Education in the use of artificial intelligence through prompt engineering*

Edutética en el uso de la inteligencia artificial a través de la ingeniería de prompts

Juditas Delany Torrealba Dugarte*
https://orcid.org/0000-0001-6472-1518
Guasdualito, Apure state / Venezuela

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** PhD Student in Education, Unellez, Apure - Venezuela. M.Sc. in Education with a Mention in University Teaching, Professor in Integral Education (Universidad Pedagógica Experimental Libertador). Specialist in Administrative Law, Universidad Católica del Táchira - Venezuela. Doctor in Legal Sciences, Universidad Central de Venezuela. Postdoctorate in Philosophy of Sciences and Research, Universidad Latinoamericana y del Caribe. Undergraduate and Advanced Studies Teacher, Unellez, Barinas and Apure. Email: jurisprudenciaubv@gmail.com

Abstract

The present essay aims to address the topic of ethical education in the use of Artificial Intelligence (AI) through Prompt Engineering. AI represents a constantly growing and evolving discipline, seeking to endow machines with human-like capabilities such as learning, perception, and reasoning. Prompt Engineering, on the other hand, refers to the technique used to guide and control the behavior of artificial intelligence systems through specific instructions. In this sense, it is essential to analyze the importance of eduethics, i.e., ethics applied to education, in the context of artificial intelligence, to ensure a responsible and beneficial use of this technology in various fields.

Keywords: Eduethics, Artificial Intelligence, Prompt Engineering.

Resumen

El presente ensayo tiene como objetivo abordar el tema de la educación ética en el uso de la Inteligencia Artificial (IA) a través de la Ingeniería de Prompts. La IA representa una disciplina en constante crecimiento y desarrollo, que busca dotar a las máquinas de capacidades humanas como el aprendizaje, la percepción y el razonamiento. La Ingeniería de Prompts, por su parte, se refiere a la técnica utilizada para guiar y controlar el comportamiento de los sistemas de inteligencia artificial mediante instrucciones específicas. En este sentido, resulta fundamental analizar la importancia de la eduética, es decir, la ética aplicada a la educación, en el contexto de la inteligencia artificial, para asegurar un uso responsable y beneficioso de esta tecnología en diversos ámbitos.

Palabras clave: Eduetica, Inteligencia Artificial, Ingeniería de Prompts.

Education in the use of artificial intelligence through prompt engineering

In today's rapidly evolving world, the use of Artificial Intelligence (AI) through large Natural Language Models (NLMs) is becoming increasingly common across various disciplines. This trend makes it essential for the current educational sector to be proficient in utilizing AI. However, the rise in AI use, coupled with the lack of proper instruction in AI, has led to the distorted use of Natural Language Models such as CHAT GPT, BING, PERPLEXITY, GEMINI, AITHOR, among others. This has resulted in significant consequences, particularly in the generation of prompts in a specific manner or their large-scale use under a wide range of orders (Prompt Engineering).

The unfair application of AI, especially when it is not cited as a source of consultation or its arguments are not verified for reliability, poses a manifest risk in the Facilitator-Participant relationship. A Facilitator-AI-Participant triad is created, which, without the proper knowledge of Prompt Engineering by the educator, can push the Facilitator into a completely passive role. This prevents the generation of critical contributions in the teaching-learning process amidst the unstoppable use of Artificial Intelligence currently occurring.

This essay will argue that education in the use of AI is necessary and that Prompt Engineering can help improve education through the application of AI, as well as prevent the misuse of technology. However, there are also opposing views that maintain that education involving AI interaction is neither necessary nor efficient in all educational settings. Additionally, misuse of AI can still occur repeatedly, even with proper knowledge of the tools that comprise Prompt Engineering and the types of prompts that should be requested from the language model.AI is becoming increasingly common in many sectors of daily life (both academic and professional), making training in its ordinary application necessary. Various scientific fields are already using AI to enhance efficiency and accuracy. As a result, the demand for professionals with AI skills and the potential of students and facilitators in this field is increasing. Without technical knowledge, a large sector of society may struggle to adapt immediately to the changing academic and professional world surrounded by Artificial Intelligence, making this knowledge crucial for the present and future professional workforce.

However, although Artificial Intelligence through the use of Natural Language Models (NLM) provides immediate answers to questions much faster than the basic thought process generated by humans, intellectuals like Chomsky, linguist Roberts, and AI expert Watumull (2023) have expressed that:

> ...the "supposedly revolutionary" advances presented by AI developers are a source of "both optimism and concern." On the optimistic side, these advancements can be useful in solving certain problems. However, on the concerning side, "we fear that the most popular and trendy variety of artificial intelligence (machine learning) may degrade our science and debase our ethics by incorporating into technology a fundamentally flawed conception of language and knowledge.
>
> As useful as these programs may be in specific areas (such as computer programming, for example, or suggesting rhymes for light verse), we know from the science of linguistics and the philosophy of knowledge that they differ profoundly from the way humans reason and use language (p. 13).

This therefore leads to a duality in the rise of Artificial Intelligence and consequently the mode of reasoning presented by the use of Prompt Engineering. Regarding the critical factors that characterize and represent human-machine interaction, the introduction of Artificial Intelligence (AI) into the educational context can be compared to the phenomenon described by Hannah Arendt as the "banality of evil." Arendt (2013) asserts that some individuals act within the rules of the system to which they belong without reflecting on their actions. They do not worry about the consequences of their actions, only about following orders. The mechanization that AI through Prompt Engineering can provide may yield similar results.

On another note, authors like Margaret Boden, Ray Kurzweil, and Eliezer Yudkowsky have emphasized the importance of AI and Prompt Engineering as significant tools for the advancement of humanity. Boden, an AI specialist at the University of Sussex, Kurzweil, Director of AI at Google,

and Yudkowsky, an AI expert known for his theory of Friendly AI, have highlighted the potential benefits of these technologies.

However, Boden (2023), from a more conservative perspective, argues that balance is necessary. She asserts that we must differentiate between the knowledge of AI and the wisdom that the human mind has developed over its evolution. In this context, embracing the precepts of these authors gives rise to the concept of Eduethics, a set of principles aimed at maintaining balance between technological advances and human knowledge.

Therefore, Prompt Engineering can help improve education oriented towards AI knowledge by providing a structured approach to designing these advances with integrity and efficiency. Educators can identify areas where students may need additional support with the assistance of AI. By using Prompt Engineering, educators can create a curriculum that meets the needs of all students and prepares them for the future academic and professional market. It is in this dimensioning of Eduethics in AI applicable to Prompt Engineering that the opinion of researcher Bryson (2024) is relevant, who states that:

> Ethics in AI goes beyond being a mere theoretical discourse; it is a fundamental pillar for keeping our society united. Ethics presents itself as a form of policy that can be improved through greater scientific and social knowledge. By adopting a human-centered, transparent, safe, and responsible approach, we ensure that AI is used in a way that benefits people and the planet (p.2).

Thus, ethics, when focused strictly on education, can help prevent the misuse of technology, which can have severe consequences, including discrimination and bias. Educated individuals are less likely to misuse AI and more likely to use it responsibly and coherently, avoiding Arendt's (2013) concept of banality, as previously explained, and instead generating a collective benefit.

Education in AI may not be necessary for all fields, especially in the social sciences, where it is crucial to look through various critical perspectives at major social issues and reflect on them. Thus, a balanced approach to AI as an auxiliary, a support, a helper to facilitate certain tasks, does not imply that it replaces human thought entirely. Issuing orders or prompts often should provide referential scenarios rather than conclusive elements, given that all environments and groups are heterogeneous.

Therefore, eduethics dictates that the educational realm must uphold a series of values to sustain a healthy interaction with Artificial Intelligence, such as:

- **Equity:** AI through Prompt Engineering should be used equitably and without discrimination.
- **Transparency:** AI systems should be transparent and understandable to users, avoiding prompts that may cause confusion.
- **Privacy:** Personal data must be protected.

- **Responsibility:** Those responsible for using AI in education must be accountable for their decisions, ensuring that the orders given do not exceed what is requested.

By basing eduethics on these fundamental values, the necessary balance in the teacher-AI-student relationship can be promoted. Factors like student information should only be collected for specific educational purposes with the consent of students or their parents, and data should be anonymized. Additionally, orders and prompts should be designed to minimize bias and be regularly audited to detect and correct biases that could affect the validity of the information obtained.

Eduethics also aims to inform students about the use of AI in education. It seeks to create regulations clarifying that AI is a helper, not a tool for triviality, establishing mechanisms for lodging complaints and claims regarding its distorted use. In the realm of research, students should learn about AI's potential and the ethical risks and challenges of its misuse. They must also be critical and authentic about the outputs provided by AI, recognizing that these outputs are neither infallible nor entirely reliable. It is essential to eradicate the glorification of cheating through the use of orders or prompts and instead build a fully transparent scenario that allows for proper evolution.

In conclusion, this essay has outlined the impact of AI, addressing various terms, critical stances from both detractors and proponents, its effect on education, and the need for ethical alignment for its existence. The author asserts that AI has the potential to improve education in many ways, but it also presents challenges that must be considered. Only through constructing models designed for its use can these be addressed effectively.

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