



# Professional and technological education and the challenges with omnilateral human formation

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**ABSTRACT.** Professional and Technological Education (EPT), as an educational modality, seeks to promote the omnilateral formation of human beings, considering intellectual, ethical, social, political, economic, cultural, and emotional dimensions. This study aims to understand the challenges of EPT in the current context, marked by rapid social transformations, highlighting its relevance for integral formation. The research, descriptive in nature and with a qualitative approach, was based on a literature review of books, articles, and materials available on the internet, focusing on authors who study this theme. The study is organized into sections, starting with the introduction, followed by the methodology, a discussion on promoting omnilateral formation in public schools, an analysis of professional master's degrees in EPT, and a reflection on the relationship between work and education throughout history. Changes in the world of work and their connection with EPT are also discussed, as well as current challenges and omnilateral formation as a central principle. Although EPT plays a crucial role in preparing individuals for the world of work, it must also foster the formation of critical and conscious citizens. Among the main challenges are overcoming the fragmentation of knowledge and integrating theory with practice. The articulation between different types of knowledge is essential to provide a comprehensive education. Finally, the study presents its final considerations. The results indicate, among other findings, that in pursuing omnilateral formation, EPT faces challenges that require a collaborative approach between different sectors of society. Overcoming these obstacles is crucial for the formation of professionals and the construction of a fairer society, where work and education are oriented towards the common good and the integral development of human beings.

**Keywords:** EPT; omnilateral human formation; EPT challenges; integral education.

## Educação profissional e tecnológica e os desafios com a formação humana omnilateral

**RESUMO.** A educação profissional e tecnológica (EPT), como modalidade educacional, busca promover a formação omnilateral do ser humano, considerando as dimensões intelectual, ética, social, política, econômica, cultural e emocional. Este estudo visa compreender os desafios da EPT no contexto atual, marcado por rápidas transformações sociais, destacando sua relevância para a formação integral. A pesquisa, de natureza descritiva e abordagem qualitativa, baseou-se em revisão bibliográfica de livros, artigos e materiais disponíveis na internet, com foco em autores que pesquisam sobre a temática. O estudo está organizado em seções, começando pela introdução, seguida pela metodologia, discussão sobre a promoção da formação omnilateral nas escolas públicas, análise dos mestrados profissionais em EPT e uma reflexão sobre a relação entre trabalho e educação ao longo da história. Também são discutidas as mudanças no mundo do trabalho e sua conexão com a EPT, bem como os desafios atuais e a formação omnilateral como princípio central. Embora a EPT desempenhe um papel crucial na preparação para o mundo do trabalho, ela também deve fomentar a formação de cidadãos críticos e conscientes. Entre os principais desafios, destacam-se a superação da fragmentação do conhecimento e a integração entre teoria e prática. A articulação entre os diversos saberes é essencial para proporcionar uma educação integral. Por fim, são apresentadas as considerações finais. Os resultados indicam, entre outras constatações, que ao buscar a formação omnilateral, a EPT enfrenta desafios que exigem uma abordagem colaborativa entre diferentes setores da sociedade. Superar esses obstáculos é fundamental para a formação de profissionais e a construção de uma sociedade mais justa, na qual trabalho e educação estejam orientados pelo bem comum e pelo desenvolvimento integral dos seres humanos.

**Palavras-chave:** EPT; formação humana omnilateral; desafios da EPT; educação integral.

## La educación profesional y tecnológica y los desafíos de la formación humana omnilateral

**RESUMEN.** La educación profesional y tecnológica (EPT), como modalidad educativa, busca promover la formación omnilateral del ser humano, considerando las dimensiones intelectual, ética, social, política, económica, cultural y emocional. Este estudio tiene como objetivo comprender los desafíos de la EPT en el contexto actual, marcado por rápidas transformaciones sociales, destacando su relevancia para la formación integral. La investigación, de naturaleza descriptiva y con un enfoque cualitativo, se basó en una revisión bibliográfica de libros, artículos y materiales disponibles en internet, enfocándose en autores que investigan sobre esta temática. El estudio está organizado en secciones, comenzando por la introducción, seguida por la metodología, una discusión sobre la promoción de la formación omnilateral en las escuelas públicas, un análisis de los másteres profesionales en EPT y una reflexión sobre la relación entre el trabajo y la educación a lo largo de la historia. También se discuten los cambios en el mundo del trabajo y su conexión con la EPT, así como los desafíos actuales y la formación omnilateral como principio central. Aunque la EPT desempeña un papel crucial en la preparación para el mundo laboral, también debe fomentar la formación de ciudadanos críticos y conscientes. Entre los principales desafíos destacan la superación de la fragmentación del conocimiento y la integración entre teoría y práctica. La articulación entre los diferentes saberes es esencial para proporcionar una educación integral. Finalmente, se presentan las consideraciones finales. Los resultados indican, entre otras constataciones, que al buscar la formación omnilateral, la EPT enfrenta desafíos que requieren un enfoque colaborativo entre diferentes sectores de la sociedad. Superar estos obstáculos es fundamental para la formación de profesionales y para la construcción de una sociedad más justa, en la que el trabajo y la educación estén orientados por el bien común y el desarrollo integral de los seres humanos.

**Palabras clave:** EPT; formación humana omnilateral; desafíos de la EPT; educación integral.

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## Introduction

This study was produced from reflections carried out in the curricular component Conceptual Bases in Professional and Technological Education, offered in the first semester of 2023, by the Professional Master's Degree in Professional and Technological Education that belongs to the Graduate Program in Professional and Technological Education (ProfEPT) of the Federal Institute of Education, Science and Technology of Rio Grande do Sul (IFRS). Its purpose is to systematize the understandings produced about the conceptual bases in Professional and Technological Education (EPT) with reference to the readings and studies carried out during the semester.

In recent years, the educational scenario has been marked by profound transformations, driven by rapid technological evolution, changes in the demands of the world of work, and new conceptions about the role of education in society. In this context, EPT emerges as an educational modality that aims to contemplate all the dimensions that constitute the specificity of the human being, responding to the challenges imposed by a society in constant transformation. Faced with the need to prepare individuals for an increasingly dynamic and demanding world of work, EPT plays a crucial role.

Thus, the objective of this study is to understand the challenges faced by EPT in the current context, marked by rapid social transformations, highlighting its relevance for the omnilateral formation of subjects.

In this context, the article also seeks to consolidate the main concepts and theories discussed, with the aim of promoting a deeper understanding of educational practices in the context of EPT. Throughout this work, the various dimensions that permeate EPT will be explored, from its origins and historical evolution to the current trends and challenges faced in the implementation of educational policies aimed at professional and technological training. The study, therefore, aims to contribute to the development of a critical and reflective view of the role of EPT in the Brazilian educational scenario, highlighting its importance for the construction of a more inclusive and equitable society.

EPT, as an educational modality, seeks omnilateral human formation, a concept defended by Frigotto (2012), who considers education as a means for the integral development of the human being in all its dimensions - intellectual, ethical, social, political, economic, cultural and emotional. This approach goes beyond the simple

transmission of technical content, promoting the development of human potential and preparing individuals for the world of work, while seeking equity and social inclusion.

The article also addresses the evolution of professional master's degrees in EPT, highlighting the fundamental role of these programs in the integration of knowledge from the world of work and in the promotion of social and scientific advances. In addition, it analyzes the historical relationship between work and education, the metamorphosis of the world of work and its impacts on EPT, and the current challenges faced by this educational modality, including the precariousness and commodification of education.

Throughout this work, we will seek to understand how EPT can face these challenges and contribute to an education that goes beyond technical training, promoting an education that effectively prepares human beings for the complex and dynamic reality of the contemporary world.

## Methodology

In this article, a predominantly qualitative and dialectical approach was adopted, which took into account the movements and contradictions present in educational spaces. According to Minayo (1994, p. 21, translation our), the "[...] qualitative research works with the universe of meanings, motives, aspirations, beliefs, values and attitudes, which corresponds to a deeper space of relationships, processes and phenomena".

In addition, the study was developed with descriptive objectives. According to Triviños (2009), descriptive studies seek to portray facts and phenomena of a given reality, being indicated when the researcher wants to know a specific community, its characteristics, values and problems.

The work relied on a bibliographic research that grounded and guided the entire development of the study. This research was carried out based on already published material, consisting mainly of books, journal articles and, currently, materials available on the internet (Marconi & Lakatos, 2017). In other words, it involves "[...] all written works, as well as material consisting of primary or secondary data that can be used by the researcher or simply by the reader" (Fachin, 2006, p. 122, translation our). As it is an investigation that uses bibliographic research, it is exempt from the opinion of the Research Ethics Committee (CEP), according to Resolution No. 510 (2016).

The search for data in the reference works was guided by the considerations already mentioned in the introduction, which gave rise to six sections in which the study is structured, namely: 'EPT: promoting omnilateral human formation in public schools', 'Professional master's degrees in EPT', 'Work and education throughout history', 'Metamorphoses in the world of work and its articulation with EPT', 'EPT: Current Challenges' and 'Omnilateral Training as a Principle of EPT'.

## EPT: promoting omnilateral human education in public schools

EPT is an educational modality that seeks omnilateral human formation. Frigotto (2012, p. 267, translation our) points out that omnilateral education means, "[...] the conception of education or human formation that seeks to take into account all the dimensions that constitute the specificity of the human being and the real objective and subjective conditions for its full historical development". Thus, omnilateral training encompasses the education and emancipation of human beings in all aspects of life, and is considered an essential component for EPT, as it has the purpose of preparing subjects for the world of work, providing theoretical, practical and technological knowledge. Also according to the author, "[...] these dimensions involve their material corporeal life and their intellectual, cultural, educational, psychosocial, affective, aesthetic and playful development" (Frigotto, 2012, p. 267, translation our).

Therefore, omnilateral human formation refers to the integral development of human beings in all its dimensions: intellectual, ethical, social, political, economic, cultural and emotional. It is an educational approach that seeks to go beyond the simple transmission of technical content and specific skills, promoting an integral view of the human being, developing their potential. Leite (2017b, p. 95, translation our), recalls that "[...] for Marx, omnilateral formation refers to all human dimensions; In this way, we need to appropriate objectifications in an omnilateral way to constitute ourselves as complete beings".

Involved in this conception of education, EPT can play an important role in this process, providing students with the acquisition of up-to-date and relevant knowledge for the world of work, while seeking to develop socio-emotional skills, critical thinking, professional ethics, and social awareness. In addition, it can

play an essential role in promoting equity and inclusion. It should ensure that all students, regardless of their socio-economic background, gender, race or any other characteristic, have equal access to quality EPT. This contributes to reducing social inequalities and enables more subjects to have opportunities for personal development and fulfillment.

To this end, EPT in public schools must be guided by a pedagogical approach that values the active participation of students, the contextualization of contents, critical and reflective training and the dialogue between theory and practice. It is through this educational process that students can develop their potential, broaden their future perspectives and contribute significantly to the development of society.

Ramos (2014) points out that EPT has as its scope integral education, and that work as an educational principle and research as a pedagogical principle assume an essential character for the integration between professional education and basic education, having as a unit, inseparable, work, science, technology and culture aiming at "[...] an education in which there is no hierarchy of human faculties and capacities, a training that articulates (and does not interpose) the intellectual, aesthetic-artistic, ethical, political dimensions based on work" (Della Fonte, 2018, p. 17, translation our).

Through the development of this conception, EPT will be able to form conscious and responsible citizens who recognize themselves within society, aware of their role in human social evolution. This training should be based on human rights, professional ethics, sustainability, active citizenship, understanding of the social and environmental impacts of professional activities, among other aspects. Such fundamentals are imperative for the training of professionals committed to the well-being of society and the environment.

It is important to emphasize that these dimensions remain interconnected and complement each other. With them, the development of technical knowledge must be aligned with the development of social awareness, in order to train professionals prepared for the challenges of today's world of work. In this way, EPT promotes comprehensive training, which goes beyond the technical focus, that is, an omnilateral training.

With the purpose of contributing to integral human formation, EPT has before it the challenge of "[...] overcome the human being historically divided by the social division of labor between the action of executing and the action of thinking, directing or planning [...]" (Ramos, 2014, p. 94, translation our), developing autonomous, critical, ethical human beings prepared to face the challenges of the world of work, contributing to a more just, equitable, inclusive and developed society.

## Professional Masters in EPT

EPT as an educational modality can be found at all levels of education, as long as it is aligned with its fundamental principles, which are outlined in chapter II of Resolution No. 1 (2021), which establishes the General National Curriculum Guidelines for Professional and Technological Education. Among the 18 principles present in this document, the importance of work as a central educational principle and basis for curricular organization stands out. This principle is based on the construction of professional competencies and the integration of objectives, contents, and teaching and learning strategies with science, culture, and technology. In addition, there is a stimulus to research as an essential pedagogical principle, recognizing the need for a training process that integrates cognitive and socio-emotional knowledge, promoting the production of knowledge, culture, and technology, as well as the development of work with social impact (Resolution No. 1, 2021).

In addition, one of its principles is to ensure interdisciplinarity in curriculum planning and pedagogical practice to overcome the fragmentation of knowledge and curricular segmentation. To this end, it includes the use of educational strategies that allow contextualization, flexibility, and interdisciplinarity, favoring the understanding of meanings and ensuring the inseparability between theory and professional practice throughout the teaching and learning process (Resolution No. 1, 2021).

These principles are fundamental for professional training, especially in a world in constant transformation, and should be applied at all levels, stages and forms of education, including professional master's courses in EPT, in which it is essential to promote the inseparable relationship between theory and practice, constituting praxis. For Marx, praxis is a theoretically grounded practice, where theory guides action, shaping it and making it conscious (Leite, 2017a). Thus, in professional master's degrees, theory can collaborate to deepen the action of the student who is in the process of training as a researcher.

The creation of the Federal Network of Professional, Scientific and Technological Education (RFEPCT) in 2008 boosted a significant expansion of EPT. The creation of the IFs is not only promoting this growth, but

has also been contributing to the internalization of EPT in Brazil, in addition to enabling the offer of *stricto sensu* graduate programs at RFEPCT (Silva et al., 2022).

For Freitas et al. (2017), it was the experience accumulated over a decade of the IFs and more than a century of existence of the Federal Network that determined the moment to advance in the understanding and improvement of actions that promote social and scientific advances, strengthening interaction with society. To this end, ProfEPT was created and in it, the Professional Master's Degree in EPT, which is offered nationally by RFEPCT's educational institutions, with this purpose as one of its main purposes. Also according to Freitas et al. (2017), the proposal of the Professional Master's Degree in EPT aims to improve the teaching processes in EPT, qualifying the activities related to the management of the institutions and the methodologies and educational resources of the courses that are offered. It is an initiative that considers it necessary to articulate the knowledge of the world of work and the various scientific areas related to education.

Urbanetz et al. (2020) highlight that the general objective of ProfEPT is to offer specific training in EPT for RFEPCT professionals, with an emphasis on the production of knowledge and the development of products through research that integrates knowledge from the world of work and systematized knowledge. The authors highlight "[...] that the program is based on work as an educational principle and on research as a pedagogical principle, in formal and non-formal spaces, indicating the conception of training offered" (Urbanetz et al., 2020, p. 145, translation our). Silva et al. (2022, p. 130, translation our) point out that this "[...] curricular possibility of establishing work as an educational principle, in an emancipatory way, comes from the current of thought called historical-dialectical materialism".

Historical-dialectical materialism for Leite (2017a) is a method of interpreting reality considered the theory of knowledge of original Marxism. For the author, this method "[...] considers that man is the greatest artisan of the reality that is constituted from the relationships that humanity establishes among itself and between nature" (Leite, 2017a, p. 851, translation our).

This approach has been applied in various areas of knowledge, such as philosophy, social sciences and political sciences. It offers a way to understand the change and evolution of society, as well as the resolution of conflicts and contradictions within it. By applying dialectical historical materialism to the area of education, it is possible to gain a deeper understanding of the social, political, and economic relations that influence educational processes. This approach allows for a critical examination of educational structures and institutions, to identify the contradictions and conflicts present, and to seek transformative solutions.

Furthermore, this approach emphasizes the importance of practice and action in transforming reality. Therefore, in the context of a Professional Master's course in EPT, this approach can stimulate applied research, taking into account practical intervention and the search for concrete solutions to educational challenges. In it, the dialectical process based on dialectical historical materialism can provide a solid theoretical basis for research, allowing a critical understanding of the contradictions present in education and the search for innovative alternatives.

In summary, EPT as an educational modality present in the different levels, stages and forms of teaching, has as its principles the centrality of work and research, interdisciplinarity and the inseparability between theory and professional practice. Over the years, the expansion of the IFs and the strengthening of the RFEPCT have contributed to the consolidation and improvement of EPT in Brazil, culminating in the creation of graduate programs, such as ProfEPT. This program, anchored in the educational and pedagogical principles of EPT, aims to promote social and scientific advances, strengthening interaction with society.

Based on work as an educational principle and research as a pedagogical principle, the Professional Master's Degree in EPT linked to ProfEPT, seeks to improve teaching processes, integrating knowledge from the world of work and systematized knowledge. In addition, the dialectical approach, based on historical-dialectical materialism, offers a critical perspective to understand and transform the educational reality, stimulating applied research and the search for concrete solutions to the challenges faced. In this way, the professional master's degree in EPT not only contributes to the professional development of educators, but also to the advancement and continuous improvement of education in the country.

## Work and education throughout history

For Saviani (2007), what guarantees human existence is education, that is, man is formed as a man, through production and through the educational process. Work defines the human essence. That said, we know that the relationship between work and education has suffered over time a distinction between the terms, however these terms are inseparable, as we can see in the work of Saviani (2007), *Work and education: ontological and historical foundations*, which portrays the different societies throughout history.

In the communal society, work and education were linked, as man did not have his existence guaranteed, he needed to act on nature, transforming it and adapting it to his needs, that is, In primitive communal society, work and education were inseparable. The communal mode of production, or 'primitive communism', did not present class division, and education occurred in an integrated way with work.

In primitive communities, education coincided entirely with the phenomenon previously described. Men collectively appropriated the means of production of existence and in this process they educated themselves and the new generations. The communal mode of production, also called 'primitive communism', prevailed there. There was no division into classes. Everything was done in common (Saviani, 2007, p. 154, emphasis added, translation our).

With the transition to the slave society, there was a significant break between work and education. The social division into classes — owners and slaves — resulted in a differentiated education for each group: while the owners received an education aimed at free men, the slaves were trained to serve. This split in education marked the introduction of a distinction that did not exist in communal society, reflecting the new relations of power and property.

In Antiquity, both Greek and Roman, this phenomenon is configured that opposes, on the one hand, an aristocracy that holds private property of land; and, on the other hand, the slaves. Hence the characterization of the old mode of production as a slave mode of production. Work is predominantly performed by slaves. Now, this division of men into classes will also cause a division in education. Thus, a split is introduced in the unit of education, previously fully identified with the work process itself (Saviani, 2007, p. 155, translation our).

In feudal society, education was heavily influenced by the Church. Although the State began to forge the idea of a public, universal, free, secular and compulsory school, education was still destined to serve the interests of the ruling class. The social division consolidated the separation between work and education, accentuating the difference between an intellectual education for the owners and a practical training for the serfs. With the institutionalization of education by the Church, it moved further away from the work process, reflecting the social and economic structures of the time.

With the rupture of the old mode of production (slave-owning), the feudal order will generate a type of school that in no way resembles the Greek Paideia. Unlike Athenian and Spartan education, as well as Roman education, in which the State played an important role, in the Middle Ages schools would strongly bear the mark of the Catholic Church (Saviani, 2007, p. 157, translation our).

Finally, in contemporary capitalist society, also called market society, exchange has become the determining factor of consumption, and social ties have replaced natural ties. With the modernization of industries, the need arose to simplify trades, reducing the need for specific qualification, since machinery began to perform many of the manual functions. As a result, the separation between work and education has deepened. Industrialization and modernization have transformed the mode of production, making specialization more common and replacing many manual functions with machinery. The Industrial Revolution brought with it an Educational Revolution, with the school assuming a central role in the formation of individuals for the new industrial order. However, this education remained divided: while an intellectual education was aimed at the owners and managers, the workers received practical and technical training.

This new form of production of human existence determined the reorganization of social relations. The dominance of industry in the sphere of production corresponds to the dominance of the city in the social structure. If the machine made possible the materialization of intellectual functions in the productive process, the way to objectify the generalization of intellectual functions in society was the school. With the impact of the Industrial Revolution, the main countries took on the task of organizing national education systems, seeking to generalize basic schooling. Therefore, the Industrial Revolution corresponded to an Educational Revolution: it placed the machine at the center of the production process; this has erected the school into the main and dominant form of education (Saviani, 2007, p. 159, translation our).

Saviani (2007) argues that these changes generated the social division of labor and the consequent formation of social classes, which led to the separation between education and production, manual labor and intellectual labor. In contemporary capitalist society, this division is even more pronounced, with education being shaped by the needs of the market and capital. The capitalist system, with its emphasis on profit-driven production, reinforces class division and perpetuates an education that serves the interests of the market more than the needs of the human being as a whole.

Saviani's analysis highlights how the capitalist mode of production, by focusing on the generation of profits, structures education in a way that serves the interests of capital, marginalizing equal access to knowledge and integral education. This class division and the separation between work and education not only perpetuate social inequalities, but also limit the potential of an education that could effectively contribute to the integral formation of the human being.

Thus, the study of the relationship between work and education throughout history, as discussed by Saviani, reveals the contradictions and challenges of an education that is trapped in the dynamics of power and production of the societies in which it is inserted. The search for an education that integrates human development in all its dimensions remains a challenge, especially in a society that privileges capital and the commodification of knowledge.

Furthermore, in order to deepen the analysis and offer a broader and more critical view of the historical evolution and the contradictions between work and education discussed by Saviani (2007) in the different social formations throughout history, it is relevant to consider the notes of Ribeiro et al. (2019). These authors highlight that the relationship between work and education is central to the understanding of human nature and the role of education in society. Based on Saviani (2011), they argue that work has ontological priority, as it requires the articulation of ideas, concepts, and values to intentionally produce humanity in each individual. Thus, education has an ontological dependence on work, but it also maintains a relative autonomy and a reciprocal determination, without being completely determined or determinant.

Lukács (1979) is cited to reinforce that work is the starting point of humanization, the development of human faculties and mastery over oneself. Education, in this context, is seen as a necessity for the continuity of human existence, being responsible for the transmission of material and cultural knowledge that humanizes individuals.

The authors point out that, historically, education was integrated into the social totality, occurring spontaneously and articulating the singular and the generic, but that, in class societies (slavery, feudalism, capitalism), strict education meets the interests of the dominant minority. According to Lima (2009), this form of education is characterized by its dependence on class division, resembling the complex of Law in that it meets particular rather than universal interests.

Ribeiro et al. (2019) also criticize capitalist society for denying workers access to the knowledge accumulated by humanity, restricting it to the needs of big capital and promoting the commodification of education. They argue that, in this logic, the children of workers have limited access to knowledge, perpetuating class inequalities. According to Araujo et al. (2012), this prevents individuals from appropriating the symbolic and material wealth produced by humanity, as highlighted: "[...] a minority has access to historically accumulated cultural wealth, while the majority survives on the margins of it" (Araujo et al., 2012, p. 197, translation our).

Finally, the authors suggest that the destructive logic of capital exacerbates social problems, not because of the lack of development of the productive forces, but because of the social relations that govern this development. Thus, attempts to control the social maladjustment caused by the laws of capitalism, through legal, political or educational acts, are seen as sterile, since they do not attack the roots of the problem.

According to the analyses of Saviani (2007) and Ribeiro et al. (2019), we can infer that work and education are fundamental to human existence. Social transformations throughout history have generated a social division of labor, resulting in the formation of distinct social classes and different types of education. On the one hand, the landlords and burghers received an intellectual education, designed to prepare them for positions of leadership and control. On the other hand, the non-proprietors, or proletarians, were subjected to a practical education, closely linked to the labor process. This class division led to the separation between school and production, as well as between manual labor and intellectual labor. With the emergence of capitalist society, the mode of production that previously aimed at subsistence and the fulfillment of basic needs was transformed to meet the capitalist market. Production has come to be geared towards generating

profits, reflecting a capitalist system that reproduces and strengthens itself through class division. The analyses of these authors show how these structural changes impacted the relationship between work and education, consolidating the separation and specialization that we know today.

## Metamorphoses in the world of work and their articulation with EPT

According to Ciavatta (2012, p. 34, translation our), "[...] the concept of the world of work includes material, productive activities, as well as all the processes of cultural creation that are generated around the reproduction of life". To understand the worlds of work, it is necessary to distinguish the forms of work in society, initially work in its ontological, fundamental and structuring sense where man interacts with nature to produce and reproduce his own existence, producing only what is necessary for himself and his community, finally, work in the historical context, painful, alienating and disintegrating of human values, where man starts to produce no longer for his survival, but to convert his labor power into commodities that will generate profit for the owners of the means of production.

We know that alienation is the reduction of the ability of individuals to think or act for themselves. But in the philosophical field, does alienation take on the same meaning? According to Barros (2011, p. 229, translation our) "[...] Marx had dealt essentially with the problem of human alienation in its various forms (including in work, but also in religion, in politics, in man's own ecological relations with nature)". As we can see, there are several forms of alienation, such as transferring ownership or responsibility to someone else and disconnecting from what is around us. However, it is difficult to determine which form of alienation is the worst among religious, cultural, political, social, or work. Each of them has distinct characteristics and consequences, affecting individuals and society in different ways. The severity of alienation can vary depending on the context and individual experiences.

Still, according to Barros (2011, p. 229, emphasis added, translation our) Marx in 1845, "[...] would discover [...] that the alienation produced in the world of work was the maternal womb of all alienations – the root of the 'estrangement' that threw the common man of the modern world into suffering and unconsciousness". Therefore, we can infer that alienation produced in the world of work is responsible for all other forms of alienation to which we are exposed, and this is mainly due to the capitalist production model that separates the individual from the process of producing for his subsistence and starts to produce for the market, with this he now no longer recognizes himself in what he produces, It is this estrangement of man with the product that leads to dehumanization.

This process of alienation intensified with industrial expansion and became more dense with the fetishization of the commodity, which is something that is not appropriated, not taken, but commands the economic world. It is in the digital world that this fetishization reaches its limit, with the advancement of technologies, now in the palm of the hand through the cell phone, this appeal for consumerism takes strength, and man does not even realize it, he does not realize that he has become dependent and a slave to what the capitalist market dictates.

As Holloway (2003, p. 97, translation our) points out, "[...] Marx condemns capitalism not only for the misery it causes, but above all for the inversion between things and people: in other words, for the fetishization of social relations". According to Marx, commodity fetishism is a social phenomenon that occurs in the context of capitalism, in which social relations between people are mediated through things. This means that people do not relate directly to each other, but rather through the commodities they produce and exchange.

In this same context is education, which from economic and political constructions tends to gain the meaning of a commodity of exchange, as we can see in Marx's formulation of productive work, where he identified that the bourgeoisie has no limits in the generation of surplus value, as it seeks to transform into a commodity everything within its reach.

If we are allowed to choose an example outside the sphere of material production, we shall say that a schoolmaster is a productive worker if he does not confine himself to working the heads of children, but demands labor from himself to exhaustion, in order to enrich the master. That the latter has invested his capital in an educational factory, instead of a sausage factory, is something that does not alter the relationship in any way (Marx, 2013, p. 578, translation our).

In a broader context, we can infer that the flexible accumulation regime or Toyotist mode of production served to boost the economy, production began to be driven by demand, describing a mode of functioning of



capitalism that is characterized by flexibility in the processes of production, work and consumption. Although this logic of organizing production after demand has proven to be highly economical for industries, heating up the market and enriching the owners of the means of production also generates inequalities and social instabilities.

Within the flexible accumulation regime, the new forms of work require constant adaptation and training of workers. With rapid technological evolution and changes in production structures, it is necessary for workers to acquire new skills and knowledge to remain employable and keep up with market demands, leading to the general deterioration of working conditions and the loss of job security and stability for most workers.

The precariousness of work is posed to society in several ways, among them we have flexibility in hiring and managing the workforce, this leads to the adoption of temporary employment contracts, short-term contracts, part-time work, project work and other atypical forms of employment, another way, no less worrying is the outsourcing and subcontracting of work, Companies tend to outsource various parts of their production chain and hire external suppliers and service providers. This leads to a fragmentation of work and the subcontracting of specific activities, which often results in less favourable working conditions for outsourced workers. They may face lower wages, less social protection, and fewer labor rights compared to workers hired directly by the company.

However, this precariousness also affects education, since the forms of work within the flexible accumulation regime require the training of workers, including teachers, and this has led to the precariousness of teaching work. The appropriation of education as a commodity by capital is a concern in several contexts. Neoliberalism and the logic of the market have influenced the way education is conceived and organized in many countries, placing it more and more as a service to be bought and sold, transforming it into a commodity, instead of being recognized as a fundamental human right.

This market-based perspective of education has led to a series of consequences, such as:

- a) The commercialization of education where education is treated as a product to be marketed, educational institutions acting as companies and students as customers;
- b) Student indebtedness: As education is treated as a commodity, educational institutions often increase tuition, making access to higher education more difficult for low-income social groups. This leads to increased student debt, as many students have to resort to loans to finance their studies;
- c) Privatization of education, in this process of precariousness the private sector has expanded in the field of education, with the establishment of private educational institutions that seek to obtain profits. This can lead to the exclusion of marginalized groups who cannot afford the higher tuition fees of private institutions;
- d) Reduction of teacher autonomy, the commercialization of education will lead to a reduction in teacher autonomy and the standardization of curricula, focusing on content that meets the demands of the labor market, rather than a broader and more critical education.

However, it is important to note that there are resistances and movements that seek to preserve education as a public good and defend a broader view of education as a human right. The fight for accessible, inclusive and quality education for all remains a crucial challenge in many societies.

Even though it is practically impossible, in a capitalist society, to completely avoid alienation, we find in the movements in defense of an integral and polytechnic education a space of resistance to alienation. When conceived and practiced in a critical and emancipatory way, education can challenge and question the forms of oppression and inequality present in society, rather than simply reproducing existing norms and structures. Ricardo Antunes, in an interview on the Youtube channel, in January 2021, pointed out that education as social transformation must be based on the teachings of Karl Marx, who had criticism as a central category of his thought, made his works an act of denial of alienation, did not limit himself to writing about the subject and criticized those who did it, as we can see in this phrase from Marx, addressed directly to Feuerbach, "[...] philosophers have limited themselves to interpreting the world in different ways; what matters is to modify it" (Antunes, 2021, translation our). Marx considers traditional theoretical philosophy a simple form of idealism, detached from concrete social reality and, in this sense, useless (Antunes, 2021).

## EPT: Current challenges

EPT faces several challenges today that need to be addressed to contribute to the effectiveness and relevance of this educational modality. In this sense, it is necessary to analyze, in a broader way, the flexible accumulation regime that has been serving to boost the economy. In it, production started to be driven by

demand, which has proven to be highly economical for industries, heating up the market and enriching the owners of the means of production. For workers, it has been increasingly cruel and inhumane, resulting in the precariousness of education and work, directly affecting EPT.

It is these new ways of working involving the context of flexible accumulation that are demanding the training of workers. Teacher training, which has been one of the forms of precariousness of work, can be understood in the same movement that explains the precariousness of all workers. Nevertheless, capital sees the opportunity to appropriate education, in commodity form, as a way to intensify its project of alienation from society. According to Martins and Pina (2020), this project of commodification of education is an extreme attempt to resignify the social function of the public school through the redefinition of educational work, that is, an ideological political project to transform education into a service and a mercantile product.

According to Rodrigues (2007), this is a worldwide movement of the bourgeois class that can be evidenced especially in the transfer of the management of higher education in Brazil to the private sector. The same occurs in basic education, which, according to Adrião et al. (2009, p. 810, translation our) "[...] it is as the most recent movement of this same capital that we perceive the sale of handouts/systems to public networks [...]", enabling new gains for this class.

Recently, this project was intensified with Constitutional Amendment 95 of the Public Expenditure Ceiling, which condemns public education to misery and total lack of investments, as pointed out by Escott (2020). In addition, Law No. 13,415 (2017) corroborated the precariousness and commodification of education, conferring legality to the National Common Curriculum Base for High School (BNCC). The (counter) reform of secondary education, as highlighted by Escott (2020), introduces training pathways, reinforcing, once again, the perspective of structural duality and reintroducing the competency-based curriculum.

With this, we have the permanence of technicist principles as a basic reference in the organization of public education in Brazil. A technicist education supported by the theoretical premises of human capital, which sees education as an instrument at the service of capital, in which the important thing is to 'learn to do'. In this sense, Frigotto (2010) points out that the theory of human capital, in practice, works as a powerful instrument to perpetuate common sense, establishing education as a means of preserving the capitalist order, incorporating relations of domination and submission.

In this dismantling of education, through Law No. 13,415 (2017), it is evident in the fragmented curriculum, which constitutes no connection between general education and components that make up the training itineraries, in fact these with the possibility of the performance of 'professionals with notorious knowledge' for the itineraries of technical and professional training, contributing to the growing devaluation of teachers (Law No. 13,415, 2017).

The consequence of this reform is well defined in the Note of Repudiation of ANPEd - National Association of Graduate Studies and Research in Education, to the New National Curriculum Guidelines for Professional and Technological Education, published on January 20, 2021.

The counter-reform of secondary education as a whole, and, in particular, of the DCNEPT (this analysis also includes the Report of Opinion CNE/CP n0 17/2020, which gave rise to these guidelines), can be synthesized by the direction towards a complete fragmentation of the final stage of basic education, depriving the children of the most impoverished working class of access to the knowledge produced and accumulated by humanity and, at the same time, promoting its privatization through a public-private partnership that, in practice, transfers public resources to the private sector so that it, on the one hand, defines the conception of education and, on the other, offers or manages (administers, evaluates, and controls) the education that will be provided to the population (National Association of Graduate Studies and Research in Education, 2021, translation our).

As we can see, this education project is once again at the service of capital, imposing its mediations: a set of limitations on people's lives, guiding their relationships, their way of seeing the world and their dreams, resulting in the alienated way of understanding life. These challenges require a continuous commitment on the part of educational institutions, governments and society in general. Collaboration and dialogue between these segments are essential to address these challenges and ensure that EPT prepares students for the world of work and life in society.

## Omnilateral training as a principle of EPT

The conception of education refers to the particular view or perspective that a society, educational institution, educator, or individual has about the educational process and the purpose of education. This

conception can be influenced by different factors, such as culture, values, philosophical and social beliefs. There are various conceptions of education that shape educational practices around the world. In the context of EPT, we can highlight some of these conceptions as being fundamental for omnilateral human formation:

a) Education as an omnilateral development, this conception seeks the integral development of individuals, including physical, social, emotional and intellectual aspects. Education is seen as a way to develop the potential of each student, preparing him for life in society;

b) Education as a process of knowledge construction, education is seen as an active process in which students build their knowledge through interaction with the environment, classmates and teachers. The focus is on meaningful learning and problem-solving;

c) Education as social transformation, this conception emphasizes the importance of education for social transformation and the development of critical and participatory citizens. Education is seen as a tool for social transformation;

d) Education as the development of critical thinking, the emphasis is on the development of critical thinking and the ability to question, analyze and evaluate information. Education in this conception is seen as a way to develop students' ability to think independently;

e) Education as preparation for the world of work, this conception, aligned with the foundations of professional and technological education, which aims to transmit the scientific, philosophical and artistic knowledge produced by humanity, implies developing the human being in all its dimensions, social, ethical, political, economic and technological, creating real conditions for overcoming the barriers that prevent emancipation and human development, preparing professionals to face the challenges of the world of work, forming citizens capable of understanding all the processes of their craft, able to perform any task within these processes, even that of leaders.

All these conceptions corroborate the education that in Marx should be at the same time intellectual, physical and technical, also called omnilateral education, that is, capable of fully developing all the potentialities of man, the combination of intellectual education with material production, instruction with physical exercises and these with productive work. Taking into account that "[...] the terms polytechnic education and technological education were used by Marx to explain his defense of a teaching that allows the understanding of the technical-scientific foundations of the production processes" (Ciavatta & Ramos, 2011, p. 32, translation our).

In the same vein, we have in Gramsci (apud Martins, 2021), education as being any and all processes of human formation, developed to make the human being current to his time, a process that makes man what he is, in all his objective and subjective dimensions, for him education and the social structure maintain a dialectical relationship with each other.

Therefore, in view of these different conceptions, we realize that education transcends the limits of the classroom, extending to the construction of the individual in its totality. Whether in the construction of knowledge, in social transformation, in critical thinking or in preparation for the world of work, these conceptions highlight the diversity of objectives and purposes attributed to education and play a vital role in the formation of full and active human beings in their realities. This is in line with the purpose of EPT, contributing to the citizen being able to insert and act in the world of work and in life in society, aligning with Marx's vision of omnilateral education.

## Final considerations

This work reflects on EPT and its fundamental role in promoting an omnilateral human formation, essential for the construction of a more just and inclusive society. By integrating theory and practice, work and research, EPT provides an education that goes beyond the development of technical skills, cultivating individuals who are critical, ethical, and aware of their role in the world. Professional master's degrees in EPT, such as ProfEPT, represent a significant advance in this context, by providing in-depth training aligned with the contemporary needs of the world of work and society. This educational modality, based on the principles of historical-dialectical materialism, not only improves teaching practice and educational management, but also boosts the production of knowledge and pedagogical innovation, contributing directly to the social and economic development of the country. Thus, EPT reaffirms its commitment to the integral formation of citizens, preparing them to face the challenges of a world in constant transformation, while promoting equity and social inclusion.

Throughout history, the relationship between work and education has been shown to be fundamental in the constitution of human societies. From primitive communities, where work and education were intrinsically linked, to contemporary capitalist society, marked by the alienation and commodification of education, it is observed that these two spheres are central to the understanding of social dynamics. The evolution of forms of production and the development of educational structures reflect and influence social, political and economic changes.

In the current context, marked by the flexibilization of accumulation regimes and the precariousness of labor relations, EPT faces significant challenges. EPT must not only prepare individuals for the labor market, but also play a crucial role in the critical and integral formation of citizens, enabling them to understand and question the conditions of their existence and to contribute to social transformation.

In the face of the pressures of capitalism, which tends to transform education into a commodity and to subordinate education to the interests of the market, it is essential to reaffirm the importance of an omnilateral education, which seeks the full development of the human being in all its dimensions. This educational conception must be guided by the principles of an education that integrates scientific, technical, ethical and political knowledge, preparing individuals not only for work, but for life in society in a critical and emancipatory way.

Therefore, the intersection between work and education, which has historically shaped societies, must be revalued and resignified to face contemporary challenges. The struggle for an education that transcends mere preparation for the labor market and that promotes integral human development remains an imperative for the construction of a more just and equitable society.

The findings of this study suggest other theoretical searches and new data analyses that can contribute to understanding the challenges of EPT in the current context, marked by rapid social transformations, as well as its relevance for integral education. The notes here are current and can be deepened in other research works, and it persists, therefore, that other investigations involving this theme will collaborate both to further expand the understanding of the founding principles of EPT, contributing to the planning and organization of this modality of education.

## Data availability

This article has a theoretical character, based on references and concepts arising from a broader research, without directly using the empirical data produced. Thus, the indication of data store does not apply to this article.

## References

- Adrião, T., Garcia, T., Borghi, R., & Arelaro, L. (2009). Uma modalidade peculiar de privatização da educação pública: a aquisição de "sistemas de ensino" por municípios paulistas. *Educação & sociedade*, 30(108), 799-818. <https://doi.org/10.1590/S0101-73302009000300009>
- Antunes, R. (2021, 15 janeiro). O que é alienação [Entrevista]. *TV Boitempo*. YouTube. [https://www.youtube.com/watch?v=VR4kD\\_9kY4M](https://www.youtube.com/watch?v=VR4kD_9kY4M)
- Araujo, A. C. B., Cabó, L. J. F., & Gonçalves, R. M. D. P. (2012). O papel do trabalho no processo de humanização dos sentidos: Elementos ontológicos e históricos. In I. M. S. Farias, S. M. Nobrega-Terrien, & A. D. F. Carvalho (Orgs.), *Diálogos sobre a formação de professores* (pp. 193–203). EDUFPI.
- Associação Nacional de Pós-Graduação e Pesquisa em Educação. (2021, 20 de janeiro). Nota de repúdio às novas diretrizes curriculares nacionais para educação profissional e tecnológica. <https://anped.org.br/>
- Barros, J. D. A. (2011). O conceito de alienação no jovem Marx. *Tempo Social: Revista de Sociologia da USP*, 23(1), 223-245. <https://doi.org/10.1590/S0103-20702011000100011>
- Ciavatta, M. (2012). O mundo do trabalho em imagens: memória, história e fotografia. *Revista Psicologia Organizações e Trabalho*, 12(1), 33-45.
- Ciavatta, M., & Ramos, M. (2011). Ensino médio e educação profissional no Brasil: dualidade e fragmentação. *Retratos da Escola*, 5(8), 27-41. <https://doi.org/10.22420/rde.v5i8.45>
- Della Fonte, S. S. (2018). Formação no e para o trabalho. *Educação Profissional e Tecnológica em Revista*, 2(2), 6-19. <https://doi.org/10.36524/profept.v2i2.383>

- Escott, C. M. (2020). Educação Profissional e Tecnológica: avanços, retrocessos e resistência na busca por uma educação humana integral. *Revista de Educação Pública*, 29. <https://doi.org/10.29286/rep.v29ijan/dez>
- Fachin, O. (2006). *Fundamentos de metodologia* (5a ed.). Saraiva.
- Freitas, R. C. O., Barreiro, C. B., Souza, R. R., Franco, F. S. C. & Murta, R. (2017). O mestrado profissional em educação profissional e tecnológica em rede nacional: considerações preliminares. *Educação Profissional e Tecnológica em Revista*, 1(1), 74-89. <https://doi.org/10.36524/ept.v1i1.359>
- Frigotto, G. (2010). *A produtividade da escola improdutiva* (9a ed.). Cortez.
- Frigotto, G. (2012). Educação omnilateral. In R. Caldart, I. B. Pereira, P. Alentejano, & G. Frigotto (Orgs.), *Dicionário da educação do campo* (pp. 265-271). Escola Politécnica de Saúde Joaquim Venâncio, Expressão Popular.
- Harvey, D. (1992). *A condição pós-moderna*. Loyola.
- Holloway, J. (2003). *Mudar o mundo sem tomar o poder*. Viamundo.
- Lei nº 13.415, de 16 de fevereiro de 2017. (2017, 16 de fevereiro). Altera as Leis nos 9.394, de 20 de dezembro de 1996, que estabelece as diretrizes e bases da educação nacional, e 11.494, de 20 de junho 2007, que regulamenta o Fundo de Manutenção e Desenvolvimento da Educação Básica e de Valorização dos Profissionais da Educação, a Consolidação das Leis do Trabalho - CLT, aprovada pelo Decreto-Lei no 5.452, de 1º de maio de 1943, e o Decreto-Lei no 236, de 28 de fevereiro de 1967; revoga a Lei no 11.161, de 5 de agosto de 2005; e institui a Política de Fomento à Implementação de Escolas de Ensino Médio em Tempo Integral. Presidência da República. [https://www.planalto.gov.br/ccivil\\_03/\\_ato2015-2018/2017/lei/113415.htm](https://www.planalto.gov.br/ccivil_03/_ato2015-2018/2017/lei/113415.htm)
- Leite, P. S. C. (2017a). *Contribuições do materialismo histórico-dialético para as pesquisas em Mestrados Profissionais na área de ensino de humanidades*. In Anais do 6º Congresso Ibero-Americano de Metodologias de Investigação (Vol. 1), CIAIQ, Salamanca, ES.
- Leite, P. S. C. (2017b). *Formação humana em diálogo: educação profissional, estética e arte*. Edifes.
- Lima, M. (2009). *Trabalho, reprodução social e educação em Lukács* [Dissertação de Mestrado, Universidade Estadual do Ceará].
- Lukács, G. (1979). *Ontologia do ser social: os princípios ontológicos fundamentais de Marx*. Ciências Humanas.
- Marconi, M. A., & Lakatos, E. M. (2017). *Fundamentos de metodologia científica* (8a ed., J. B. Medeiros, Atual.). Atlas.
- Martins, A. S., & Pina, L. D. (2020). Mercantilização da educação, escola pública e trabalho educativo: uma análise a partir da pedagogia histórico-crítica. *Revista HISTEDBR On-line*, 20, e020052-e020052. <https://doi.org/10.20396/rho.v20i0.8657754>
- Martins, M. F. (2021). Gramsci, educação e escola unitária. *Educação e Pesquisa*, 47, e226099. <https://doi.org/10.1590/S1678-4634202147226099>
- Marx, K. (2013). *O capital: crítica da economia política. Livro I: O processo de produção do capital*. Boitempo.
- Minayo, M. C. D. S. (1994). Ciência, técnica e arte: o desafio da pesquisa social. In M. C. S. Minayo (Org.), S. F. Deslandes, & O. Cruz Neto. *Pesquisa social: teoria, método e criatividade*, 21, 9-29.
- Ramos, M. N. (2014). *História e política da educação profissional*. Instituto Federal do Paraná.
- Resolução nº 510, de 7 de abril de 2016. (2016, 7 de abril). Dispõe sobre as normas aplicáveis a pesquisas em Ciências Humanas e Sociais cujos procedimentos metodológicos envolvam a utilização de dados diretamente obtidos com os participantes ou de informações identificáveis ou que possam acarretar riscos maiores do que os existentes na vida cotidiana. [https://bvsms.saude.gov.br/bvs/saudelegis/cns/2016/res0510\\_07\\_04\\_2016.html](https://bvsms.saude.gov.br/bvs/saudelegis/cns/2016/res0510_07_04_2016.html)
- Resolução nº 1, de 5 de janeiro de 2021. (2021, 5 de janeiro). Define as diretrizes curriculares nacionais gerais para a educação profissional e tecnológica. [https://www.gov.br/mec/pt-br/assuntos/resolucoes/rcp001\\_21](https://www.gov.br/mec/pt-br/assuntos/resolucoes/rcp001_21)
- Ribeiro, E. C. S., Santos, J. D. G., & Sobral, K. M. (2019). Trabalho, educação e capital: percursos históricos e impedimentos para a formação omnilateral. *Trabalho & Educação*, 28(2), 63-77. <https://doi.org/10.35699/2238-037X.2019.9878>
- Rodrigues, J. R. (2007). *Os empresários e a educação superior*. Autores Associados.
- Saviani, D. (2007). Trabalho e educação: fundamentos ontológicos e históricos. *Revista Brasileira de Educação*, 12(34), 152-165. <https://doi.org/10.1590/S1413-24782007000100012>
- Saviani, D. (2011). *Pedagogia histórico-crítica: primeiras aproximações* (11a ed.). Autores Associados.

- Silva, C. N. N., Araújo, P. A., Frois, R. R. S., & Guimarães, V. P. A. (2022). Determinantes metodológicos que entram na configuração dos mestrados profissionais no Brasil: concepções, método e resultados para a sociedade. In C. N. N. Silva, D. S. Rosa, & M. R. G. Ferreira (Orgs.). *A metodologia da pesquisa em educação profissional e tecnológica* (pp. 123-142). Editora Nova Paideia.
- Triviños, A. N. S. (2009). *Introdução à pesquisa em ciências sociais: a pesquisa qualitativa em educação – O positivismo, a fenomenologia, o marxismo* (5a ed.). Atlas.
- Urbanetz, S. T., Cassiano, E. L., & Bettoni, V. (2020). O Mestrado Profissional em Educação Profissional e Tecnológica - PROFEPT - e o significado dessa oferta de formação em pós graduação no Brasil. *Movimento-Revista de Educação*, 7(14). <https://doi.org/10.22409/mov.v7i14.43914>

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