético de los datos personales; autonomía y toma de decisiones educativas con los sistemas de IA; autonomía y supervisión humana con la IA; efectos de la automatización y la IA en la educación; reflexión filosófica sobre el uso de la IA; estrategias para combatir la desinformación generada por la IA; críticas sobre la autonomía de las máquinas y la ética de los robots; diferencias culturales y éticas en la percepción y regulación de la IA; enfoques, perspectivas y tendencias para abordar los desafíos y oportunidades que presenta esta tecnología; el uso de la IA en entornos virtuales educativos; seguridad, justicia y beneficios de la IA para los involucrados; reflexiones sobre la equidad promovida desde la IA; impacto de la IA en las responsabilidades del docente y en el rol del estudiante;

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la ética como punto de equilibrio entre tecnología e interacción humana en el proceso educativo; la evaluación educativa; uso ético de la IA para evaluar el rendimiento estudiantil; enfoque ético en la implementación de la inteligencia artificial en la educación.

Generación de artículos desde representantes de la filosofía destacados en el tema central y sus implicaciones en la psicología, en la pedagogía o en otras disciplinas.

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Fecha de publicación de esta edición: 15 de enero de 2028

Sophia 45
Filosofía de la educación en la verdad y la post-verdad

Líneas de Investigación: Concepciones, teorías y criterios de verdad; fundamentos epistemológicos de cómo conocemos la verdad; teorías del conocimiento y su aplicación en la educación; implicaciones de la verdad en los procesos educativos; la verdad en el docente vs la verdad en el estudiante; ética y verdad en la investigación educativa; clases de verdad, problemas y límites de la verdad en la educación; educación en la verdad basada en el pensamiento crítico; educación en la verdad en la era de la posverdad; dimensión educativa de la posverdad; honestidad intelectual, integridad, objetividad y búsqueda rigurosa del conocimiento; la verdad como centro del proceso educativo; el rol de la verdad en la educación cívica y en la formación de ciudadanos; relación entre verdad, poder y propaganda en la educación; estrategias para fomentar la auto-reflexión y la búsqueda personal de la verdad; la importancia de la autenticidad y la honestidad en el desarrollo personal y educativo; métodos de enseñanza de la verdad; la verdad en las ciencias, las humanidades y las ciencias sociales; la búsqueda de la verdad en la investigación académica y científica; relatividad cultural y verdad; enseñanza de la verdad en un contexto multicultural y pluralista.

Generación de artículos desde representantes de la filosofía destacados en el tema central y sus implicaciones en la psicología, en la pedagogía o en otras disciplinas.

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Sophia 46
Filosofia del medio ambiente y educación

Líneas de Investigación: Interacción entre filosofía del medio ambiente y la educación; enfoques filosóficos en la educación ambiental; ética ambiental en la educación; la ética de respeto y cuidado por el medio ambiente; dilemas éticos ambientales en el aula; diálogo transdisciplinar sobre el desarrollo sostenible y culturas regenerativas desde la pedagogía crítica; filosofía de la naturaleza y educación, perspectivas filosóficas sobre la naturaleza que influyen en la educación; el papel de la educación en la sostenibilidad global; filosofía de la ecología en la educación; métodos educativos para desarrollar una conciencia ecológica; la educación ambiental en la formación de valores ecológicos; enseñanza de la equidad ambiental; ecofeminismo en la educación ambiental; filosofía del cambio climático y educación; cambio climático desde una perspectiva filosófica; pedagogía crítica para la comprensión del medio ambiente; enseñanza sobre los derechos de la naturaleza; implicaciones filosóficas sobre la naturaleza; fundamentos filosóficos de la integración curricular con temas ambientales; currículo interdisciplinario desde la filosofía ambiental; antropocentrismo y ecocentrismo; filosofía y tecnociencia ambiental en la educación; ética de la geoingeniería y otras intervenciones tecnológicas en el medio ambiente; ontología del medio ambiente; filosofía de la ecología; críticas y desafíos en la implementación de los derechos de la naturaleza.

Generación de artículos desde representantes de la filosofía destacados en el tema central y sus implicaciones en la psicología, en la pedagogía o en otras disciplinas.

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Sophia 47
Problemas y desafíos de la filosofia de la educación

Líneas de Investigación: Fundamentos filosóficos de la desigualdad y la equidad educativa en la educación; papel de la filosofía de la educación en la diversidad cultural; función de la filosofía de la educación en la formación política y ciudadana; filosofía intercultural y competencias educativas en la globalización; evaluación de la relevancia y actualización del contenido educativo; métodos alternativos de evaluación educativa; descentralización y gobernanza en la educación; la filosofía de la educación para la comprensión de la salud mental de docentes y estudiantes; orientaciones pedagógicas basadas en corrientes filosóficas; el pensamiento crítico en el aula.

Generación de artículos desde representantes de la filosofía destacados en el tema central y sus implicaciones en la psicología, en la pedagogía o en otras disciplinas.

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Sophia 48
La función del docente en la formación del carácter y en la modelación de virtudes

Líneas de Investigación: La educación del carácter desde la filosofía; articulación de teoría ética, prácticas pedagógicas y cultivo de un ambiente escolar para el desarrollo moral; estrategias filosóficas para la educación del carácter; enseñanza de valores; modelado de virtudes; comportamiento y decisiones de los docentes; docentes como modelos de las virtudes; dilemas morales y éticos en el aula; programas de filosofía para niños para el desarrollo de habilidades de pensamiento crítico; el aprendizaje experiencial para la educación del carácter; el aprendizaje basado en proyectos como experiencia para fortalecer el carácter del ser humano; importancia de la interdisciplinariedad en la formación del carácter; influencia del ambiente escolar en la formación del carácter; la práctica de las virtudes como mecanismo para la formación del carácter del sujeto; la educación del carácter a través del desarrollo evolutivo; la enseñanza de valores; métodos filosóficos, técnicas y estrategias para formar el carácter; propuestas filosófico-pedagógicas para la formación del carácter; la reflexión personal y el autoconocimiento como mecanismos para la formación del carácter; corrientes filosóficas para la formación del carácter; teorías éticas para la formación del carácter; teorías del desarrollo moral (Piaget, Kohlberg, etc.); comprensión de la formación del carácter desde la relación entre desarrollo moral y desarrollo psicológico; función de la educación del carácter en la participación ciudadana y el bien común; rol de la religión y la espiritualidad en la educación del carácter; importancia de las religiones en la formación del carácter; críticas y defensas de los programas de educación del carácter; rol de los mentores en la educación del carácter; la formación del carácter desde la filosofía; formación del carácter desde la pedagogía; estrategias filosóficas y pedagógicas para la educación del carácter; enfoque interdisciplinario en la educación moral; relación carácter y conocimiento; teorías, prácticas y ambientes escolares en el desarrollo moral y la educación del carácter; pedagogía y filosofía en la educación moral; el arte de formar el carácter desde la pedagogía y la filosofía moral; filosofía y prácticas pedagógicas para el desarrollo del carácter

Generación de artículos desde representantes de la filosofía destacados en el tema central y sus implicaciones en la psicología, en la pedagogía o en otras disciplinas.

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Sophia 49
Fundamentos y perspectivas filosóficas de la educación transformadora

Líneas de Investigación: Fundamentos teóricos sobre la conciencia crítica; la pedagogía participativa como base para la educación transformadora; educación contextualizada clave para la transformación personal y social; la interdisciplinariedad como mecanismo para abordar problemas; conciencia crítica como base para la educación transformadora; la pedagogía participativa como referente para una educación transformadora; enfoque interdisciplinario para la educación y transformación social; fundamentos de la educación transformadora de Freire a Foucault; aprendizaje holístico como fundamento para la educación transformadora; teoría, praxis y filosofía en clave hacia una educación transformadora; la educación contextualizada como base para la transformación personal y social; interdisciplinariedad y conciencia crítica en la educación transformadora; perspectivas filosóficas de la educación transformadora: Freire, Dewey, etc.; teorías y prácticas para la comprensión holística de la educación transformadora; perspectiva holística del aprendizaje y la comprensión como base para la educación transformadora; fundamentos filosóficos de la educación transformadora desde Freire, Dewey, Kant, Rousseau, Giroux, Foucault, Gramsci; etc.

Generación de artículos desde representantes de la filosofía destacados en el tema central y sus implicaciones en la psicología, en la pedagogía o en otras disciplinas.

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Sophia 50
Fenomenología de la experiencia en la educación

Líneas de Investigación: Estudio de la experiencia subjetiva; métodos fenomenológicos para comprender la mente; importancia de las experiencias vividas y subjetivas en la formación integral; fundamentos filosóficos de la experiencia vivida; atención y focalización como aspectos necesarios para la comprensión; la percepción sensorial y cognitiva en la experiencia educativa; influencia de la temporalidad de la experiencia en el aprendizaje; incidencia de la percepción del tiempo en la experiencia educativa; importancia del contexto situacional, del espacio físico educativo, social y cultural en la experiencia del aprendizaje; desarrollo de la identidad personal y profesional de los principales agentes de la educación; importancia de la autenticidad en la educación; influencia de las emociones y los sentimientos en la experiencia educativa y en el proceso de aprendizaje; relación entre emoción y cognición; influencia de las experiencias emocionales en la comprensión y rendimiento académico; reflexión crítica sobre las experiencias educativas para fomentar

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el aprendizaje profundo y significativo; adaptación del currículo para responder a las percepciones y necesidades. aprendizaje experiencial y el descubrimiento autodirigido; enseñanza reflexiva y empática basada en las perspectivas y vivencias de los estudiantes; ambientes de aprendizaje para fomentar la interacción y la colaboración.

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