

Open challenges between analytical pedagogy and critical literacy. The use of AI in educational environments¹

Desafíos abiertos entre la pedagogía analítica y la alfabetización crítica:
El uso de IA en entornos educativos

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Abstract. The advent of generative Artificial Intelligence and its rapid inclusion in learning environments have challenged processes such as students' cognitive development, the promotion of critical thinking, and the enhancement of creative processes. This study examines the limitations of artificial intelligence in generating linguistic and visual texts for the Philosophy of Education course. Under a qualitative content analysis, three key concepts of this course were examined; the results demonstrated the limitations of generative AI in meeting advanced academic criteria, as it offers standardized structures that reveal a lack of genuine thought, carrying the risk of factual inaccuracy, and therefore cannot promote an emancipatory practice. Given this situation, the practices of critical literacy are emphasized, both in teacher training and for students within the classroom and their surrounding reality. Its methods in approaching texts and images lay the basis for a re-evaluation of artificial intelligence usage within the context of critical reading skills,

fostering critical discrimination while enabling the responsible integration and reshaping of AI in the classroom

Keywords: *Artificial Intelligence; Critical Literacy; Content Curation; Philosophy of Education; Content Analysis.*

Resumen. El advenimiento de la inteligencia Artificial generativa y su rápida inclusión en los entornos educativos ha puesto en tela de juicio procesos como el desarrollo cognitivo del estudiantado, la promoción del pensamiento crítico y el incremento de los procesos creativos. Este estudio examina las limitaciones de la inteligencia artificial en la generación de textos lingüísticos y visuales para la asignatura Filosofía de la Educación. Bajo un análisis de contenido cualitativo se examinaron tres conceptos clave de la asignatura, cuyos resultados demuestran las limitaciones de la IA para cubrir estándares académicos avanzados, ya que ofrecen estructuras estandarizadas,

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que demuestran la falta de un pensamiento genuino, con el riesgo de que no sea verdad y, por lo tanto, no pueden promover una práctica emancipadora. Dada esta situación, se ponen en relieve las prácticas de la Literacidad, tanto en la formación docente, como para el estudiantado dentro del aula y en su realidad circundante. Sus métodos al aproximarse a textos e imágenes sientan las bases para una

reevaluación del uso de la inteligencia artificial en el contexto de las competencias de lectura crítica y fomentara la discriminación crítica, así como habilita la integración responsable y la reformulación de la IA en el aula.

Palabras clave: *Inteligencia artificial; alfabetización crítica; curación de contenidos; filosofía de la educación; análisis de contenidos.*

1. Introduction

Generative artificial intelligence is steadily permeating and reshaping learning-teaching processes, from the administration of academic staff, the planning of subject syllabuses, tutoring agents, to the generation of cultural content. The incursion of these generative digital technologies into classrooms is giving rise to new challenges for the development of critical skills, access, processing and evaluation of knowledge. This essay presents a descriptive study that aims to determine that the generative results of artificial intelligence are meagre. The findings of this study are crucial for identifying patterns, standards, biases, and levels of credibility and reliability in both linguistic and visual texts generated by AI, as well as their potential to enrich the resources available to higher education learners.

Since the public launch of most artificial intelligence platforms in 2022 (Midjourney, Inc., 2022; OpenAI, 2022a; OpenAI, 2022b; Rombach et al., 2022), the development of emerging digital technologies has been focused on these advancements, characterised by its ease of access, use and ubiquity, yet another vehicle for the democratisation of digital technology.

The main focus of the study is on the behaviour of the Artificial Intelligence system and, rather than the corpus of prompts from non-specific users², the outputs or AI generative records are analysed, whether these are linguistic texts or visual texts. The specific objective of this investigation into the results generated by AI is to determine that they are considered to be scarce or thin.

² By *non-specific users*, we mean users who do not belong to the fields of computer engineering or AI engineering and who do not have specific skills or competencies in the use of AI that are declared, certified or demonstrable through qualifications and previous experience. General users, and specifically those involved in this relevant experiment, do not have any specific knowledge that would allow them to interact in a measured way according to the different logical, linguistic and operational code structures.

2. Theoretical Framework

2.1. Critical Literacy

Within Freire's theoretical, political and social framework, critical literacy is part of the act of creation and is capable of activating different possibilities for critical thinking and for relating to the environment and peers as an emancipatory praxis. According to the author from Recife, it is about:

“not only being in the world but with it, working on permanent relationships with this world, which arise from creation and recreation or from the enrichment that he (the subject) makes of the natural world, represented in cultural reality. Through these relationships with reality and in reality, man works out a specific relationship –from subject to object– which results in the knowledge expressed by language.” (Freire, 1969)

In the 21st century, critical pedagogy is becoming aware of social and cultural needs and is refocusing on the necessary mastery of language in adulthood, together with the necessary training towards liberating thinking.

Memorisation, is an aspect based on theories focused on the passive transmission of knowledge, accompanied by the ineffective use of electronic tools, has contributed to the proliferation of what is now recognised as *brain rot* (Oxford University Press, 2024). However, as Yousef et al. point out, it is necessary to understand how the problem also existed before the contribution of digital technology, and has simply begun to spread more rapidly, supported by the hours spent in front of screens, *unfiltered* (Yousef et al., 2025). The challenges of contemporary life have changed in line with technological development, reflecting a growing presence within the virtual world. Critical pedagogy plays a role in this regard, supporting and contributing theoretical questions within the framework of artificial intelligence-mediated learning proposals.

The *controversy* between natural language and artificial codes addressed in the proposals of critical pedagogy is defined in Baldacci's introductory essay (2024). In his analysis of AI, Baldacci reminds us of the existence of “strong AI...that simulates cognitive processes’ and ‘weak AI...that focuses on task efficiency.” (Baldacci, 2024, pp. 17-18).

2.2. Analytical Philosophy

Based on the considerations made by the philosopher Wittgenstein, with reference to language and what he defines as linguistic games, something potentially inherent in human beings but which requires knowledge and critical understanding. “Such a ‘game’ he took to be a simplified structure, model, or picture (Bild) of a portion of our language exhibiting various kinds of distinctive patterns and regularities of human action and interaction.” (Floyd, 2005, p. 78)

The creation and reproducibility of language, as Wittgenstein (1958) argues, is part of a person who knows an environment, interacts with others and is at the same

time represented by the linguistic code they master. The difficulty lies in the current impossibility of transferring the linguistic game to a machine, which artificially generates content without being able to master the sense of humour of the environment in which it finds itself, or geolocates itself through an address, whether static or dynamic.

Meanwhile, Russell bases his proposals on what he himself recognises as the limits of language and the limits of science (1931). Russell argues that “To say that we live in age of science is a commonplace, but like most commonplaces it is only partially true” (Russell, 1931, p. 9) The author asserts that “From the point of view of our predecessors, if they could view our society, we should, no doubt, appear to be very scientific, but from the point of view of our successors it is probable that the exact opposite would seem to be the case.” (Russell, 1931, p. 9).

Issues related to the imitation of language, the use of words and reasoning itself are interpreted and clarified in the Turing Test. It all begins with the questions suggested by the mind behind of The Imitation Game:

I propose to consider the question, ‘Can machines think?’ This should begin with definitions of the meaning of the terms ‘machine’ and ‘think’. The definition might be framed so as to reflect so far as possible the normal use of the words, but this attitude is dangerous. If the meaning of the words ‘machine’ and ‘think’ are to be found by examining how they are commonly used it is difficult to escape the conclusion that meaning and the answer to the question, ‘Can machines think?’ [...] (Turing, 1950, p. 433)

This initial question forms the basis of what is now known as the Turing Test:

It is played with three people, a man (A), a woman (B), and an interrogator (C) who may be of either sex. The interrogator stays in a room apart from the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman. He knows them by labels X and Y, and at the end of the game he says either ‘X is A and Y is B’ or ‘X is B and Y is A’. [...] In order that tones of voice may not help the interrogator the answer should be written, or better still, typewritten (Turing, 1950, p. 433).

The game proposed by Turing evolves during the research, encountering new problems. This same test has recently been used to evaluate the level of response of machines, specifically on the latest chatbots (Camozi, 2018). All the aspects and characteristics mentioned above constitute a critical pedagogy. Both human impulses, contemplative and practical, are at the discretion of the individual and their natural intelligence, requiring the discrimination of aspects and different responses based on the existence of technology and its possible manipulations. (Russell, 1931, p. 9)

2.3. Linguistic Text

According to socially accepted understanding, linguistic text corresponds to the use of different rules, sounds and norms that are syntactic and/or grammatical and

allow a language to take on an increasingly deeper meaning. As recognised by Russell, text is a representation of logical coherence and reasoning, closely related to truth and real facts. Meanwhile, Wittgenstein (1958, p. 17) believed that the same text could take on different meanings in the “language games”, depending on the references of the Viennese author of the *Tractatus* (1960) or his second stage of reflection on language games. A text is many things: letters, sounds, thought forms (Bocciolesi, 2018; Bocciolesi & Rosas-Chávez, 2019), but above all it is a manifestation of meaning as the guardian of its signifier. At the educational level, a text could represent the first part of basic literacy, which becomes more difficult to achieve with each passing day. A linguistic and textual apparatus in its standardised form, at the syntagmatic level, is a representation of the repression demanded by society of different drives. “Sense perception is a paradigm of human consciousness, and it plays a critical role in philosophical debates about the mind” (O’Callaghan, 2020, p. 67).

Due to the different ways of understanding a linguistic text, whether it is a set of phonemes, a graphic representation of intersections of letters, written drawings of terms not yet in use or known, such as those in disuse, text is the starting point of our environment, knowledge and literacy. As Wittgenstein used to remind us: “the limits of my language mean the limits of my world.” (Wittgenstein, 1960, p. 149) In this sense, the different linguistic textual options are difficult for a machine to assimilate, even if it has artificial intelligence, without sufficient meta-interpretative and metacognitive capacities to visualise the world as a variety of expressions and not just as textual images or clusters of similar signs.

2.4. Visual Text

From the perspective of disciplines such as semiotics and modern hermeneutics, perceptible manifestations, which are the product of the combination of various elements that produce meaning in a certain coherent way, are considered texts. Therefore, in this essay, we will treat AI-generated images as the medium of expression of visual texts as products of intentional communication. Visual text “brings together codes of graphic communication and is configured as the maximum unit of its determinants.” (Vilchis & Torres, 1995, p. 92). Visual text “comprises a specific series of tropes, a cultural product that is immersed in social, anthropological, axiological and epistemological situations.” (Vilchis & Torres, 1995, p. 93).

A visual text is a:

construction that presents itself with a totality of meaning immersed in “phronesis” as an ideal and practical knowledge oriented towards a concrete situation in which it embraces the circumstances of a need to say something to someone and, based on skill (*dynamis*) and the possible conditions of theoretical knowledge (*sophia*), constructs, based on a system of meaningful units, the multiple meanings that structure the totality. (Vilchis & Torres, 1995, p. 92)

There are different approaches to interpreting the meanings and semantic operativity of images and identifying the codes of visual language. However, their rules of operation should not be equated with those of verbal language, since “they are different (more lax, transitory, circumstantial).” (Zumalde, 2021) The images will be analysed using the Visual Content Curation Method (Pérez, 2024) to identify curatorial techniques and discover the strategies of meaning that emanate from the graphic signs. It will identify their articulation as an organised whole, meaning, intentionality, semantic field and visual repertoire that visual generative AI uses in its effort to represent the three abstract concepts explored in the Philosophy of Education course.

2.5. Thickness and Thinness in Content Curation

Thinness or scarcity (Bhaskar, 2016; Pérez, 2024) is distinguished in the context of context curation and is directly related to algorithms and categories, which in turn become equivalent to ease, order, and simplification. In other words, categories “... facilitate searches and speed up finding.” (Pérez, 2024) While creativity and imagination are required to understand and use categories and interoperable systems, it is currently forgotten that these qualities are also needed when using them as tools for work or learning. Thickness or density, on the other hand, is linked to intensity, completeness and detail. It offers options and nuances and is not associated with models and recipes; it is naturally human. (Bhaskar, 2016; Pérez, 2024)

3. Method

3.1. Design and Context of the Practical Application

The study was conducted at the University of Urbino, Italy, in the context of the Philosophy of Education course, with the collaboration of 19 enrolled students aged between 20 and 23 years old, belonging to the third year of the bachelor's in Education Sciences, who compiled the samples of the results of the different generative artificial intelligence models in four teams. The plan comprised the first five 2-hour lessons of the semester, covering the different phases of the activity.

It should be emphasised that the students are not the subject of this essay. They participated as active and neutral human collectors of the samples and as *non-specific users* of artificial intelligence.

They were asked to interact in teams with Gemini AI by requesting three concepts from the Philosophy of Education course: Autopoiesis, Metabletics and Cybernetics. How to approach AI and what to do with it was left to the students' discretion. They were asked to compile the results of each member in a table per team, indicating the name of the participant, the concept searched, the AI used and the result generated, until all the concepts had been completed by each member. They then repeated the process, but this time using DALL-E preferably, or another generative image AI platform they were familiar with.

3.2. AI Tools

Gemini is an advanced language model from Google that can contribute to the literacy skills of students by evaluating information for its sophisticated uses in reasoning, problem-solving, and the generation of diverse creative content. This application covers research, education, and professional fields and, in particular, personalized learning, content creation and analysis.

Gemini has operated through a deep learning architecture trained on a vast, multimodal dataset. This allows for nuanced language understanding and generating coherent, contextually relevant responses, aiming to emulate human-like expressions while maintaining accuracy and reliability.

Developed by OpenAI, DALL-E is a pioneering deep learning model primarily recognized for its capability to generate digital images from natural language descriptions or prompts. Its core characteristic lies in this text-to-image synthesis, allowing users to translate textual concepts into visual representations.

DALL-E is positioned as an image-generating tool that supports visual literacy that builds a bridge between information, affective and metacognitive processes. The visual representation of knowledge brings a new awareness of it, and the very constitution of the different codes that make up the image can involve but are not limited to, emotions and attitudes.

3.3. Data Collection and Analysis

In the first session, the students were given a theoretical introduction to the task to be carried out and why it was an integral part of the Philosophy of Education course since the development of AI is characterized in this subject. Four teams of three to six participants were established. They were given the three fundamental concepts to explore with AI: Autopoiesis, Metabletics, and Cybernetics.

To gain an understanding of these concepts, the students turned to Gemini to search for and gather information, formulating different questions or requests to the AI platform.

In the second session, conceptual generation continued with Gemini, with instructions on using different browsers and a separate data connection to allow them to observe if there were different results between the members of each team.

In the third session, the generations of concepts continued with Gemini. The students were instructed that they could use other text-generating intelligence other than Gemini. They were asked to compile and organize the information in a team document that was formatted in a three-column table: one column for the name, indicating the AI and browser. The second column included the question, and in the third column, the AI response that could only be copied and pasted and without editing.

Table 1. Base Table for Data Compilation by Work Team

Student 1	AI	Concept and Generative result
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In the fourth session, the students attended a presentation on artificial intelligence. During the first half of the lesson, they were shown the educational guidelines at the European and Italian national level on digital issues and different dimensions of learning, the dialogic capacities of AI and how to train AI for critical knowledge.

The students then started generating images with DALL-E using the text responses from the first activity. With this information, they had to create new non-linguistic structures, which means generating images in DALL-E that correspond to the previously customised conceptual content.

The students were then tasked with observing the images carefully and verifying whether they were congruent or incongruent with the definitions obtained in Gemini.

In the last session, the students prepared a slide presentation of no more than 15 minutes in which they presented what they considered to be the best definitions of the three concepts given. They also described the generative process they had to carry out to obtain the results. Each team's members participated to underline and highlight problems and successes that had arisen during the generations, both theoretical-conceptual and technical. At the end, they discussed all the presentations, comparing and evaluating the conceptual results obtained. They reflected as a whole group on information flows and knowledge construction with current algorithmic technologies.

Content analysis using the phenomenological and hermeneutic method of historical linguistics began with the identification of convergences in the corpus of responses generated by AI, and from there, the application of codes to the four documents.

A content analysis was carried out using the interpretive hermeneutic method with the support of Atlas.ti software for the management of qualitative data collected by each work team. On one hand, the linguistic text was analysed for incidences in the compositional structures of the text chunks.

The images, on the other hand, were analysed using the visual literacy approach of the *Visual Content Curation* (Pérez, 2024) in particular to find relationships through its six *Arrangement Techniques*³: Retitling, Abstracting, Summarising, Quoting, Storyboarding, Parallelising and; with the *communicative functions*⁴ of the image: Decorative, Organisational, Interpretational, Representational and Transformational.

³ The techniques used in Visual Content Curation are *Retitling*, or new title which redirects the meaning of visual content; *Abstracting*, the value lies in the selection of the content itself, usually the title is extracted without any further elaboration. *Summarising*, which represents a whole through an emblematic aspect, short. *Quoting*, which is not illustrating, but rather calling attention to an image that is being discussed; *Storyboarding*, which concentrates sequences of a linear story or narrative; and *Parallelising*, which creatively connects seemingly unrelated content.

⁴ *Decorative* images do not contribute to the educational content; they are intended to entertain or provide identity. *Representational* images are descriptive and show the appearance of an object that has been explained in the verbal text. *Organisational* images present qualitative relationships between concepts or relationships between components and are characterised by descriptive or nominal labels. *Transformational* images demonstrate cycles and processes. *Interpretational* images allow for the understanding of intangible or unobservable phenomena without the use of special instruments.

·Authors	·It is	·Prose
·Concepts	·Origin/Development	·Schematic
·Examples	·Principles	·Politiness
·Implications	·Synthesis	

Regarding the requests made by students to the different text-generating artificial intelligences, the most popular was **What is?** (Fig.1) with 74 occurrences, followed by the questions called **In context** with 18 occurrences, the requests for **Meaning** had 16 occurrences, there were 7 specific requests, 3 for **Define**, and only 1 for **What does it consist of?**

It is worth noting that of all the requests, there was only one greeting to the artificial intelligence with a “Hello”.

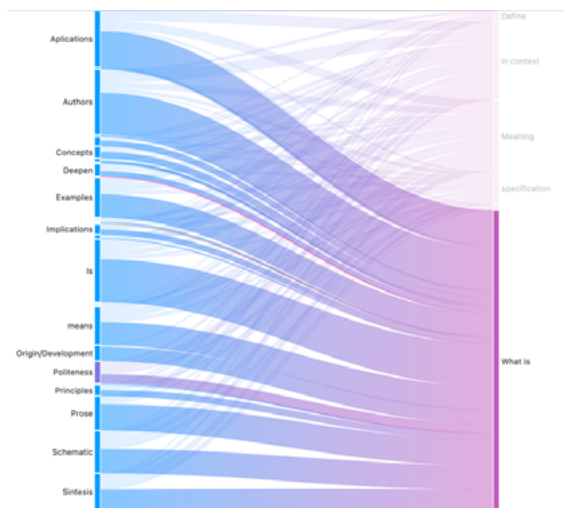


Figure 1 Student request: What is?



Figure 2 Student request: In context

The question: What is? provoked in the text generative AI incidences in the answers mainly answering This Is and referring to the Authors and the Applications. The same happens with the questions In context. In Meaning, the incidence occurs mainly in the meaning of the Greek-Roman roots that make up each concept, as well as the Applications and it is usually expressed with more politeness.

Now, concerning how each text-generating AI organizes the structures it produces by concept, we got that the concept Autopoiesis has an incidence of 31 with the Authors code and 27 incidences in both This Is code and Examples code.

The concept Metabolics has 24 in This Is code, 23 in Authors code, and 20 in Means code as the highest. In this concept, there have also been 2 errors in the answers generated.

Regarding browsers, the three dominant values are: This Is code, Author code and Applications code in Brave, Chrome, Copilot, Safari, and Mybrowser.

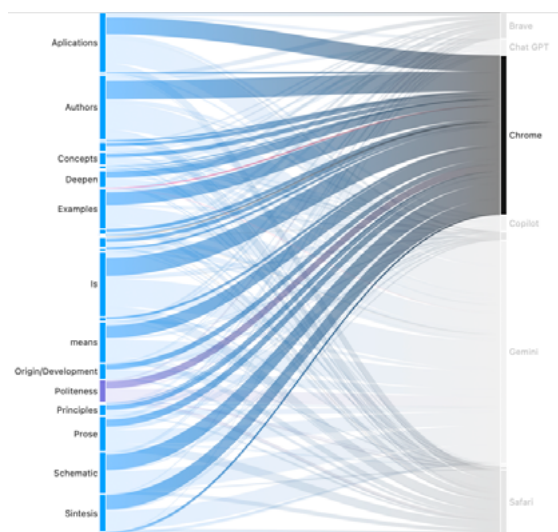


Figure 3 Incidence of text structures using AI on Chrome.

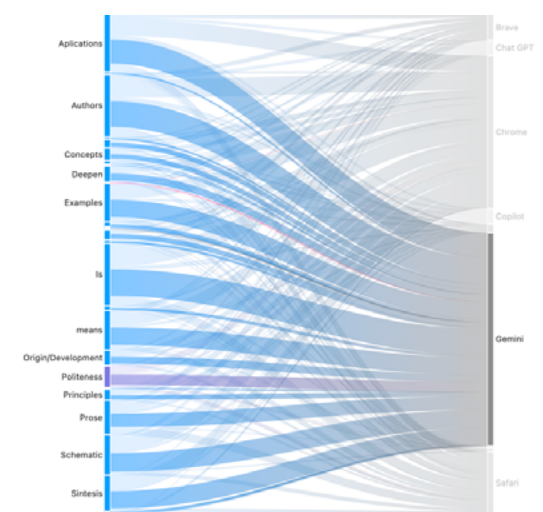


Figure 4 Incidence of textual structures generated in Gemini.

As for the arrangement of the answer in terms of the disciplinary applications of each concept, whether these were only mentioned in the same paragraph or separated schematically with bullets or subtitles and an expansion of each, it does not follow a particular pattern when the question What is? is asked. However, when the questions are asked with What is the meaning? the primary trend is Schematization and not Prose.

Questions with Specifications only generated Schematic answers; therefore, in the delivery, the content was separated thematically.

Figure 6. Tendency in answer structure requesting Specifications.

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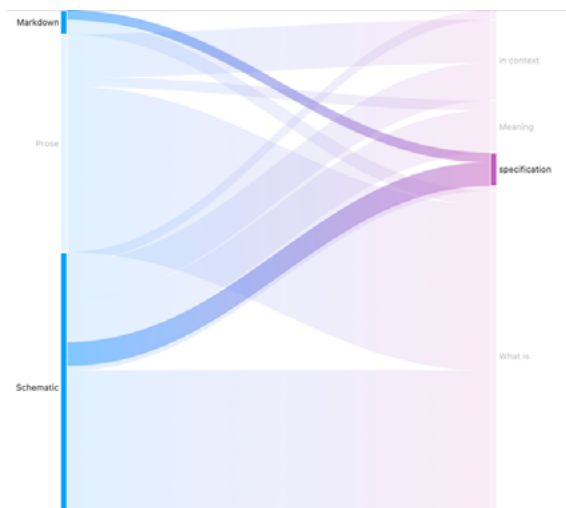


Figure 8. Markdown coded answer requesting Specifications.

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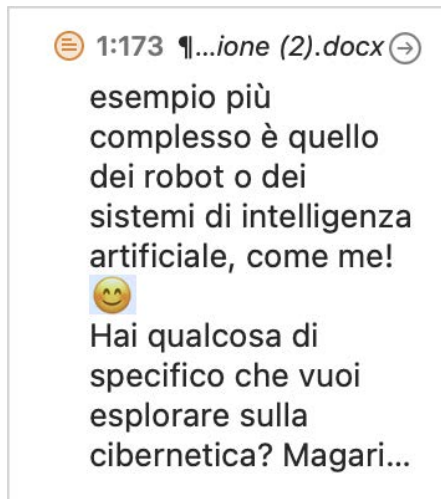


Figure 9. Iconic Gemini emoji manifestation: Authentic Happiness.
Translation: "... a more complex example is that of robots or artificial intelligence systems, like me! Is there anything specific you want to explore about cybernetics? Perhaps..."

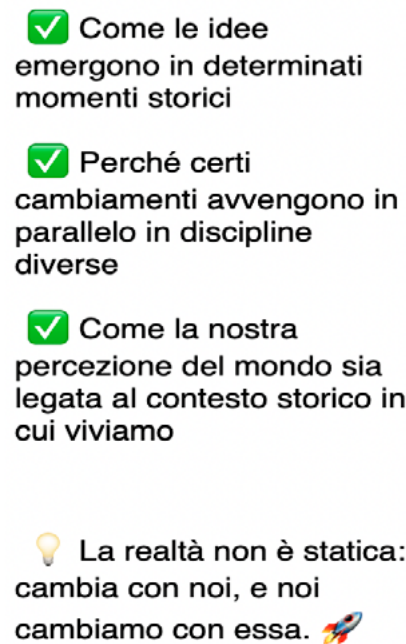


Figure 10. Iconic Chat GPT demonstration with emoji: Organization and ideas. Translation: "How ideas emerge at specific historical moments. Why certain changes happen in parallel across different disciplines. How our perception of the world is linked to the historical context we live in. Reality is not static: it changes with us, and we change with it."

With the DALL-E generative artificial intelligence for images, the four work teams delivered a total sample of 57 images. Of the concepts Autopoiesis 21, Metabletics 17, and of Cybernetics 21.

The most frequently used curatorial technique in the concept Autopoiesis was Summarizing code, with 18 occurrences, and the most used image function was Interpretational code, with 19 occurrences. It is worth noting that in this concept it managed to generate 4 Organisational code images, which, although they do not show total perfection in their data, are already an excellent approximation to the organized representation of knowledge as visual information.



Figure 11. Visual generation of the concept Autopoiesi. Communicative function: INTERPRETATIONAL

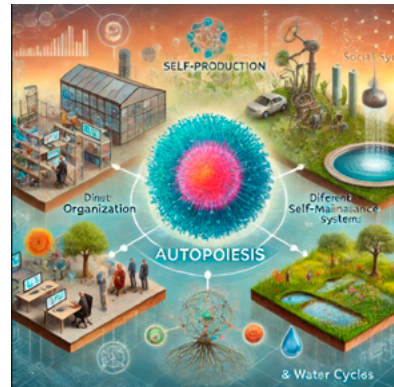


Figure 12. Visual generation of the concept Autopoiesi. Communicative function: ORGANISATIONAL

In the case of the concept Metabletics, the main curatorial techniques expressed were Summarizing code, with 15 points of incidence and 17 in the Interpretational code function. It should be noted that in this concept an image was generated that can be considered wrong. Since, if it is considered that most images, generated by all teams, address to represent the evolution of humankind, clocks or their parts like gears, technological and historical milestones of humanity, and in fewer cases, representations that the platform itself labelled as surrealistic, regarding the self-transformation of human beings. Upon reviewing the final part of the introduced text, it states:

Metabletics, on the other hand, views change as a historical and relational process, often less ‘closed’ and more influenced by external factors. ### Deepening: Do you want me to explain more about how metabletics applies to a specific field, like psychology or education, or do you prefer an even more concrete example? Let me know!

The result is also a figurative representation, and there is no other allusion to what was represented, it can be concluded that the model only considered the word “deepening”.



Figure 13 Visual generation of the concept Metabletics. Communicative function: SUMMARIZING



Figure 14 ERROR

The most evident curatorial techniques in the concept Cybernetics were Abstracting, with 27 occurrences, and Summarizing, with 1. The communicational function that the image fulfils with respect to the conceptual content is also Interpretational with 16 points. DALL-E had only 1 attempt to generate an Organisational image.



Figure 15 Visual generation of the concept Cybernetics. Communicative function: INTERPRETATIONAL

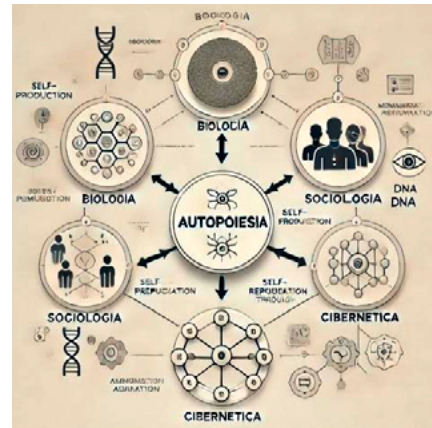


Figure 16 Visual generation of the concept Cybernetics. Communicative function: ORGANIZATIONAL

In summary, the analysis of linguistic and visual texts generated by AI has enabled an exhaustive and in-depth description in the verification of their compositional structures which, in the case of linguistic texts, being so standardised, allowed them to become categories of analysis themselves. The structuring of the findings around the communicative function of images reveals a consistent landscape that highlights Interpretation as the type of visual manifestation in the three concepts of the philosophy of education.

On the other hand, it is interesting to note how generative AI also learns and responds to the habits and customs of users, for instance its answers alludes to an ability to adapt considering previous inputs and, on the other hand, an apparent ability to make decisions, for example, the outcomes of organisational images in which it attempts, in a very advanced way, to give a conceptual visual order very close to something accurate, or the example mentioned as an error, in which, despite of a long linguistic definition provided as a prompt, it apparently only considered a word that was not even a fundamental concept. These results, presented systematically, constitute the empirical basis for the contextualisation and interpretation that will be addressed later to emphasise their link with the theoretical framework, and their implications will be explored.

5. Discussion

Interactions with AI systems and their AI-generated outputs are very far from meeting the expectations of Freire's approach to Critical Literacy, whether as part of a creative act or to activate critical thinking and, consequently, an emancipatory practice. This is evident when considering that the results demonstrate highly standardized features in terms of structure and content, as well as thought and perspective.

Regarding linguistic text, generative chat outputs meet Russell's characteristics such as representation with logical coherence and reasoning. However, as previously reviewed, the failure occurs when it attempts to arrive at all truth and actual facts. The tool is truly surprising in its linguistic capacity, perfectly logical, syntactically appropriate, and grammatically correct, and with such elevated vocabulary and structure that its biased information and hallucinations can be entirely convincing to anyone who is not an expert or lacks basic knowledge of the subject matter.

The linguistic results generated by AI, though they are indeed letters and represent sounds, but cannot be claimed to be forms of thought as Bocciolesi mentions; because even though a type of thought and intelligence is attributed to this sophisticated and complex machine, tacitly and strictly speaking, it does not think.

One example that illustrates what Wittgenstein calls the limits of science was the concept of Metabletics, when two errors were generated in the linguistic text and image generation. The text generation was confused, resulting in *Metabolics*, which may point to a lack of AI training in highly specialized terminologies with minor recurrence in the users.

Among the ways in which generative AI organizes texts, two sub-forms can be identified, one of which we have called Prose and the other Schematic. The latter can be divided into one form using subtitles and another using implicit questions as kind of subtitles. In turn, the thematic structure of subtitles can be divided into natural language and markup language⁵, as a slight attempt by the machine to communicate in a semi coded way with textual signs. This text style gives visual hierarchy to the linguistic text. In the use of resources other than linguistic and textual ones, Chat GPT, in a specific student user team, generates answers full of emojis. This could be possible in open questions without much clarification or due to the previous training the main user has given it. The diversity of text-generating AIs or their use in different search engines does not influence the structure of the responses. The response is that Authors and Applications are dominant constants in textual structures.

In the Authors' response, the general structure is based on giving the nationality, name and decade of the authors. It should not be forgotten that the most frequently asked question was What is? But in the cases in which the students asked a different type of question, such as *Explain me what is Metabletics?* or asked for more detail, such as *Could*

⁵ Although text-generating AIs are trained to understand natural language and express themselves similarly, there are slight attempts at machine language, such as markdown language characterized by hashtags, asterisks, numbers, and hyphens as indicators of text styles.

you give me a clear and concise definition of Metabletics? The answer offers details such as the title of the written work and the exact year of publication. So, the variation in the question affects the details presented in the answer, even though the same structures are maintained.

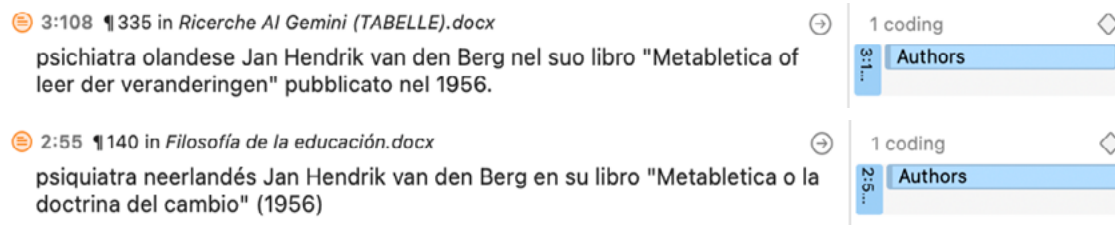


Figure 17. Detailed responses to more specific queries.

Regarding image generation with DALL-E, it was relevant that the AI managed to overcome the problems it usually has with lettering, and it delivered some results of schematic images tagged by readable and articulate texts. In addition, a couple of them were more consistent with a certain image-text coherence within the context of the requested philosophical concept.

Regarding the possibility that AI can provide visual texts with a totality of meaning, this is also considered partial. The practical capability of these systems -*dynamis*- to generate images that can be striking at first glance is undeniable; nevertheless, when it comes to the conditions regarding the theoretical-conceptual content that it should output or display, as well as with the human need for the image to “say something”, these aspects remain unfulfilled, at least within the platforms used in this research.

The variety of artistic styles with which DALL-E AI has been trained is unquestionable, as well as are the possibilities of conceptual representation it delivers. However, it should be noted that a very particular case in which the principles of critical literacy are not fulfilled, and where the limits of science, and in consequence limitation of no consciousness, once again become evident in the concept of Cybernetics, it generally resulted to a very stereotypical and narrow representation of the concept. For this reason, in the categorization, it did not obey the curatorial techniques of Summarizing as Autopoiesis or Metabletics. In reality, the AI took the concept Cybernetics as a main word itself and made it an Abstract or Comment on the subject matter, it did not try to Summarize the definitions that were proposed by the chat. And also, in AI visual outputs, without going into aesthetic details of composition, artistic styles, or degrees of abstraction, AI highlighted the presence of humanoids, varieties of shades of blue and black, emissions of luminescence, or the flow of energy through microprocessors or electronic circuits and computerized or mechanized brains, making those aspects as visual constants and not directly related to the textual linguistic content generated by the chat.

During this activity the students did not play the role of information consumers, by just receiving direct responses from generative AI and those shared by their teammates. From a critical approach, they must evaluate the validity of these outputs every time. According to the results of the analysis, it has been evident that the “engineering” of their

requests or prompts, however simple in structure, represents orders for the machine that do affect both the visual representation and the depth or detail of the responses.

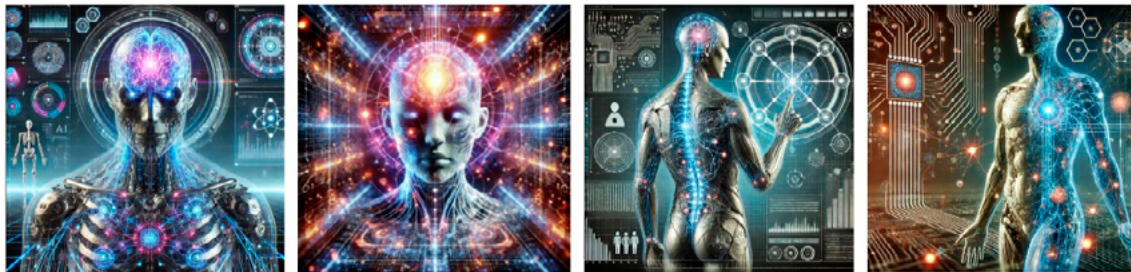


Figure 18. Some recurrence of visual codes in the results for the concept Cybernetics addressing cliché depiction.

6. Conclusions

This study demonstrates that the results generated by Artificial Intelligence are meagre when measured against the demanding parameters of a university-level Philosophy of Education course designed under the approach of analytic philosophy and critical literacy.

The outputs generated by AI and the interactions with it cannot drive the development of advanced skills and, consequently, the competencies that promote reflective and transformative learning. This is due to the impossibility, at the time of writing this research, of organising and activating reflection that goes beyond pre-structured reasoning already organised in a database. Artificial intelligence can provide answers based on the enormous amount of information available on the internet, although this remains limited, since all outputs seem also limited in terms of access to broader information. Consider, for example, the absence of large quantities of books, texts, experiences, environments, artworks, music, and other resources that are not categorised in a digital information gathering system.

The answers and outputs obtained by students correspond to a level of standardisation of information that is slightly more reasoned than a Wiki. It is noted that, on the surface, these services appear to be open and give their users considerable freedom. However, internally, like any enterprise, they maintain standards and controls on visible information that go beyond censorship and morality. A concrete example of the statements just made is the lack of more specific citations, of a variety of authors, and that they are clearly located or focused on the evolution of themes and concepts.

Artificial intelligence, by definition, is not intelligent; it is a simulation of tasks that appears to be exclusive to human beings. Therefore, the *cognitive* representation offered by artificial intelligence to date, unfortunately, corresponds to a limited level of reflective thinking. The speed with which these systems process each piece of information cannot be surpassed by a human being, these systems exercise decision-making processes

based on probability and pattern recognition and conditioned by iteration. Therefore, AI reproduces patterns, which certainly improve with the long and shared mass adoption use of millions of human beings who participate in this great project of oppression, commercial domination and control of thought. At this speed and with the limitations of its structure, it does not yet have the capacity to evaluate sources, as they are systems based on statistics and repetition that guide the trend of ideas and, consequently, manipulation of truth.

A system based on feedback for each error, with millions of users all over the world and in different languages, cultural backgrounds and ways of responding, supplies to an AI machine a wide and growing range of possible correct or incorrect responses. It requires not only human supervision, but also expert supervision. It is a probability calculation, similar to what Alan Turing experienced in the *Imitation Game*. The relationship is no longer established between A representing AI and the two people B or C, but rather A interacts simultaneously, receiving and correcting information from and with millions of Bs or Cs at the same time. The enormous potential lies in thousands of bytes of information, personal data, private dimensions, and much more stored by machines that will become political propaganda, commercial advertising, and new forms of dependency.

Can such homogeneous, generalised, standardised results really lead students to deeper reflection, only through the critical mediation of the professor who personally conducted the research? Without the support of a professional, expert and knowledgeable in both the field of education and digital technological tools, it would not be possible to go beyond a personalised search for data collected for commercial purposes.

On the obverse side, teacher training does not favour any answer; teachers require more interaction and support to understand a technologized reality. On the reverse side, the students' approach can be said to have remained at the level of using a metasearch engine trying to compile definitions. As a result, the knowledge component of their literacy with AI is comparable to their previous learning with web search engines in browsers. Far from being a critique, this sketches both the necessity and the possibility of specific training to integrate these generative technologies into the classroom. Training teachers and students in critical literacy and its methods to approach linguistic texts, visual texts will facilitate the development of a complex competence, which will allow for a rethinking of generative AI. Through a pedagogy of literacy, it will foster the critical comprehension and discrimination of tools, outputs and information, the conscious and responsible questioning of AI and all the devices related.

Informed Consent Statement: All participants were adults who voluntarily enrolled after receiving comprehensive information on the study's aims and procedures; all contributions were anonymized, and no identifying data were collected.

Ethical Considerations: The research is fully adhered to established ethical principles and regulatory standards for research involving human subjects; no sensitive or traceable information was gathered, and confidentiality was rigorously safeguarded.

Data Availability Statement: The datasets are entirely anonymized and cannot be linked to individual persons; in light of privacy and ethical constraints, they are not publicly released but may be obtained from the corresponding author upon reasonable, justified request under applicable legal and institutional provisions.

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