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CYBERSPACE TECHNOLOGIES: ETHICAL FOUNDATIONS AND TASKS OF EDUCATION

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Abstract: This paper presents a set of premises that characterizes the emerging technologies inscribed in cyberspace, which today permeate and govern the forms of communication, work and relations of human beings with nature, among others, and the role of education in the criticism and reflection of its development. The objective of this continuous exposition is to contribute elements that allow reflecting on the ethical action of the exponential, permanent and present development of digital technologies in virtual space, through the dialogic practice that contributes elements to an education that liberates or alienates. Thus, the development of this reflection is built on four sections that, as a whole, respond to the question: what ethical foundations help education to face the dominance of cyberspace technologies that liberate or alienate? The answer gives an account of the characteristics that can enhance one or the other condition. To this end, the following are presented: a) the neutrality of technology that imposes itself with the creation of needs; b) the self-propagation of technology as a practice that exceeds the current levels of individual, collective, national State and world State responsibility; c) the presentation of the messianic role to fetishize its power; d) the encouragement of caution in the development of technology in education; and final reflections.
Keywords: cyberspace, ethical foundations, educational challenges.

CONTEXTUAL BACKGROUND

The so-called digital technological revolution has grown exponentially, in such a way that it is starting to get out of control, especially due to the inherent features of its development and the complex problems it generates. This phenomenon was activated "since the beginning of this century, but this speed has been more evident in the last year after the COVID-19 pandemic, which has represented greater complexity" (Díaz and Castillo, 2023, p. 97). One of the results is inscribed in the social interaction that is permeated by a digitalization that initiated and motivated "the development of these technologies: distributed, flexible, changing networks, with development of new tools and practices from commercial ventures" (Claro, *et al.,* 2021, p 38). This explains the nature of this technology and the paths followed by its expressions, marked by a business context of profit aims and logics.

The present characteristics show: the effects of their actions are not so evident; the emergence and confluence of a wide range of actors; the power relationships that develop with the use of their *software;* the hidden practices to co-opt customers. With the idea of explaining this complexity, the interest arises, to contribute elements that allow to reflect on the ethical action of the exponential, permanent and present development of digital technologies in the virtual space; on the one hand, to demystify the scope of this technology, by showing the features of alienation and, on the other hand, to show the elements that contribute to liberation.

Here are some data on connectivity and digital social inclusion in Mexico in 2020:

> According to INEGI, 70.1% of the Mexican population is an Internet user, and 56.4% of households have an Internet connection, while in rural areas it is only 23.4%; meanwhile, the growth rate of telecommunications investments was 26.2%. (INEGI , 2020; 2022, as cited in Díaz and Castillo, 2023, p. 108).

TECHNOLOGY NEUTRALITY AND CREATION OF NEEDS

It would seem natural to think that digital technology would arise to meet needs that transcend in: the improvement of communication; access, speed, availability and management of large amounts of specialized information. However, the role of education is to

go beyond the aspirations that are imputed to it, to transcend in the responsibility of the actors of the educational communities for what they think, say and do, through reflection and criticism of the essence of their institutions. Starting from the fact that to reflect is to think the reality beyond the evident, from constant questions in order to get closer to it. In the apprehension of virtual reality, beyond what common sense perceives. It is worth asking: "how does cyberspace technology arise, what needs does it respond to, what values underlie its designs, who manages this technology, what economic, political, ideological interests does it respond to, how and who regulates it? beyond the simple abstraction and instrumental management of its devices and processes. Thus, the supposed neutrality of technology is revealed by its effects on the economy, culture, environment, physical and mental health, among others. Its essence is hidden by the place it occupies in the transformations of the environment and everyday life.

Often the designs and processes may and may not be evident to the eyes of common sense, but they are, in front of critical and reflective glances. Ortega y Gasset warns of the emptiness of humanity as long as it is abstracted in technology; although it is also recognized that technology, in its origins, satisfied authentic needs and, today it does not necessarily justify them, but rather creates them in order to exercise control over those who use them. In this sense, it is not possible to call technology as neutral. In this regard, the work of Rojas (2024) shows the maelstrom of creation of digital technologies and their forms of control, which show that sectors of the population are immersed in new pathologies and these are the tip of the *iceberg* of control strategies introduced by cyberspace devices

Rojas (2024) adds that the technological process creates virtual realities of manipulation that lead to consumption and ideological control. The foundations of this assertion are supported by studies on the development of cognitive stages, mainly of vulnerable populations, which are subject to conditioning processes that outline virtual realities; whose process begins with isolation, persuasion, manipulation and finally the objective is control.

In this technological penetration, Alonso (2024) points out that "in order to understand the potential risks, it is useful to look above all at the designs of the tools and ask why they are being introduced into the ´ market ´ educational, who is driving them and why" (p. 8 4).

To these questions, it is convenient to add those related to: how to favor a constructive social action and how to encourage the reflection of the users who are immersed in such technological processes, as expressed by Ramírez and Sepúlveda (as cited in Díaz and Castillo, 2023, p. 109); therefore, it would be convenient to recover the premises of the Principle of Responsibility to anticipate the possible effects. It would be necessary to think about the origin, the implicit and explicit purposes of the generators. This would make it possible to de-fetishize the idea that technology is neutral, especially because the idea that technology will solve humanity's problems no matter what it does is internalized.

It is not possible to endorse neutrality when it disrupts human rights, for example, *privacy*, *equality and non-discrimination, among others,* which have had severe social, economic, cultural and ethical effects. And in the cases of digital access and inclusion, (Thompson, as cited in Díaz and Castillo, 2023) points out that people should have skills to process such information and, responsibly use digital services. "In the understanding that such skills are related to people's awareness, attitude and ability to access, identify, manage, analyze, among other things, digital resources and the information poured into them" (p. 108). The question here is whether education promotes these skills.

SELF-PROPAGATION OF TECHNOLOGY AND RESPONSIBILITY FOR ITS DEVELOPMENT

Self-propagation is the essence of technology that develops by inertia of continuous achievements. In the case of AI, although it had been subsidiary to the human intelligence, it now transcends in the process of transformation of humanity, in such a way "it can function with independence and autonomy vis-à-vis (human intelligence)" Brito, Villavicencio and Sanchez, 2019, p. 261 (as cited in Arbeláez-Campillo, Villasmil and Rojas, 2021, p. 503). Hence the importance of being prudent in its use.

In this respect, the reflection of Jonas (1995) marks self-propagation as an expression of technology and manifests his concern and need to extend the duty for nature, for several reasons. First, because he recognizes the effects of technology on the vulnerability of nature and humanity, especially for its capacity to destroy the conditions of life; and second, because of the causal series of its practice and the irreversibility of the conditions of life.

That is why he points out that knowledge becomes an urgent duty, which "has to be on the same scale as the causal extension of our action [...], the fact that predictive Knowledge lags behind the technical knowledge that provides power to our action, acquires in itself ethical relevance" (Jonas, 1995, p. 34). In this context, the lack of predictive power derives from the recognition of ignorance of technological practice and the effects of its inordinate power. It means recognizing that the process of cumulative self-propagation of technological transformation, which according to Jonas, "transcends the conditions of individual acts and transcends into vulnerability and irreversible features in the environment" (Jonas, 1995, p. 34)

In view of this fact, today we recognize the reduced possibility of reflecting, stopping and deciding on the generation of technology, especially because those who develop it maintain a monopoly on their actions; they co-opt the scientists and communications that position certain technologies and their policies coming from powerful economic groups. Although, at the same time, UNESCO and other institutions have created precautionary measures, these have been insufficient and surpassed by the capital that sustains technological development.

MESSIANISM, CYBERSPACE FETISH AND THE PRECAUTIONARY PRINCIPLE

The idea that technology will solve all the vicissitudes facing humanity is being demystified every day. However, its development has been covered with the veil of neutrality and the inertia of infinite self-propagation. With this, it has attained a supra power of those who dominate and guide cyberspace. Faced with this situation, the developers of communication technologies themselves have stated that they "should have spent more time thinking about the philosophy and responsibility involved in the invention" (Rojas, 2024, p. 287). Example Stephen Hawking criticizes the development of AI, because of the risks of its use, by recognizing that: "humans, who are limited beings because of their slow biological evolution, will not be able to compete with machines, and will be outcompeted" (BBC News, 2014, p. 1, as cited in Arbeláez-Campillo, *et al*., 2021, pp. 506-507). Furthermore, this physicist points out that "AI could furthermore self-engineer itself for purposes that, depending on its rapid evolution, could overcome all anthropic controls and insurgence against people (BBC News, 2014, as cited in Arbeláez-Campillo, *et al.,* 2021, p. 507). This experience shows the technological fetish, which collapses by its evident and hidden effects; for example, the pointed *architecture of oppression,* edified by mass surveillance programs, which according

to Edward Snowden (2019) (as cited in Stancanelli, 2020) secretly builds in the United States of North America.

But it is also recognized, on the other side of the action, that the *Internet,* in its beginnings became a sounding board, "designed for development, cooperation, freedom and democratization of knowledge and communications, in a corporate cartel dedicated to technological fetishism, consumption, propaganda, precariousness and social control" (Stancanelli, 2020, pp. 6-7). In this last expression, of social control, Julian Assange exalts the role that the *Internet* would have in providing "privacy to the weak and transparency to the powerful" (Stancanelli, 2020, p. 6), but also reflects the disputes for hegemony and predominance of ideological discourse among the great economic, political and arms powers such as China, USA and Russia.

The digital space is the scenario of dispute for world domination; it includes: Google, Microsoft, Facebook, Apple, Amazon. In this regard, Zuazo (2020), points out that the Net has become "a security tool for espionage and social control (p. 13, as cited in Stancanelli, 2020). In addition, in this neocolonial *tech* expression, economic power is concentrated; whose decisions dictate in a stealthy way, the future of humanity; deepen inequalities and threaten human rights.

ENCOURAGING CAUTION IN THE DEVELOPMENT OF TECHNOLOGY IN EDUCATION

It is worth remembering that technological development is the result of education, since it reflects the aspirations, not only of a society, but of humanity, and is endorsed by global and national policies. Here the question is asked about the role of education in covering or stripping the interests of the developers of technologies that have achieved great power of consumer and ideological manipulation, is it possible to stop these processes through education? The answer is related to some of the sentiments of the designers of these devices, they let us glimpse ethical conflicts of their development, which need to be handled with prudence and responsibility.

In this context, it is recognized that society tends to be distracted and manipulated by its unquestioned immersion in cyberspace. Here it is necessary to identify the role of education, not only to prevent, but also to mitigate and eradicate the effects. In this regard, Dussel (2001) mentions that this new context materially alters the principle of the political ratio because the AI

> not only would not deal with the conditions that determine the production and reproduction of the good life for humans, but also now introduces a force external to humanity in key processes for the maintenance of the equilibrium of the political and social ecosystem, such as the production of goods and services, the distributions of value goods, and the social division of labor and knowledge (as cited in Arbeláez-Campillo, *et al.,* 2021, p. 508).

In this context, critical education allows providing tools to users to avoid being carried away by the wave of network consumption. In order to propose some orientations of response to the series of manipulative rewards of these technologies, Rojas (2024) suggests responses that mitigate the effects, such as: consumerism *versus* reduction of consumption addictions; fear of losing information *versus* trust so that users can disconnect; lack of awareness *versus* reflection before acting on impulses; conditions of distraction and stress *versus* reduction of stress and creation of states of calm. These possible responses explain the scope of databases to define "profiles of users within a giant network to induce them to think or buy what they would like" (p. 281).

The educational challenges posed by Rojas (2024) would answer the following questions: how to stop the technological development of companies through education; how

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to inhibit the great power of manipulation of companies; how to promote learning that comes from within and the connection with the concrete reality and not from external dictates and from power groups; how to promote learning that comes from within and the connection with the concrete reality and not from external dictates and power groups; how to promote learning that comes from within and the connection with the concrete reality and not from external dictates and power groups.

FINAL THOUGHTS

With the idea of answering the initial question, which reads as follows: what elements of the cyberspace domain contribute to the liberation or alienation of Internet users? It is argued that technology is not neutral because it responds to the explicit and non-explicit interests of those who develop it. Its creators feed increasingly complex processes of self-propagation, because they violate the conditions of human and non-human life, and these are irreversible. At the same time, they feed a false messianism of technology as the source of the solution to humanity's problems.

Therefore, the challenges of education are related to the formation of critical and reflective thinking in the generation, processing, dissemination and consumption of digital technologies with possible ethical interventions

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