

EDUCATIONAL WORK, EDUCATIONAL TECHNOLOGIES AND HUMAN TRAINING

TRABALHO EDUCATIVO, TECNOLOGIAS EDUCACIONAIS E FORMAÇÃO HUMANA

TRABAJO EDUCATIVO, TECNOLOGÍAS EDUCATIVAS Y FORMACIÓN HUMANA

Welington Araújo SILVA¹

ABSTRACT: The present article is a result of an ongoing qualitative approach bibliographical research. For the development of our investigative work, we are starting from the hypothesis that the educational technology is crucial to the development of an educative work aimed at human emancipation. The study assumes that technology has always been present in everyday life at school. Its presence, however, is subsumed to the interests of the development of the capitalist society, expressing pragmatic and utilitarian knowledge, reducing the emancipatory potential of teaching work. Meanwhile, we ask ourselves: How to acquire a critical-dialectical knowledge under the social-metabolic dynamics of capitalism, that promotes, albeit as a possibility, the emancipation of sons and daughters of the working class in the context of the Brazilian public school? The preliminary results point to the fact that educational technology, although fundamental for the development of educational work aimed at human emancipation, continues to be treated in a mystifying and fetishistic way, abstractly situated in the educational scope as a recipe and remedy for complex educational problems and which can only be tackled by attacking structurally and historically determined issues.

KEYWORDS: Educative work. Educational technology. Human emancipation.

RESUMO: *O presente artigo é fruto de uma pesquisa de abordagem qualitativa bibliográfica que se encontra em andamento. Para o desenvolvimento do nosso trabalho investigativo, estamos partindo da hipótese de que a tecnologia educacional é fundamental para o desenvolvimento do trabalho educativo que visa à emancipação humana. O estudo toma como pressuposto que a tecnologia sempre esteve presente no cotidiano escolar. Sua presença, porém, fica subsumida aos interesses do desenvolvimento da sociedade capitalista, expressando saberes pragmáticos e utilitaristas, reduzindo o potencial emancipador do trabalho docente. Nesse ínterim, nos perguntamos: como acumular um conhecimento crítico-dialético sob a dinâmica sócio-metabólica do capital, que promova, ainda que como possibilidade, a emancipação dos filhos e filhas da classe trabalhadora no contexto da escola pública brasileira? Os resultados preliminares apontam para a constatação de que a tecnologia educacional, embora fundamental para desenvolvimento do trabalho educativo que visa a emancipação humana, continua sendo tratada de forma mistificadora e fetichista, situando-se abstratamente no âmbito educativo como receita e remédio dos problemas*

¹ University of Feira de Santana (UEFS), Feira de Santana – BA – Brazil. Professor of the Graduate Program in Education at UEFS and of the Physical Education undergraduate course. Staff at the Department of Health. PhD in Education (UFBA). ORCID: <https://orcid.org/0000-0001-7630-4981>. E-mail: wasilva@uefs.br

educacionais complexos e que só podem ser enfrentados atacando questões estruturais e historicamente determinadas.

PALAVRAS-CHAVE: Trabalho educativo. Tecnologias educacionais. Emancipação humana.

RESUMEN: *Este artículo es el resultado de una investigación de enfoque cualitativo bibliográfico que se encuentra en curso. Para el desarrollo de nuestro trabajo investigativo, partimos de la hipótesis de que la tecnología educativa es fundamental para el desarrollo del trabajo educativo encaminado a la emancipación humana. El estudio asume que la tecnología siempre ha estado presente en la vida escolar cotidiana. Su presencia, sin embargo, se subsume a los intereses del desarrollo de la sociedad capitalista, expresando saberes pragmáticos y utilitarios, reduciendo el potencial emancipatorio del trabajo docente. Mientras tanto, nos preguntamos: ¿cómo acumular saberes crítico-dialécticos bajo la dinámica socio-metabólica del capital, que promueve, aunque sea como posibilidad, la emancipación de los hijos e hijas de la clase obrera en el contexto del colegio público brasileño? Los resultados preliminares apuntan a que la tecnología educativa, si bien es fundamental para el desarrollo de la labor educativa encaminada a la emancipación humana, continúa siendo tratada de manera mistificadora y fetichista, situada abstractamente en el ámbito educativo como receta y remedio para problemas educativos complejos y eso solo puede ser abordado atacando cuestiones determinadas estructural e históricamente.*

PALABRAS CLAVE: Trabajo educativo. Tecnologías educacionales. Emancipación humana.

Introduction

This paper is the result of a qualitative bibliographical research that is in progress. Our research is based on the hypothesis that private ownership of information and communication technologies transforms the teacher's living work into dead work, and that pedagogical theories and practices, by ignoring the historical determinations of technique and technology, express teaching knowledge in a pragmatic and utilitarian perspective, reducing the emancipating potential of educational work. Meanwhile, we wonder: how to accumulate a critical-dialectical knowledge under the social-metabolic dynamics of the capital that promotes, even as a possibility, the emancipation of the sons and daughters of the working class in the Brazilian public school context?

Situational Analysis

The last presidential election made several national debates emerge with great force, among them that of education, which was and is on the order of the day. Several themes emerged, and we can highlight some of them: homeschooling, militarization and secularization

of public schools, the issue of educational funding, the attack on our patron of education, Paulo Freire, and especially the attempt to criminalize the pedagogical work of teachers in some Brazilian states through the "school without party", which became a bill thanks to the initial effort of Rio de Janeiro State Representative Flávio Bolsonaro (PSL). As if these elements were not enough, there is a great possibility that the educational budget will be much smaller in 2022, further worsening the state of public education.

With a politician of ultraliberal vein having reached the highest power of the nation, added to the conservative and, why not say, reactionary characteristics of the legislative houses and ministerial portfolios of the country, a feeling of anguish and apprehension hit the workers of education hard, and with each passing day, with each act of the central government and its representatives, these feelings were amplified, along with the certainty that barbarism was underway.

Confronting the development of barbarism in the educational field involves, among other issues, the dispute over school knowledge and, consequently, the confrontation in the pedagogical debate regarding the direction of the ideas and ideals present in the different educational theories that influence the educational work, hegemonically inclined to pragmatism and utilitarianism, and that has its touchstone in the letters of the Common National Curricular Base.

Added to all these elements, we are experiencing, because of the pandemic crisis (Covid-19) installed in the country, the pedagogical work via digital platforms, among other technological devices, which provoke, intensively and extensively, the teaching dynamics, consubstantiating, by the limits inherent to the means used (tablet, cell phone, TVs, pendrive, notebook, among others) and the material condition of existence of education workers, especially teachers and students. These pedagogical practices do not contribute to the ample development of the students' cognitive capacities, causing a limit in the fulfillment of the school's social function that, according to Saviani (2003, p. 13), "[...] is the act of producing, directly and intentionally, in each singular individual, the humanity that is produced historically and collectively by all men".

For all these elements, briefly presented in the previous paragraphs, it is of fundamental importance to reflect on the educational work and its possibility to promote human emancipation, having, as a mediating element, the educational technologies.

Brief history of the insertion of technology in education:

Demystifying the concept of technology.

When we talk about technology, we immediately think of computers, tablets, and cell phones, among other instruments. We consider it fundamental to demystify this idea. We believe that this understanding reduces the understanding of the role of both technology and technique in the development of humanity. We think that it is of fundamental importance to understand technology "[...] as a social practice whose economic, political, social, cultural and educational meaning and significance are defined within the power relations between social classes." (FRIGOTTO, 2008, p. 377).

Much more than a simple etymological concern (origin of the Greek "*tekhne*" = technique, art, craft, with the suffix "logy" = study), we want to think of technology as human production, expression of concrete social practices, objectifications of social relations of production and human reproduction in specific cultural contexts. To show that it has always been present, mediating the man/nature relationship, being a product and producer of humanity and expressing its contradictions.

Man, unlike other animals, not only adapts to the world, he also transforms this world, and to develop this process, he builds tools, instruments, and signs. The considerations on the studies that present human evolution with reference to the Stone Age, separating it into periods: Paleolithic (lower/superior) and Neolithic, express precisely the degree of development of the communities studied.

If the stone was the main material used for the development of artifacts, their shapes - chipped or polished - showed the degree of evolution of the species studied. The way these artifacts were organized was also a clear demonstration of their evolutionary process. One thing is the exclusive use of stone being wielded by the human hand. It is quite another thing to organize them into a complex whole, involving wood and vines, for example, in the construction of what we conventionally call an axe. These elements seen separately constitute nature. However, when associated, they become a cultural product, enhancing human operations on the natural environment. It is not only the environment that is transformed. The being that produces transforms itself together with the environment. It is a reciprocal operation.

The consequence of this process is the establishment, sometimes gradual, and other times more rapid, of new and challenging realities, which will provoke, therefore, the need for the development of new tools; new uses for already existing tools; the development of new

skills and the improvement of those already present. In the dynamics of this complex and contradictory process, technique and technology have always been present.

However, the impression is that only remotely does humanity find itself involved in its daily life under the influence of technologies and their corollaries. We live today the "media age", the "knowledge society", "the computer society" among many other nomenclatures, that although they have the particularity of seeking to synthesize and explain in small phrases the contemporary events, they end up hiding the ideological forms of the role, and the potential that these productive forces have either for the expansion of human potentialities or for the recrudescence of the ongoing barbarism (SILVA, 2014, p. 37).

In this regard, to reduce educational technology to the technological apparatuses present in computers, cell phones, Data Show, among others, is to ignore the historical process of the development of technology itself, promoting mystifications and presenting it as a recipe and remedy for educational problems that, now, would be solved purely and simply by the insertion of "teaching machines" in the school's curricular dynamics.

Educational technology: a bit of history

Before going through a brief historical exposition of the emergence of the debate about educational technology, I consider it fundamental to clarify what we developed in the previous item.

The importance of demystifying the idea of technology is not associated with demonizing it. It involves, among other reasons, the understanding that the book, the blackboard (chalk or electronic), the chairs, desks, maps (regional, of Brazil, world maps), among others, are as much technological apparatuses of an educational nature as the "new technologies" are, and that their use in the organization of the educational work will be subordinated to an understanding of human formation based on the pedagogical theory present in the teaching activity.

In a dialectical perspective, we affirm that we should avoid celebrating educational technology as if it were, intrinsically, an instrument of progress, synonymous with the overcoming of difficulties related to the teaching and learning process. It is not a matter of demonizing it, but of placing it in specific historical contexts.

In the meantime, the 1930's of the last century will be a landmark in the development of reflections on the insertion of other technologies in the school environment. Through the science and technology development policy of the Vargas government, there is a whole debate

at the governmental level that will intensify in the 1980s and 1990s. This debate will lead to policies to implement computers in schools, through the National Program for Informatics in Education (PROINFO - which is still in force today) and the National Program for Educational Informatics (PRONINFE - which was implemented in the late 1980s, unsuccessfully and now extinct).

Commonly presented as an innovation strategy, educational technology corresponds to a systemic way of planning, implementing and assisting the total process of learning and instruction, aiming to make it more efficient. It would be, therefore, a product of the fusion between psychology, the media, and the mathematical sciences, and thus, a viable alternative that overlapped with traditional teaching anchored in the idea of progress (SAGANTIM, 2014, p. 04-05).

Educational technology, therefore, will be thought of as an instrument capable of making the teaching and learning relationship, understood as "instruction", more efficient, being able to make the worker more productive and effective in the context of a world that is constantly progressing.

Let's not forget that the Vargas Era moved in a transition process from an economic cycle based, above all, on the coffee monoculture, which for many years represented the driving force for the country's development from the southeast region, to a process of industrialization, which since 1880 was already being developed. However, without a significant structure, something that would become clear in the 1910s and 1920s and would be led by the political proposals of modernization carried through by the Vargas government, even though they would only become legally effective 54 years later, through the approval by the National Congress of Law 7.232/1984 (BRAZIL, 1984), the so-called "Informatics Law".

It was necessary, therefore, to form a labor force, qualified workers, capable of making the industrial capital move, and this happened, above all, through the schooling process. Thus, for Kuenzer (1999, p. 122), "[...] the first time that professional education appears as a public policy in Brazil, it does so in the perspective of mobilizing the formation of character through work".

In order to do so, it was necessary, according to Azevedo, Shiroma e Coan (2012, p. 28)

[...] to make available a school structure that would enable the members of the proletarian classes, understood as "the disadvantaged of fortune", the means to overcome the difficulties of life, through technical preparation for work, keeping them away from idleness, ignorance, vice and crime, that is, making them, in the legislator's understanding, useful citizens to the Nation.

It should be understood as: efficient, effective and competent. The deepening of the new capitalist relations present in the transition from a national mode of production based on coffee monoculture to industrial-based productive processes will consolidate "[...] the understanding that education played an important role in the development and consolidation of these relations" (SAVIANI, 2019, p. 365).

Human formation

The school, due to its nature and specificity, will be more apt to promote the ideas and ideals of the mode of production and reproduction of human existence, it will be the one to socialize the systematized knowledge, promoting the formation of a new type of worker, technically able to move the new gears coming from the industries.

When thinking about the insertion of technology in education, whether old or new type, we must keep in mind that "the pedagogical models are historically constituted from the changes that occur in the world of work and social relations, since the fundamental classes, responsible for the essential functions in the world of production need to properly train their intellectuals" (KUENZER, 2007, p. 121).

In the meantime, the educational sector will be considered the most suitable. According to Bonilla and Pretto (2000, p. 01-02),

In order to guarantee technical and scientific progress, investment is being made in the reform of the educational systems, since the school is assigned the role of forming the human resources that this new - modern - society needs in order to function. Education has no other purpose than to enhance the country's production structure. To this end, technical and economic progress is adopted as the central element to guide educational processes, following the policies that international organizations, companies and institutions - especially the World Bank (WB) - adopt for Latin America.

The interference of international organizations in the development of educational policies in Brazil has always been very strong. It is well known, for example, that the interference of the World Bank, since the mid-1970s (although it had been active in the country since 1949), took place in several sectors, seeking to promote improvements in the production and management of services related to health, transportation, and education.

It is important to note, due to the influence that the World Bank still has in the development of educational policies that affect the educational work and the possibility of human formation mediated by educational technology, that the respective multilateral organism

not only does not take into consideration the specificities of the localities where it seeks to develop its projects, by distributing and applying a "ready-made package":

A selective policy, that is, for the needy populations, programs and low cost, at the level of elementary education, which respond to the needs of elementary instruction and offer the student the professional preparation necessary to transform the product of his work into income; for the minority, located in urban centers, high school and higher education, and must take into account the labor absorption capacity of the modern sector of the economy and the demands of technicians for the private sectors (BONILLA; PRETTO, 2000, p. 03).

If there is participation of education workers in the debate, reflection, and implementation of educational projects in the dynamics of the operations carried out by the World Bank, there is no news. In fact, the spirit that animates the goals developed in the different programs of this organism, and that should be operationalized since ever, operates under a well-known logic that emerges, influencing the teaching work, since the manufacturing period (SAVIANI, 2010).

And what is this logic? It is the logic of the perpetuation of social relations of production and reproduction of society, which materialize in different ways at different times in history. If we consider the assertions of the champions of the nascent bourgeois order, such as Mandeville and Sanches, among others, we will see that in them the idea of the intellectual formation of the worker was a danger to the system. The first considered that "The more a shepherd, a farmer or any other peasant knows about the world and about things alien to his work or job, the more difficult it will be for him to bear the toils and penalties of his trade with joy and satisfaction" (SAVIANI, 2010, p. 15). The second, on the other hand, questions: "What shepherd's son would want to have his father's trade if at the age of twelve he knew how to read and write?" (SAVIANI, 2010, p. 15), and adds: "The twelve or fifteen year old boy, who has even learned how to write a letter, will not want to earn his living carrying a tired sheep on his back, weeding from morning till night, or digging" (SAVIANI, 2010, p. 15-16).

It is obvious that these reflections emphasize the need to suppress the school from the workers' training process, something contrary to the defense of schooling that currently exists. Let's remember that he mentioned the manufacturing period. With the advent of the manufacturing system, in the wake of the industrial revolution, the need to train a more qualified worker is imposed. But at what level does this imposition take place? Isn't the logic of the idea of human training, now more expanded, subject to the pure and simple need to reproduce the

current model? After all, according to Mészáros (2006, p. 263), "No society can endure without its own system of education.

It is the school, therefore, the most adequate place, which means that it is not the only place, to promote human formation, to make the worker reproduce himself in the exact measure that favors the production and reproduction of the currently existing way of life. And if the currently existing way of life demands an increasingly expanded appropriation of access to new types of technologies, the relations that will permeate the educational work will be with emphasis on these needs, obviously dosed, transmitted in the exact measure, in a way that does not put at risk the appropriation by the sons and daughters of the working class of the knowledge historically and socially produced by humanity: the capitalist mode of production.

Educational technology in the logic of human emancipation

Therefore, education, the educational work, has never been neutral. The use of the most different techniques and technologies throughout time has always sought to favor one or another mode of human formation, adequate to the hegemonic interests of the social classes in presence.

It is important to highlight that we understand that the educational process, inherent to the formation of the social being, is not exclusive to the school. The formation of our senses and the meanings we give to things, facts and phenomena, depend on a set of mediations present in the life of the generic human being. But it is the dynamics intrinsic to the nature and specificity of school education, where educational technology is also present, that we want to deal with. It is from this constitutive part called school education, where formal education is developed, that we want to think about the problem inserted in the introduction of this article about how to accumulate a critical-dialectical knowledge that promotes human emancipation.

We understand that the role that the educational work plays, both in the maintenance and in a possible qualitative transformation of the society in force, in the direction of human emancipation, is central. "In this sense, breaking with the logic of capital in the area of education is equivalent [...] to replacing the ubiquitous and deeply rooted forms of mystifying internalization with a comprehensive concrete alternative" (MÉSZÁROS, 2005 apud ANTUNES, 2012, p. 87).

One of these mystifying forms is related to a set of adjectivations about the kind of society we live in today. Depending on the author or authors consulted, we can say that we live in a "computer society"; "post-capitalist society"; "post-industrial society"; "network society"; "post-traditional society"; "post-modern society"; "informational society", among many other

terminologies. In common among them, the fact that we are surrounded by the most different technological apparatuses and the unawareness that, according to the "[...] data from the Continuous National Household Sample Survey - PNAD of 2018 show that about 20% of students in public schools do not have access to the Internet, and half do not have a computer, nor adequate space at home for study. (ARRUDA; GOMES; ARRUDA, 2021, p. 1738).

What do you mean we live in an "informational society"? A society that is connected to networks? "The society in which we live is based on the capitalist mode of production which, in turn, is founded on the private ownership of the means of production" (NASCIMENTO, 2011, p. 26). These adjectivations, as good as their intentions may be, promote a mystification of how society is organized.

We are, indeed, living a new phase of capitalist development, which does not mean that its essence is over. We make our own the words of Duarte (2003, p. 13), who recognizes

[...] that the capitalism of the late 20th century and early 21st century is undergoing changes and that we can indeed consider that we are living a new phase of capitalism. But this does not mean that the essence of capitalist society has changed or that we are living a radically new society that could be called a knowledge society. The so-called knowledge society is an ideology produced by capitalism, it is a phenomenon in the field of the ideological reproduction of capitalism.

This mystifying aspect leads, concomitantly, to the fetish of technology, hiding "[...] the essence of reality, putting on display only the appearance of the phenomenon(s) that one wants to reveal, obscuring the historically determined social relations [...]" (SILVA, 2014, p. 52). The fetish, then, becomes a prescription and remedy for educational problems. The technical use is evidenced and constitutes itself as an element of fundamental mediation of the processes that involve the relation of teaching and learning.

Arruda, Gomes and Arruda (2021, p. 1745), analyzing the pedagogical proposals in the offer of remote teaching, infer that technological mediation "[...] does not involve mediation between subjects, but the technical use of equipment as the main support for teaching and learning, which weakens the role of the teacher and strengthens the use of pre-prepared materials presented in a transmissive way".

Another element presented by the authors concerns the teacher's preparation for the use of educational technologies. Citing data from the Organization for Economic Cooperation and Development (OECD), Arruda, Gomes, and Arruda (2021, p. 1742), state that "[...] most teachers have not had access to adequate training to work with digital technologies." They also state "[...] that in Brazil the teacher training curricula do not involve even 1% of their total

workload for the technological training of teachers" (ARRUDA; GOMES; ARRUDA, 2021, p. 1742).

The set of these elements, of complex nature, because it involves various mediations, gives the contradictory and discordant tone of the fallacies of educational models presented that simplify the relationship between educational work and human training mediated by educational technologies, because they ignore the influence of the set of social relations present in the mode of production and reproduction of society.

In this sense, the challenge for the school is to respond not only to the students who seek a body of knowledge, but also to the enormous challenge of forming critical and participatory subjects. It is in the positive response to this challenge that the formative function of the school is verified. In fact, in a society in permanent scientific and technological evolution, to actively respond to the demands of formation is something complex, which demands planning from education professionals who work at school (ARRUDA; GOMES; ARRUDA, 2021, p. 1747).

To reduce human formation to the interests of capital is understandable under the logic of capital itself. But, to the extent that we understand, by the very sociometabolic reproduction of this system, that it always and increasingly demands vital forces from the human being, it is necessary that we subvert the logic of appropriation of technique and technology in favor of human emancipation.

This does not mean, under any circumstances, demonizing the use of educational technologies. "The question is not in demonizing or divinizing digital technologies, but in questioning their use as a tool for domination and exclusion and the role of educators, as intellectuals, in this process" (BAPTISTA *et al.*, 2020, p. 302).

Technology is human production. The fact that it, historically, serves the interests of bourgeois ideals in the formation of workers necessary for the reproduction of capitalist society should not be denied, but we need to appropriate more and more educational technologies, submitting them to the interests of human emancipation.

We need to organize ourselves as a professional category and fight to fully appropriate this wealth, and this implies structural changes. We know that only through education we will not be able to revolutionize the way we produce and reproduce our existence.

On the other hand, we recognize that without the educational work that promotes the socialization of knowledge historically and socially accumulated by humanity, mediated by educational technologies, we will hardly promote human emancipation.

Final considerations

Our research, as we have already announced, is in progress. So far, our guiding hypothesis has been confirmed, that is, that although educational technology is fundamental to the development of the educational work aimed at human emancipation, it continues to be treated in a mystifying and fetishistic way, being abstractly placed in the educational field as a recipe and remedy for complex educational problems that can only be truly tackled by attacking structural and historically determined issues.

We recognize the emancipating power of the educational work and the difficulty of its materialization under the destructive logic of capital. However, we understand that it is necessary to think of a "school of transition," that is, one that is not limited to reproducing and is not satisfied with waiting, one that proposes to collaborate and build, on a daily basis, the conditions for the overcoming of capitalist society, developing educational work supported by educational technologies in the direction of human emancipation.

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