



## Polytechnic education in Brazil expressed in Professional Education<sup>1</sup>

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### Summary

The article analyzes the Polytechnic Education, in the Marxian perspective applied in the revolution of the Soviet Union, in its positive and negative points, in parallel to the reality of Integrated High School and Vocational Education in Brazil. It is a bibliographical research, with the dialectical method, and has as theoretical support the thought of Marx, Pistrak, and other authors who are supported by the Marxian theory. We found that the dual aspect of labor in capitalism leads to dual aspects of education and the concept of polytechnics. In its negative aspect, this education perpetuates the division of classes when it occurs to serve the interests of capital. In its positive aspect, it proposes to overcome the unilateral education in the molds of capital. We conclude that what has been pulverized in Professional Education in Brazil is polyvalence - the subject must be able to apply new technologies to meet the quality of production and perform different tasks.

**Keywords:** Vocational Education. Double aspect of work. Polytechnics. Omnilateral formation.

### A Educação politécnico no Brasil expresso na Educação Profissional

#### Resumo

O artigo analisa o Ensino Politécnico, na perspectiva marxiana aplicada na revolução da União Soviética, em seus pontos positivos e negativos, em paralelo com a realidade do Ensino Médio Integrado à Educação Profissional brasileira. Trata-se de uma pesquisa bibliográfica, com o método dialético e tem como aporte teórico o pensamento de Marx, Pistrak, e outros autores que se fundamentam na teoria marxiana. Constatamos que o duplo aspecto do trabalho no capitalismo leva ao duplo aspecto da educação e do conceito de polidez. No seu aspecto negativo, essa educação perpetua a divisão de classes quando

<sup>1</sup> This article is the result of the dissertation work Secondary education integrated with professional education: omnilateral or unilateral training? by Ana Paula Lima Azevedo defended in the Master's program in Education at the Federal University of Ceará in 2017.



ocorre para atender aos interesses do capital. No seu aspecto positivo, ela propõe a superação da formação unilateral segundo os moldes do capital. Concluimos que o que vem sendo pulverizado na Educação Profissional no Brasil é a polivalência - o sujeito deve ser capaz de aplicar novas tecnologias para atender à qualidade da produção e realizar diferentes tarefas.

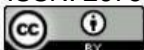
**Palavras-chave:** Formação profissional. A dupla vertente do trabalho. O politécnico. Formação unilateral.

## 1 Introduction

High School in general, Vocational Education and High School Integrated to Vocational Education have been the subject of discussion and innovation in the Brazilian educational complex. As an example, we have the promulgation of the Federal Decree No. 5.154, July 23, 2004, which legalized the curricular integration of High School with Vocational Education, leading to changes in the National Curricular Guidelines for High School and Vocational Education, which mention, in their 2013 guidelines, nuances about human training (omnilateral) in the perspective of developing in the student a critical conception of reality and the insertion of the egress in the world of work.

After the promulgation of the Decree on Vocational Education No. 5.154, in the government of Luís Inácio Lula da Silva, in July 2004, the debate emerges with more intensity between two groups that position themselves to analyze this decree. One group is represented by those who think that the current decree is the only possible way to face educational duality, including the duality between Professional Education and High School. The second group, pretending to be realistic, believes that the decree ends up naturalizing duality, although both groups share the conception of Polytechnic Education in its positive sense and contrary to educational duality. This movement is strengthened by leftist intellectuals who ideologically seek to overcome the duality of Brazilian education advocated throughout its historical trajectory.

The true conception of integrated education would make possible the overcoming of the historical duality of Brazilian education that is endorsed by Decree 2,208/97, which



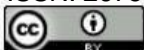


instituted the so-called Reform of Professional Education, still in the first Fernando Henrique Cardoso government (1995-1998), whose cornerstone is the division between public and private education: for some, the ruling elite, a propaedeutic education that prepares for higher education; for the great majority of society, an education aimed at the training of labor to meet the needs of the capitalist system. This maintains and accentuates the social division of labor, which separates the action of executing (manual labor) from the actions of thinking, directing, and planning (intellectual labor). The law n. 13.415/2017 promulgated in the Michel Miguel Elias Temer government (2016-2018) titled as the new high school reform that began to take effect in the year 2022, in the last year of President Jair Messias Bolsonaro's government, follows the same neoliberal ideological vein, prioritizing the interests of capitalism further intensifying duality in Brazilian Education and significantly increasing social inequalities.

This article aims to analyze Polytechnic Education from a Marxian perspective applied during the revolution in the Soviet Union, taking its principles, its positive and negative points, making a parallel with the reality of High School Integrated to Vocational Education in Brazil. To reach the proposed objective, we intend to base a historical-social conception of work as an educational principle focused mainly on the omnilateral formation of workers, that is, a formation that takes into account not only instruction, but also that it be integral in the sense of the formation of the spirit and of the five senses, as stated by Marx (1989) in his work *The Economic-Philosophical Manuscripts*.

Therefore, we intend to reflect on Polytechnic Education thought from a Marxian perspective and applied in the period of the revolution in the Soviet Union based on the experience of socialist educators, also taking Brazilian authors such as: Saviani, Frigotto, Machado, Kuenzer, Ciavatta, among others who study the field of Work and Education. We discuss the formation for work from a theoretical point of view, making a parallel with the High School Integrated to Professional Education in Brazil.

## 2 Methodology





## 2.1 Work as an educational principle and its dual dimension

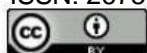
In order to talk about work as an educational principle, it is necessary to understand, first of all, the double dimension of work in Marx's view of capitalism.

Therefore, even though Marx criticizes capitalist society, we cannot ignore his theorization of work as a fundamental category of man in society. In this sense, Lopes (2002, p. 46) points out that "[...] one cannot deny Marx's position on the social constitution of human life. The social constitution of men through work is intrinsic to human sociability itself and is present in any given social form, as Marx says (1985, p. 149):

The production of use-values or goods does not change its general nature because it takes place for the capitalist and under his control. Therefore the labor process must be considered at the outset independently of any given social form [...] First of all, labor is a process between man and Nature, a process in which man and Nature, by their own action, mediate, regulate and control their metabolism with Nature.

We can see, in the quote above, that Marx is talking about the positive and necessary character of labor in the social life of men, regardless of its alienated manifestation in capitalism. It is through this prism that Marx deals with the double aspect of work in capitalism: at the same time that it constitutes human social life, and in this sense it appears as a creator of value and use, positive and necessary; it also denies human generosity by exploiting the worker, transforming his labor into merchandise, and in this sense it appears as a creator of exchange value, alienating and contingent, and it can and must be overcome. But it is worth pointing out that this overcoming is not of labor itself, but of its negative and alienated aspect.

The question of the double aspect of labor in capitalism brought great revelations of the appearance and essence of the capitalist system, contributing to the understanding of political economy, whose interest is to produce not only use value, but, above all, to produce exchange value, a dimension that expresses the extraction of surplus value through the commodity labor force of the worker. Marx (1985, p. 49) highlights this revelation when he says that "[...] this dual nature of the commodity was critically



demonstrated for the first time by me. He also states that this "[...] is the crucial point around which the understanding of political economy revolves" (MARX, 1985, p. 49).

Addressing this issue, Lopes (2002, p. 54) points out that "[...] in the capitalist system, the market becomes the real basis on which all legal, political and social relations are founded. In this context, social relations are nothing more than expressions of mercantile relations. Here the interest in profit, and consequently the utilitarian character of things, predominates.

The central issue resides in the fact that capitalism is sustainable through the work of human beings, because the prevailing order of this system distances the worker from the product, the fruit of his work, because it has been produced by orders and interests that are alien to him. In this system the worker does not perceive himself as being part of the process, because he denies his human generosity by becoming a means by which the capitalist extracts his profit. In this way, the worker appears as a thing, a commodity like any other. The consequence of this relationship is that the worker passes from the human condition to a commodity at the service of capitalism and, by becoming a thing, loses his own humanity. In this way, according to Marx, the alienation of labor and the objectification of the worker in capitalism is constituted.

All this also affects education because all work, in order to be performed, requires learning, the development of skills, etc., which certainly requires an educational process. From this it follows that education also has its double aspect: it is necessary to human sociability through which a process of teaching and learning of culture, sciences, ideologies, etc. takes place; however, it manifests itself according to the productive process, that is, according to how work is processed we will have a type of education. Well, if in capitalism the negative and alienating aspect of labor predominates, we will also have the manifestation of this aspect in education. Here we have the understanding of work as an educational principle, since it always requires a type of education, be it in its positive or negative aspects.

In his essay *Labor as an Educational Principle in the Face of New Technologies*, Saviani (1994) demonstrates that, since primitive communism, education occurs



according to the mode of production. In this respect, he says that "[...] work has been, is, and will continue to be the educational principle of the educational system as a whole" (SAVIANI, 1994, p. 165). In another essay, Saviani (2007) considers it inevitable to separate man, work, and education, since they are an ontological and historical construction.

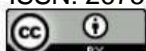
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Explaining Saviani's position (2007), Frigotto, Ciavatta, and Ramos (2005, p. 3-4) state that work as an educational principle can be considered in three different ways, but articulated among them:

In a first sense, labor is an educational principle insofar as it determines, through the degree of social development achieved historically, the mode of being of education as a whole. In this sense, to the modes of production correspond distinct modes of educating with a corresponding dominant form of education. And in a second sense, labor is an educational principle insofar as it places specific demands that the educational process must fulfill, in view of the direct participation of the members of society in socially productive work. Finally, labor is an educational principle in a third sense, to the extent that it determines education as a specific and differentiated mode of labor.

Therefore, work as an educational principle is associated with the way of being of human beings, the way they work, interact, appropriate and transform the environment in which they are inserted. This process experienced by man imprints the condition of socializing work as an educational principle, resulting in the reproduction and social constitution of men, whether in its negative and/or positive sense.

In view of this dual aspect of work and its educational principle, a dualism in education was also established, that is, two distinct modes of education: one for the owner class and another for the working class. In this second sense, the school acquires the challenge of instructing the workers, making them more efficient in their functions, so that they learn to be "good citizens" and disciplined workers. In this way, education takes on a very important meaning, whether to serve the interests of capitalism or to prepare the subject for new challenges, making him creative and autonomous to deal with the new labor relations within the dualist educational system that perpetuates the social division of labor in the current production system, but that also leads men to think about their situation of exploitation and to want to transform this state of things.





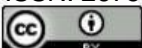
What we are proposing in this discussion, despite the predominance of the negative aspect of work and education, is to point out the need and the possibilities to outline an educational action that can go against the education offered in the molds of capitalism. We will later see some elements in this direction indicated by the socialist educators at the time of the Soviet Revolution, bringing to our reality conceptions to promote awareness based on historical and dialectical thinking in the educational process, seeking to develop in students capabilities to perform a critical reading of reality and to think and act towards its transformation.

## 2.2 The main characteristics of the Polytechnic School in Marxian conception

Marx's writings, which take us back to education, raise fundamental questions to reflect on some elements of educational theory and practice today. One of these elements concerns the practice of the so-called Polytechnic Education. Here it is necessary to resume what we discussed in the previous topic in relation to the dual aspect of work in capitalism, which also leads, we can say, to the dual aspect of Polytechnic Education.

In its negative aspect, this education tends to perpetuate the division of classes when it occurs to meet the interests of the capital, whose intention is not to form the individual for his or her labor satisfaction, but to form him or her with the skills and technological competencies to meet only the market's logic, that is, the predominance of polyvalence.

Polytechnic Education, on the other hand, in its positive aspect, defended by Marx, would be an alternative to overcome the unilateral formation in the capital molds, that is, it would be an education for the omnilateral formation of the student, taking work as an educational principle in its positive sense and as an instrument of formation for life. Polytechnic education, in this sense, would aim at the preparation of the citizen, at human formation in all its dimensions: physical, mental, intellectual, affective, aesthetic, political and practical, relating work and education, in its broad and integral aspect, that is,





omnilateral. It is in this sense that the Polytechnic Education experimented in the Soviet Union is situated.

In this context, socially useful work will be the backbone that will provide sustainability as an articulating element in the constitution of this revolutionary proposal of Polytechnic Education, which culminates in the educational process articulated with new educational parameters, through technology, at the service of man and life. It is in this understanding that we will discuss, from now on, based on the Socialist Education of Work, what would be a Polytechnic Education in the positive sense defended by Marx.

Taking Marx's thought, the socialist pedagogical thought understands labor as the foundation of all the educational-formative work of the school, as a unique and inseparable whole. Therefore, it is directly linked to pedagogical discussions situated under a Marxian perspective and tied to a revolutionary educational project. However, the pedagogical debates in the context of the Russian Revolution of 1917, although they had as their theoretical orientation the classic texts of Marx and Engels, the influence of Pistrak and Shulgin became a reference for the deepening of its content, method, and the school form of Socialist Education.

To make the realization of Polytechnic Education possible, these Soviet educators in the transition period<sup>2</sup> anchored themselves in the writings of Marx and Engels, they created, from many debates, a curriculum (teaching program) that could concretize the Polytechnic School. For Pistrak (2015), the debate turns at this time to the question not only of the incorporation of work into the school, but mainly to the introduction of work of a polytechnic nature - a higher phase of the relations between teaching and work.

The Polytechnic School proposal initially departed from the foundations of the School of Labor under a more advanced and defined perspective of polytechnic

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<sup>2</sup> The transition period is distinguished by those traces of the old that we still have to overcome on the way towards that future. Those who opposed the emphasis on the particularities of the transition period, of the vestiges of the past, thought from the comparison of our present transitional epoch with the future socialist system. (PISTRAK, 2015, p. 39, emphasis added.)







education, starting from the premise of rethinking teaching in a more articulated way with work for the schooling of future generations.

It is necessary to distinguish between the Single Labor School and the Polytechnic School. The Labor School, for Pistrak (2015), is the workers' school, seen by him as a social subject of the revolution and with the demands of the historical context he experienced in the Soviet Revolution, with the purpose of providing the working class with the necessary conditions for the overcoming of capitalism and its exploitation, in order to form conscious social subjects committed to collectivity and social transformation. The Polytechnic School, on the other hand, follows this same educational approach; however, it focuses on the effective participation of students in all branches of production, so that they can know the productive system in its entirety, relating it to the economy and the State policy, in the sense that the productive system should be turned to the good and to the needs of the collectivity, and not simply to meet the interests of capital. For Pistrak (2015, p. 21, emphasis added), it would be through the foundations of the School of Labor that conditions would be provided to implement the Polytechnic School according to Marx and Engels' statements put forth in the First International<sup>3</sup>:

From the provisions of the party program and the statements of Marx and Engels it is therefore possible to derive the following most important characteristics that distinguish the polytechnic school. They are: - first direct participation of children in work; - second, the knowledge in theory and practice of the general scientific principles of all production processes, or as Marx says in other words, "technological teaching, both theoretical and practical"; - third, the union of productive work with physical education and intellectual development, properly organized, or, in Marx's words, "the union of teaching and gymnastics with physical work" and consequently also of physical work with teaching and gymnastics. Here are three distinctive features of the polytechnic school.

The above quote shows us that the School could not be considered Polytechnic if it existed only one of the three main features mentioned above, essential elements for the

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<sup>3</sup> International Workers' Association (AIT), also known as the First International or simply International, was an international organization founded in September 1864. It was the first workers' organization that transcended national boundaries. It had at its head Karl Marx as one of its main leaders and also responsible for writing the documents that had as their agenda demands for the improvement of the working class. Among them was an education designed for the working class within the parameters of polytechnics, with the purpose of leading society towards human emancipation and overcoming the expropriation of the capitalist system.



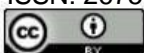


constitution of the Polytechnic School, since the need for mutual connection and articulation of all elements in relation to a single whole should occur in an integrated manner. Therefore, to be considered a Polytechnic School, the elements of polytechnism should be strongly articulated with the school life and the production process, merging into a single whole, also defending the effectiveness of a free, general and compulsory education, aiming to know, in theory and practice, all branches of production. Finally, the Polytechnic School demanded a close connection between studies and socially productive work of great social and educational significance. Thus, the Polytechnic School would be a great lever for the construction of a more just, equitable and emancipated society.

### 2.3 Polytechnic Education: an experience in the Soviet Union

The educators who contributed to socialist education in the USSR (Lunacharskiy, Pokrovskiy, Lepeshinskiy, Menzhinskaya, Pozner, etc.) were part of the State Education Commission that drew up the document Fundamental principles of the single labor school, existing before the revolution. They were later joined by Pistrak, who contributed theoretically and with his practice to the reformulation of this proposal, so that it would be adapted to the period of the revolution. Pistrak was one of the most active educators in the process of elaborating the program of the Polytechnic Schools and in the implementation of the schools in the USSR, which is well expressed in his work Essays on the Polytechnic School (2015).

Pistrak (2015), like Marx, also defends the moment to begin, still in the bosom of capitalism, the realization of the Polytechnic School, and not relegate it to the future. To do so, in the author's view, it would be necessary to overcome the distinction between countryside and city, to overcome the difference between the regions of more developed and less developed culture in the Soviet Union, to immediately overcome the inappropriateness of factories, mills, and industries in general, in order to adapt them to the tasks of educating young people of school age. For the author, it is of utmost importance to think the Polytechnic School in the present, considering the socioeconomic





characteristics of the past, arising from the capitalist system, which still present themselves in the transition period, seeking the necessary alternatives to overcome them and focusing on the future for the effectiveness of polytechnic education as a path to human emancipation.

The curricular organization of the School of Labor, according to Pistrak's thought, considered that reality is directly linked to life and its social, economic, political and cultural development of man, which would overcome the contradictory and massacring capitalist infrastructure. In order to transcend this reality, three qualities had to be developed in the process of omnilateral integral formation: aptitude to work collectively and to find space in a collective work; aptitude to analyze each new problem as an organizer; aptitude to create the effective forms of organization.

To exemplify, Pistrak (2015) presents an outline of how knowledge would be organized for polytechnic education. He suggests that the course be combined with the social sciences and polytechnicism, translating into a complex of social sciences and technology. In summary, Pistrak believed in the possibility of the polytechnic school reaching all regions of the country, respecting the diversity established by the economic system of the time, presenting a proposal for integration among disciplines and with the insertion of two axes: School Polytechnic Work and Polytechnic Education.

The main negative points and challenges identified and faced by Pistrak (2015) in the process of implementation of Polytechnic Schools were the disarticulation of the disciplines of the theoretical column and the polytechnic column, the methodological tradition of teachers and their biased training for a more theoretical-verbal practice as a field of dispute between teachers who still defended teaching in a more theoretical-academicist perspective and others who wanted to make them core disciplines of Polytechnic Education.

This contradiction was due to the old approach of the teachers who were stuck to the tradition of the old School, hence the blunting of the Program in its practical execution, with several problems arising in this process. These problems are pointed out by Pistrak (2015), in large part, by the difficulty of integration between the social science





disciplines with the minimal amount of polytechnic material, which remained isolated and fragmented.

To solve the problems, Pistrak (2015) intended to enable a turnaround by the growth of revolutionary sentiments towards the Program's educational material. This entailed, once again, emphasizing the importance of investing more in the training of teachers so that they could disengage from Old School practices, whose determinations were forged by capitalism. It was necessary for them to better appropriate the practices of the New School aimed at the consolidation of the new society.

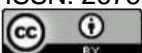
We can see the relevance of this discussion, especially in relation to the need to have a well-structured curriculum with a polytechnic proposal, as described by Pistrak, and the integration of theory and practice mediated by the categories of work and education, seeking the educational principle of work in its positive sense.

From the analysis of the work of Essays on the Polytechnic School (2015), we could understand the vision of Pistrak and his collaborators about the Polytechnic School under discussion. This one addresses the question of school education focused not only on the incorporation of labor in the school, but on the incorporation of work of a polytechnic nature.

These considerations bring us important contributions to rethink the logic of the organization of a syllabus in basic school, so that the link between work and study becomes a methodological key to put into practice the conception of knowledge of historical-dialectical materialism in school, considering school education in Marxian principles under the perspective of omnilateral education.

We can affirm that the Socialist Pedagogy represented in the Polytechnic School brings great contributions with its pedagogical formulations made in the heat of the practice and theoretical debates of the Russian Revolution of 1917. This has certainly helped in the understanding of the realities currently experienced in Brazilian professional education, although it is still offered under the prism of capitalist relations.

Therefore, although Polytechnic Education has not been fully implemented in the Soviet Union, it was the foundation of what would become the Soviet educational system.





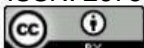
It is worth noting that the Soviet State achieved significant results in the educational field, such as the extinction of illiteracy in a short time and the universalization of education, which contributed to the Soviet Union becoming an economic and military power. Therefore, through it, we can glimpse the possibility of a Polytechnic School to overcome the worker's expropriation in the core of capitalist relations, a thought discussed by Brazilian researchers such as Saviani, Ciavatta, Frigotto, Ramos, among others. This makes us seek the elements of this experience to contribute to the improvement of Brazilian professional education presented today in its different forms, highlighting here the High School Integrated to Professional Education.

### 3 Results and Discussion

#### 3.1 Polytechnic Education: paths and obstacles in Brazilian professional education

Bringing the discussion of polytechnic education, expressed in professional education, to the Brazilian historical context, it is noted that it took place exactly in the 1980s, a scenario of heated debate. At the time, there was a dispute over the restructuring of the Brazilian educational system administered by the authoritarian government, established since the military coup of 1964. In this context, the idea of integration between general education and Professional and Technological Education (EFA) was strengthened. This moment is marked by criticism of the dualism of Brazilian education, which is determined and, at the same time, determinant of a dualism also present in society, and by the struggles for democracy in defense of public schools. It is in this historical context that the Brazilian Federal Constitution of 1988 was drafted and, a few years later, the 1996 Law of Directives and Bases for National Education (LDB) was created, which supports the opportunity for integration.

It was exactly thinking about the extinction of the duality of Brazilian education with the overthrow of the dictatorship that created a propitious environment for the rise of discussions to concretize an educational conception based on polytechnics and founded on Marxian principles. In order to wage the theoretical struggle in defense of omnilateral





polytechnic education, headed by Saviani and other scholars in the area, subsidies were sought for their arguments and for the development of policies that would provide young people with an effective polytechnic education

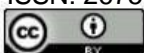
In December 1987, during the Theoretical Shock Seminar, promoted by the then Joaquim Venâncio Health Polytechnic (now Joaquim Venâncio Health Polytechnic School), Dermeval Saviani presented the text entitled *The conception of polytechnics* (SAVIANI, 2003).

Saviani's work is considered a watershed in the Brazilian debate in the area of Work and Education, since it deals with the relationship between high school and technical education. From this point on, many debates are held and several publications are produced with the purpose of seeking new directions for Brazilian professional education, especially for overcoming and confronting the structural duality that historically permeated the conceptions and educational practices in Brazil.

The Decree 2.208/97 that instituted the so-called Reform of Professional Education, still in Fernando Henrique Cardoso's first administration (1995-1998), took another path, approved one year after the LDB of 1996, which delimited the technical level professional education in the country, establishing that it should be offered by separating the general and technical high school education. However, this decree was revoked by Decree 5.154/04 and, later, by Law 11.741/08, in the context of a new policy aimed at both high school and vocational training, enabling more integrated actions between both.

The Educational Development Plan (PDE) mentions the Programa Brasil Profissionalizado (Brazil Professionalized Program) through Decree 6.302/07, which aims to boost the offer of High School Integrated to Professional Education, allowing professional insertion in the world of work, with supervised internship and strengthening of the state education networks in the offer of high school professional education, through a program of technical assistance and financing.

It is through these policies that one can see a concern in providing financial and infrastructure resources for high school education. In this sense, there is an intention to





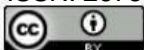
value the elaboration of a new conception of teaching for this educational level, with a curricular organization that prioritizes the articulation among the areas of knowledge and that is attentive to the changes related to society.

We can see the mobilization of the Luís Inácio Lula da Silva government, through the creation of educational policies aimed at integrated high school education, with the purpose of overcoming the duality of Brazilian education. However, in practice, Integrated High School and Vocational Education has faced some challenges, in the view of the authors who debate this issue, as a result of the fact that Brazilian education continues to be driven by liberal and neoliberal ideals, despite some advances.

It is important to note that some theorists turn to the resumption of the struggle for the return of Integrated High School, extinguished under the neoliberal reforms of Fernando Henrique Cardoso's government (1995-1998) and Michel Temer's (2016-2018) with the Provisional Measure n. 746/2016 with its consolidation in law n. 13.415/2017 that began to enter into force in the last year of President Jair Bolsonaro's government (2019-2022) bringing a major setback by presenting a pseudo flexibility of choice of the High School curriculum. However, the real goal of this law was to discontinue the advances obtained with the integration of Integrated High School to Professional Education that ensured all compulsory subjects in the governments of Luís Inácio Lula da Silva and Dilma Rousseff.

Several scholars are interested in the political struggle for a possible advance towards integrated education that can serve as a basis for the rescue of the proposals for Polytechnic and Unitary Education, because the current political situation as of 2023 shows us a more optimistic political scenario with the new mandate of President Luiz Inácio Lula da Silva in order to rescue the debate of inclusive and social agendas of Brazilian Public Education.

According to Frigotto, Ciavatta, and Ramos (2005, p. 1089), the inauguration of President Luiz Inácio Lula da Silva made possible the emergence of political hope for the elaboration of new regulations for education that were more coherent with "[...] the utopia of transformation of the Brazilian working class reality. It is in this environment that the





return of integrated technical education comes into play, as a symbolic element of a struggle for the emancipation of the working class.

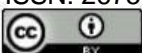
The conceptual and theoretical systematization found in the works of authors like Saviani, Frigotto, Machado, Kuenzer, Ciavatta, among others, contributed to the dissemination of the concept of polytechnics as an alternative to overcome the polyvalent education. The term "polytechnic" is also contemplated in the National Curriculum Guidelines for Vocational and Technical Education at the Secondary Level (2013) when they say that the guidelines should be centered:

[...] exactly in this commitment to offer a broader and more polytechnic Professional Education. Social changes and the scientific and technological revolution, as well as the work reorganization process demand a complete review of the curricula, both in Basic Education as a whole, and particularly in Professional Education, since workers are required, in ever-increasing doses, to have a greater capacity for reasoning, intellectual autonomy, critical thinking, their own initiative and entrepreneurial spirit, as well as the ability to visualize and solve problems. What is necessary, in parallel, closely following what has already been historically constituted as a process of struggle of workers, is to reverse such demands of the labor market with better pay, which are sufficient to ensure decent living conditions, while maintaining the rights already won. (BRASIL, 2013, p. 209).

From the quote above, it is not clear what is the real purpose of the education offered in the ways mentioned by these Guidelines: if it is prioritizing the polytechnic education in its positive aspect and/or negative aspect, which reminds us of the dual aspect of polytechnics mentioned earlier in this text and that also refers to the duality of Brazilian education. In this sense, we refer to the following authors' considerations.

Ciavatta discussing about the duality of Brazilian education, inquires (2014, p. 202): "what do we fight for in the field of labor and education"? Specifically, it seeks to contribute to a future in which overcoming the duality of social classes brings a dignified standard of living and knowledge not only for the elites, but also for the workers, the true producers of social wealth.

According to Kuenzer (2005), true polytechnics is the intellectual mastery of technique and the overcoming of fragmented knowledge by critical, creative and ethical thinking, integrated with other variations of knowledge.







For Machado (1989), these different conceptions of integration or proposals of "school unification", which emerge from the antagonistic interests between capital and labor, point to the existence of two different meanings of integration: one inspired by the liberal/bourgeois ideology and another of socialist/proletarian inspiration; both, throughout history, seek the construction and consolidation of the hegemony of their respective classes.

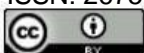
The conception of integrated education presented by these authors establishes a direct connection of the principle of integration with the conception of polytechnic and unitary school with the purpose of opposing the fragmentary educational model of the bourgeois school in the bosom of the contradictions of the capitalist system, envisioning, through integration, a possible transition aiming at the transformation of integrated high school into a place of articulation to overcome the duality of the educational system and effect a counter-hegemony in the Brazilian educational system this is a way to overcome the duality of the educational system and effect a counter-hegemony in the Brazilian educational system.

## 4 Final considerations

Taking the experience of Polytechnic Education developed in the Soviet Union, we can see that it allows us to mention the need for theoretical and practical renewal that helps us to think about Secondary Education Integrated to Brazilian Vocational Education.

With access to the works of Marx and the socialist educators discussed here, in which education was the target of discussions, we can see that important questions are raised about education from the perspective of polytechnics, seeking an omnilateral formation for work and for individual and social life. This discussion is present today among Brazilian educators who defend proposals for professional education.

Therefore, the formation for work based on polytechnics has to consider the conception of human formation, based on the integration of all dimensions of life in the



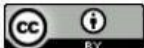


formative process: work, science and culture. Integration, in this sense, enables the omnilateral formation of the subjects, since it implies the integration of the fundamental dimensions of life that structure social practice.

However, under the liberal and neoliberal logic of education, what has been pulverized is polyvalence, that is, the subject must be able to apply new technologies to meet the quality of production and perform different tasks, but never to meet an omnilateral formation. We have here, quite expressively, polytechnics in their negative sense. Therefore, a diversified knowledge is required from the worker, justifying the relevance of polyvalence at work. In short, the subject needs to master the technologies so that he can assume different functions, without having the perception that he is being exploited, prioritizing an education only to meet the interests of capital. This polyvalent training expresses the unilateral character of the worker's education, as opposed to omnilateral training, which would enable an integrated training of the fundamental dimensions of life. In this aspect, the aim would be the formation of the new man, committed to the collective and feeling that he belongs to the collective. The role of the school would be to perform pedagogical work capable of teaching the importance of this collective.

From our analyses we bumped into the same problem that socialist educators faced, that is, the obstacles encountered to the concretization of the polytechnic school, among them, the most challenging, the lack of teacher training to work in polytechnic education. We also face this problem in Brazilian education. It is important to emphasize that teacher education in Brazil is ideologically based on the precepts of the capitalist system, focused on the labor market and on polyvalence. We start from the assumption that in order to make high school integrated to the principles of omnilateral formation, teachers would have to be formed in an omnilateral conception, hence the relevance of the educational institutions to contribute to the realization of this political project in defense of a single education for all.

We understand that it is possible, with the political conjuncture from 2023 on, to resume the curriculum of high school integrated to professional education that can





contribute to the integral formation of the human being in all dimensions: political, economic, technological, social, and cultural. In this way, we will be able to understand the chains of the productive system in capitalism, so that we can act as agents to transform reality and precursors of counter-hegemony, even though we are still operating in the capitalist system.

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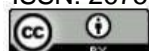
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