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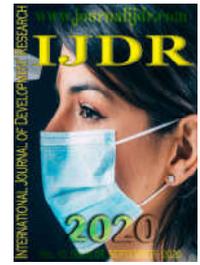
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FROM THE SCHOOL OF APPRENTICES AND CRAFTSMEN TO TECHNOLOGICAL PROFESSIONAL EDUCATION: A SOCIO-HISTORICAL PRODUCTION

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ABSTRACT

This article has its genesis in a research carried out in a master's degree course in Education, and here we present part of the studies that we developed with the aim of understanding the historical-social process of Technological Professional Education. To this end, we start from the understanding that reality is not just historical facts, but also the generalizations that people produce and share socially. About that we ask: what meanings have been produced about Professional and Technological Education? In Vygotsky (2009) we look for the basis to explain what the category of meaning and its heuristic value consists in explaining the real, but we also rely on the ideas developed by Marx (1985) Marx and Engels (2006) Saviani (1986; 2007) Manacorda (2010), Frigotto (2005; 2019) among other authors as well as legislations that discuss Professional and Technological Education in Brazil in order to, through an immersion in the history of this type of teaching, highlight the meanings produced and shared. The reflections lead us to the understanding that the meaning of professional education in Brazil has been strongly mediated by this country's social formation, especially if we consider that the model of slave production that prevailed in Colonial Brazil constituted social relations and subverted the value of practical work in a prejudiced way. This is the ideological basis that has historically constituted the framework of educational legislation and, consequently, is appropriated by society in general.

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INTRODUCTION

In order to discuss professional and technological education in Brazil, consistent with the principles of historical dialectical materialism, we deem necessary to reflect on the historical social character that constitutes it, which implies understanding it as a phenomenon in movement, in a process of change that do not detach from social, economic, historical and cultural relations. The fundamental idea that guides our reflections is that work consists of the ontological character that explains the constitution of the human being, because it is through this that man differentiates from nature, becoming an authentic social and cultural being. Therefore, any analysis that seeks to understand the human being should consider work as an essential and fundamental mediation. Marx and Engels (2006) explain the dialectical relationship between man and nature mediated by work. According to the authors, man, through work, transforms nature and himself, thus surpassing the natural limits to develop in a socio-historical perspective.

This statement is what underlies the idea that man is not only a natural being, but is also an active, real and concrete being and therefore, understanding him from this perspective means that the guarantee of his existence is not given by nature. In effect, Saviani (2007) adds that human existence is not guaranteed by nature, it is not a natural gift, because it was produced by men themselves, and is hence a product of work. As a result, we understand that man is formed and develops historically, and, consequently, work is what materializes his existence. Considering that in Brazilian society the process of production of social life is guided by capitalism and that Brazilian history reveals that the bourgeois ideology implemented here since the beginning of colonization by the Portuguese Crown, demanded labor for the production of wealth, we can then infer that professional education, historically, has met the determinations of the capitalist system, which is the training of workers for the labor market. However, it has also become one of the possibilities of accessing a profession that may provide better living conditions.

This type of education, as a socio-historical production, within the capitalist society constitutes the contradiction between conservation and transformation of social life. In order to understand the historical-social process of professional and technological education, we take into account both historical facts, that is, the objective data of reality, and the meanings that men develop about reality, because we understand that both of them constitute a unit dialectic. This indicates the existence of a dialectical relationship between reality and the way men think about reality. So that we better understand this idea, we rely on Vygotsky (2009), according to which, men become human, that is, they have developed superior psychological functions because the work does not only result in products that aim to guarantee human survival. But it was work that enabled man to develop consciousness. In tandem, its realization requires prior ideation, that is, the realization that work is a teleological activity, which is inherent to the prediction of the final result before its completion. In other words, it requires awareness of the purposes for which the work is to be carried out.

The Marx and Engels's (2006) maxim, it is not the conscience that determines life, but life that determines conscience, summarizes the ideas hitherto presented, but it also directs our attention to the fact that life in Marx's thought refers to reality, social matter. It is that that precedes our ideas, values, ideologies, meanings. Therefore, it precedes and constitutes our conscience. From this, we infer that the reality circumscribed in the social history of professional and technological education constitutes the meanings produced about this type of teaching. Vygotsky (2009), explaining the formation and development of higher psychological functions, reveals that the study of higher forms of psychism involves understanding the relationship between thought and the word; it finds the unity of that relationship in the meaning of the word. To apprehend this relationship, Vygotsky (2009) clarifies that we must consider the meanings and senses in the word, both of social nature, that form a dialectical pair, but distinct. The distinction is that, for the author, meaning is a dynamic formation, "[...] é a soma de todos os fatores psicológicos que ela desperta em nossa consciência" (Vygotsky, 2009, p. 465).¹, they are broad and unstable, and produced in our actively experienced lives; hence because they are fluid, meanings are historical-social constructs, more stable, it is through them that we share the world in which we live, thus, they are the basis of our communication. For that reason, meanings about professional and technological education that we develop and share through language are concepts, generalizations. Meanings are, therefore, a concept, a generalization or even historical social constructions that carry intelligibility about the real world, since the senses go beyond the field of intelligibility and are formed through personal motives, expectations, emotions. Whence, we can ponder that discussing meanings (meanings and senses that are produced in relation to the real) that were formed and developed throughout the social history of professional and technological education has heuristic value because it reveals zones of the real, because meanings express the spiritual reproduction of reality. In this we find the theoretical background necessary to justify the research conducted during the master's degree in education, in which we investigated the meanings developed by teachers who work at the Federal Institute of Piauí about

this teaching modality. What is more, we seek to show results referring to the bibliographical study about the concepts, the generalizations, that is, the meanings historically shared by society about professional education. The objective of this article is, then, to explain the social historical process of professional and technological education, considering the meanings that have been developed and that collaborate for the understanding that man and reality form a dialectical unit. In the next section, we present and reflect on these meanings, considering the change processes noted in the following stages: a) from the School of Apprentices and Craftsmen to Vocational Technical Education; b) from Technical Vocational Education to Professional and Technological Education.

Genesis and development process of Professional and Technological Education in Brazil: The training of workers through professional and technological education in Brazil, since its origins, has been reserved for the less favored classes, consolidating a historical duality that has been present in Brazilian education from its beginning. This educational duality reveals the struggle between classes. In the case of vocational and technological education, it manifests by dividing education between the youth of the ruling class and the youth of the people's class. The children of the dominant class are guaranteed access to propaedeutic training that aims to continue their studies at a higher level. As it happens, the people's class children are offered vocational training in order to guarantee immediate access to the labor market and, therefore, provide survival. This duality in vocational training marks the foundations on which professional and technological education in Brazil appears and develops.

About this aspect of the duality of the Brazilian educational system, we highlight the works of Nagle (1990) and Romanelli (2010); both present clear evidence of interest of the economic sectors in the way Brazilian education is structured and organized, above all, maintaining the dualistic character inherited from Imperial Brazil. The dualistic character of Brazilian education also shows that the relationship between education and work is understood in a naturalistic perspective, according to which, the poor naturally have the need to dedicate themselves to work from an early age, and for that they need to acquire the habit as soon as possible. Elite children, on the other hand, naturally belong to the learned class and can dedicate themselves to study for a longer time. Thus, the argument for the existence of two distinct educational systems is formed. Tracy, mentioned by Frigotto (2002, p. 15), denounces this educational reality:

Os homens de classe operária têm desde cedo necessidade do trabalho de seus filhos. Estas crianças precisam adquirir desde cedo o conhecimento e sobretudo o hábito e a tradição do trabalho penoso a que se destinam. Não podem, portanto, perder tempo nas escolas [...] Os filhos de classe erudita ao contrário, podem dedicar-se a estudar muito tempo; têm muita coisa a aprender para alcançar o que se espera deles no futuro [...] Concluamos, então, que em todo Estado bem administrado e no qual se dá a devida atenção à educação dos cidadãos, deve haver dois sistemas completos de instrução que não têm nada em comum entre si.²

¹[...] it is the sum of all the psychological facts that it awakens in our consciousness (our translation)

²Working class men have been in need of their children's work from an early age. These children need to acquire the knowledge and, above all, the habit and tradition of the drudgery for which they are destined. Therefore, they

In the historical development of Professional and Technological Education in Brazil, several nomenclatures were adopted to designate it: instruction, preparation, qualification, recycling, training of workforce. These are meanings that translate the training of workers as preparation of labor to perform occupations and professions in a wage labor market, focused on the production of goods and services for the maintenance of a determined social and economic structure in the country. But how does this type of teaching arise? Has it always been part of the structure of Brazilian school education? What aspects of social life led Brazilian society to think and systematize an education aimed at preparing workers? What meanings have been produced about professional and technological education? What aspects of social reality have mediated the production of these social meanings? Is the preparation of labor the fundamental aspect that constitutes professional and technological education in the historical moment in which we currently live? In the next subsections we make an effort to clarify these issues.

From the School of Apprentices and Craftsmen to Technical Vocational Education: The training of workers began in the 19th century, when in 1808, Dom João VI created the College of Factories in Brazil, with the aim of promoting the education of artists and apprentices from Portugal, training them for manufacturing and construction activities of new machines, which multiplied, improved and added economic value to the genres and products of agriculture with the State as its maintainer (Azevedo, 2017). In 1816, the School of Fine Arts was founded, with the objective of articulating the teaching of science and drawing, corresponding to a center for the dissemination of new aesthetic and educational ideals, and one of the main executive branches of the nationalist cultural program of the government of the time. Thus, French artists were hired and came to Brazil on a mission to establish the Royal Academy of Fine Arts mirroring the French one - current School of Fine Arts at the Federal University of Rio de Janeiro (UFRJ).

Subsequently, the Imperial Decree from 1854 created special establishments for abandoned minors, the so-called Childhood Asylums for Boys Destitute of Luck, where they learned the first letters and were then sent to public and private workshops, under contracts supervised by the Orphans Court. In 1861, the Commercial Institute was created in Rio de Janeiro, with the purpose of training personnel to fill public positions in the state departments. This reality implied the training of specific labor, following the standards of exploration, considering that the training of these people was intended for immediate purposes. The creation of the first institutions demonstrates that professional education, already in the first years of its institutionalization, revealed itself as an education aimed at minors, the poor, the orphans, the abandoned ones, the “destitute of luck”. In other words, it was an education aimed at a mass of people unassisted by the public authorities and, it had assistance and disciplinary purposes, in addition to not being integrated into an educational policy and, ergo, it consisted of unschooled

training. In addition, these young people, “destitute of luck”, were seen as a social pathology that needed to be cured and, in this logic, work was the means of healing, to do that it was necessary to regenerate it through technical training for practical work, thus, making it adjusted to the model of industrialized and capitalist society that was formed in that context. (Wiedemann; Costa Neto, 2016). The professional training model then developed capable workforce for tasks and trades considered to be of lower value, following the logic of exploitation, since workers were considered as one of the other instruments or a piece of gear of the production of goods and services, to be enjoyed by the owners of the means of production. We emphasize, therefore, that during this initial period of constitution of the first institutions that aimed at professional education, the predominant meaning was of a professional formation of a regenerating and hygienist character of the poor young people. As explained by Wiedemann and Costa Neto (2016), this meaning persisted throughout the First Republic. Nagle (2009), analyzing education in Republican Brazil highlights that at the end of the First Republic, the understanding that the education of the poor still aimed to regenerate young people persisted, and underscores two documents that emphasize the meaning of professional education in that context. These documents are the Decrees no 17.508 / 1926 and no 17.493-A / 1927. The first one deals with João Luís Alves School and determines that its objective is to receive, in order to regenerate, by work, education and instruction, male minors, over fourteen and under eighteen years of age, who are judged by the judge of minors, and for these warrants interned (section 20).

The second document deals with the Assistance and Protection of Minors Law, which admits that professional education will take place according to the age, strength and capacity of minors, as well as the conditions of the establishment, taking into account medical information, as indicated by Nagle (2009, p. 189) when bringing the text the document: “[...] *Na escola da profissão a adotar o diretor atenderá à informação do médico, procedência urbana ou rural do menor, sua inclinação à aprendizagem adquirida anteriormente ao internamento e provável destino (section. 211).*”³In the document, a new element begins to become evident that until then was not an object of discussion in society, either in Colonial, Imperial or Republican Brazil, that is, the idea that poor children and young people have rights, which is, the aforementioned decree prohibited work for children under 14. In 1909, through the Decree no. 7,566, nineteen Schools of Apprentices and Craftsmen were created in different federative units, under the jurisdiction of the Ministry of Agriculture, Industry and Commerce, for professional, primary, free and compulsory education (Ribeiro, 2003; Brasil, 2009).

The Schools of Apprentices and Craftsmen defended the action of the State in the imposition of compulsory professional education, which, according to the convictions of its supporters, would have a moralizing effect on the needy population and would form the necessary workforce for Brazilian industry, even in the most distant regions of the country. (Romanelli, 2020; Santos, 2000).

cannot waste time in schools ... The children of the learned class, on the contrary, can dedicate themselves to study a lot of time; have a lot to learn in order to achieve what is expected of them in the future [...] Let us conclude, then, that in every well-managed state and in which due attention is paid to the education of citizens, there must be two complete systems of instruction that they have nothing in common with each other (our translation).

³[...] At the school of the profession to be adopted, the director will take care of the doctor's information, the child's urban or rural origin, his inclination to learning acquired prior to hospitalization and probable destination (our translation).

The 10th and 20th decades of the 20th century are marked by important events that shake the whole of society. It is in those decades that the 1st World War (1914-1918) takes place, in addition to the world crisis caused by the fall of the New York Stock Market later (1929). These two events significantly affect the Brazilian production system, especially the production of coffee, which was the main export product in the country and the main importer was the United States of America. At that time, education, which was not a priority, lacked educational policies, especially professional education, as it did not have its own guidelines. It is from that decade that a turn in professional education comes about, marked by the consequences of the Industrial Revolution, as it changed the production process, which was no longer artisanal, but mechanized. The changes brought about by this revolution had an impact on professional education, because for the new reality that was being formed, it was necessary to disseminate the techniques that were carried out in industrial work. In this context, nineteen Schools of Apprentices and Craftsmen were created in Brazil through the decree no. 7,566 23/09/1909. On the other hand, the school organization inherited the duality of Imperial Brazil. Such duality of the Brazilian educational system was also analyzed by Romanelli (2010), as already mentioned, and by Myriam (1995). According to latter author, there was an evident contempt of the elites for learning the arts and crafts because they consisted of manual work. In the author's words:

O desprezo completo que a elite do país nutria pelo trabalho, sobretudo manual – o que estava bem de acordo com a estrutura social e econômica vigente – explica, em parte, o abandono do ensino primário e o total desinteresse pelo ensino profissional. A repulsa pelas atividades manuais levava essa elite a considerar vis as profissões ligadas às artes e aos ofícios (Myriam, 1995, p. 369).⁴

Anísio Teixeira, on the other hand, denounced the contempt for education that was destined to the people in that historical period, above all, because until then, Brazilian society was constituted, fundamentally, of elite and illiterate mass, among which an emerging middle class was compressed, without greater prestige or social value. Education followed this uneven structure, which was the object of criticism by Teixeira (1963, p. 09) as noted in his words:

Para a elite, um sistema de escolas superiores, predominantemente públicas, para a formação dos quadros de governo e das profissões liberais, acompanhado de escolas secundárias, preparatórias àquele ensino superior, de caráter predominantemente privado; para a nascente classe média, ainda desprovida de qualquer validade política, um sistema de escolas primárias e escolas normais e vocacionais. As massas iletradas constituíam a grande força de trabalho da produção agrícola que assentava a nação em sua ainda vigorosa estrutura dual de elite e massa.⁵

⁴The complete contempt that the country's elite had for work, especially manual - which was well in accordance with the current social and economic structure - explains, in part, the abandonment of primary education and the total disinterest in professional education. The repulsion for manual activities led this elite to consider the professions linked to the arts and the trades (our translation).

⁵For the elite, a system of higher schools, predominantly public, for the formation of government staff and liberal professions, accompanied by secondary schools, preparatory to that higher education, of a predominantly

In this context, professional education was understood as instruction for the so-called illiterate classes, and its main characteristic was to train workers to perform trades and tasks. From that period, a new phase begins, which outlines the possibility of regulating professional education systems in Brazil, surpassing the model established by the school of crafts. This new period begins with the Manifesto of Pioneers of New Education in defense of the public school. This manifesto had Anísio Teixeira as one of the leaders. The new quality of the discussion presented in the manifesto, according to Teixeira (1963), was because it expressed the struggle for the expansion of a public school of quality, secular, compulsory and free. In other words, the manifesto claimed to take the perspective of a democratic school that could provide opportunities for everyone, both with regards to a general culture and the possibility of specializations. However, the proposal organized education into two broad categories, namely: humanities and sciences activities (of a more intellectual nature); and technical courses (mechanical and manual). Thus, in 1930, we have the creation of the Ministry of Education and Public Health and, in 1931, the creation of the National Council of Education. Thus, an educational reform was carried out. However, the reform still preserves educational duality as a means of conserving the interests of the country's economic elite, as indicated by Silva's words (2017, p. 293),

[...] temos um país composto basicamente de agricultores, não alfabetizados e impossibilitados para trabalhar na nascente indústria brasileira. O Governo via a necessidade de industrializar o Brasil com urgência, algo que tínhamos um *déficit* de quase 300 anos. Portanto, Getúlio Vargas cria o Ministério da Educação e Saúde Pública que cumprirá exatamente esse propósito: criar autômatos para serem explorados pela nascente indústria brasileira.⁶

On January 13, 1937, Law no. 378 was passed, which transformed the Schools of Apprentices and Craftsmen into Professional Lyceums for professional education. According to Vieira and Souza Jr. (2016), these also showed the compensatory and assistentia list bias of professional education for the poor. In addition, this training for workers was impregnated with the meaning of the moral purpose attributed to work, that is, through work poverty takes on dignity. The end of the 1930s and the first half of the 1940s were marked by the Second World War (1939-1945), which, like the first one, caused reflexes around the world and, especially, here in Brazil. Wiedemann and Costa Neto (2016) explain that with the end of this war two needs are formed: that of training workforce for industry work, since the war had restricted the export of workers; and the need for industrial and technological development because there was also a restriction on the import of products and technologies and, in order to meet these new demands, there is a need to create and organize

private character; for the emerging middle class, still without any political validity, a system of primary schools and normal and vocational schools. The uneducated masses constituted the great workforce of agricultural production that based the nation on its still vigorous dual structure of elite and mass (our translation).

⁶[...] we have a country basically composed of farmers, illiterate and unable to work in the emerging Brazilian industry. The Government saw the need to urgently industrialize Brazil, something that we had a deficit of almost 300 years. Therefore, Getúlio Vargas creates the Ministry of Education and Public Health that will fulfill exactly that purpose: to create automata to be explored by the nascent Brazilian industry (our translation).

professional training centers for industrial and technological development. It is in this context that the “S-System” appears. In fact, a technical training system parallel to the official system, Santos (2017, p. 179) states, the S-System is configured as a para-state professional education network, organized and managed by union bodies (confederations and federations) of business representation. E.g. SENAI, SENAR, SENAC, SESI, SESC, SEBRAE, SENAT. The S-System is financed by the private sector of the economy and aims to serve its own interests and the reproduction of labor for commerce and industry, and also for the agricultural sector, through specific training. The creation of the S-System shows that the education of the people was still not a priority for the government that lacked public policies and financing, especially concerning professional education, which still did not have its own guidelines. Moreover, the educational system was constantly subject to the determinations of the economic system, which deepened the contradictions of Brazilian society, as explained by Romanelli (2010, p. 65),

[...] o sistema escolar entrou não só a sofrer as influências do contexto sócio econômico como [...] passou a refletir o aprofundamento das contradições entre os aspectos modernos da elite dominante [...] se de um lado o capitalismo industrial avançou a passos firmes, do outro, o latifúndio persistiu.⁷

In 1942, an important educational reform systematized by Gustavo Capanema occurs. This reform, named after its creator, generated the medium courses of the 2nd Cycle, Scientific and Classical, lasting three years and the professional technical education, which consisted of the final part of the secondary. It comprises the following courses: Normal, Industrial Technical, Commercial Technical and Agrotechnical. These courses had the same level and duration as the 2nd Cycle (Scientific and Classic), but without qualifying for entry into Higher Education. It is due to such reform that the Schools of Apprentices and Craftsmen are now called Industrial and Technical Schools, and in 1959 as municipalities they are then called Federal Technical Schools, as indicated by Garcia, Dorsa and Oliveira (2018). The Capanema Reform continued effective until the government of Juscelino Kubitschek (1956-1961).

Amidst contradictions, we witnessed a country increasingly involved in industrial automation that imposed new forms of production. In this sense, Manacorda (2010, p. 31) signals that there was the need for specializations and, at the same time, a new need for coordination of knowledge, for a new articulation between knowing and doing, which transforms the man's life and demands new men. In the face of such reality, the school, contradictorily, offers the possibilities of, even being conservative of the social structure, producing changes. It is the development of science and technology, even in a slow way, that changes the national scenario, interconnected with production and, as the author says, incorporate new content in media to the old structures, to the old relationships. (p. 31). During the period from the creation of the College of Factories (1808) until the first decades of the twentieth century, professional education was understood maintaining, basically,

the same assistance trait of the previous period, that is, of a teaching aimed at the less socially favored, for orphans and destitute people. The novelty was the beginning of a public effort to organize vocational training, moving from the main concern with the care of abandoned children to another, considered equally relevant: that of preparing workers for professional practice (Brasil, 1999). During this long historical period, we note that the development of professional education has evidenced changes in the domestic and external scenario in the country, as well as new challenges have emerged related to the change of the economic model that exports raw materials and agrarian base to the paradigm of substitution imports, with a strong tendency to urbanization. We synthesized this first stage of the development of professional education in Brazil, emphasizing the meanings present either in the policies developed for this type of teaching, or in the way in which it became effective. Thus, professional education begins in the country bearing the stigma that manual work is inferior, because historically, it was carried out by slaves. This stigma constitutes the contempt that the Brazilian elite develops for professional education for the poorest and, therefore, characterizes the meanings that education for the poor must, of course, be an education geared to manual work.

In addition to the stigma of slave labor, the industrial and capitalist system that was beginning to develop in the country adopts and legitimizes Christian values, as well as the hygienist medical discourse present at the end of Imperial Brazil and the beginning of Republican Brazil. Thus, we mean, work, in this context, as a productive activity that must be honest and that aims to fight laziness, leisure, loitering and, above all, to regenerate the poor of all these adjectives that, from the perspective of the Brazilian elites, naturally constitute the spirit of the poor, the “destitute of luck”. Hence, from the school of trades to technical vocational education we have the genesis and development of the meaning that professional education is training aimed at poor young people with the aim of regenerating them and adapting them to industrial and capitalist society.

From Technical Vocational Education to Professional and Technological Education: In the 1960s, we passed the first National Education Guidelines and Bases Law (LDB in Portuguese; Law 4,024/ 1961), still under the government of Juscelino Kubitschek, which recognizes the integration of professional education at other levels and teaching modality, in addition to having equivalence for further study purposes. Its approval reflected the new expectations for the whole Brazilian society, especially for educators and students, as it was considered the legal framework of education in Brazil. The Law established in its guidelines three degrees of education: the primary, the medium and the secondary. Thus, the Brazilian educational system was formulated with the following terminology: first grade, consisting of nursery schools, kindergartens and four-year primary education; medium grade, comprising two cycles: the junior high school, which covered four years, and the technical-industrial, agricultural and commercial courses, followed by the three-year high school cycle, with the classic and scientific modalities, which complemented the senior high school. Regarding this Law, Santos Alves (2010) emphasizes that its approval is a qualitative leap in professional education and thus marks out a new stage in the development of professional education, as well as the meanings that are developed and appropriated by society, since it demonstrated that there was a

⁷[...] the school system entered not only to suffer the influences of the socio-economic context, but [...] started to reflect the deepening of the contradictions between the modern aspects of the dominant elite [...] if, on the one hand, capitalism The industrial sector advanced steadily, on the other, the latifúndio persisted.

need for professionalization when equating professional education with academic education, in terms of enabling the continuation of studies at higher levels. However, it was not able to produce changes in cultural determinations that favored propaedeutic teaching for the dominant classes. The assistentialist character and the preparation of labor to serve the ruling class persisted. The duality in public education was accentuated, since the government had broad endorsement by the urban middle class, and immediately adopted measures to favor its supporting base, with the increase of vacancies in higher education courses. About that, Martins (2017, p.5), clarifies that:

[...] Em 1960, existiam 226.218 universitários (dos quais 93.202 eram do setor privado) e 28.728 excedentes (aprovados no vestibular para universidades públicas, mas não admitidos por falta de vagas). Já no ano 1969 os excedentes somavam 161.527. A pressão de demanda levou a uma expansão extraordinária no ensino superior no período 1960-1980, com o número de matrículas saltando de aproximadamente 200.000 para 1,4 milhão, $\frac{3}{4}$ partes do acréscimo atendidas pela iniciativa privada. Em finais da década de 1970 o setor privado já respondia por 62,3% das matrículas, e em 1994 por 69%. Deve-se salientar que a opção do setor público por universidades que aliassem o ensino à pesquisa elevou os custos do ensino público, restringindo sua capacidade de expansão, e abriu o espaço para o setor privado atender a demanda não absorvida pelo Estado.⁸

These numbers point to a very expressive growth in higher education to meet the training needs of the children of the dominant class. On the other hand, the general people would have to resort to vocational education, for in addition to the vacancies in public universities being unable to meet the demand, the selection process was restrictive, since the conditions of competition and approval in the entrance exam were not the same for everyone. From the period following the approval of the first LDB (Law 4.024 / 1961), to the beginning of the Military Dictatorship (1964-1985), professional education begins to develop in the perspective of vocational education in the face of the growing need for specialized labor. However, there were still no specific schools and no teacher training policies to operate in this type of education. (Ribeiro, 2003; Romanelli, 2010). The period of the Military Dictatorship in Brazil, consubstantiated by industrial automation after the Second World War, imposed a new form of production, based on the doctrine of effectiveness and efficiency, with the objective of generating more profitability. This new capitalist order required a new workforce, a new man to operate the machines and strengthen capital. To this end, Brazil and the United States of America signed a series of agreements between MEC -USAID (Ministry of Education and Culture - United States Agency for International

Development). These agreements aimed to establish technical assistance and financial cooperation for Brazilian education and, thus, they had an impact on professional education, which started to receive financial assistance and technical guidance. The purpose was to shape professional education following the determinations imposed by the imperialist country that "invested" in Brazil. With the growing demand for higher education, due to the increase of vacancies of years earlier as a way to favor the government's supporting base, the State now seeks to solve the problem through the educational reform, approved by Law 5.692 / 1971 that instituted the mandatory nature of professionalization in high school. With the reform, the government aimed to stop the growing demand for higher education through school. As it turns out, however, the problem of educational duality in Brazil has its genesis in the social structure and, thus, the contradictions of a capitalist society are not resolved within the scope of the law. (Santos Alves, 2010). About this reform, Giorgi and Almeida (2014, p. 267) explain that:

[...] a reforma do ensino de 1º e 2º graus, instituída pela Lei nº 5.692/1971 teve o objetivo de situar o problema educacional na estrutura geral de dominação, reorientada desde 1964, e de dar um sentido objetivo e prático a essa estrutura. É evidente que, mais do que pensar a realidade da educação brasileira. Os acordos internacionais tinham como objetivo treinar e doutrinar órgãos e pessoas, para que esses passassem a difundir as estratégias que fossem de interesse da Agency for International Development⁹. Nesse sentido era imprescindível a reforma do ensino médio e superior, no intuito de formar quadros com esse perfil. E dentro desse conjunto de circunstâncias o Estado opta pela coerção como modo de tornar hegemônica sua concepção de mundo.¹⁰

The education reform proposed by Law 5,692/1971 had the objective of imposing a model of high school education with compulsory vocational training due to the demand for high school technicians in the midst of the creation of the I National Economic Development Plan (PNDE in Portuguese), in 1971, which while proposing investments in transportation, petrochemicals and communications, would require related technical courses. (Bonaparte, 2011; Santos 2012). Nonetheless, the aforementioned legislation makes no mention of technical vocational education as a teaching modality, just an addition of specific hours in high school for professional qualifications in partnership with private companies, so the State moved away from its responsibility in relation to professional education, in that it not even mentioned in the referred legislation a proposal for training teachers to work in professional technical education.

⁹United States Agency for International Development, better known by its English acronym USAID, this agreement brought North American consultants that among other objectives sought to promote the training of young people for the labor market (Caires, 2016).

¹⁰[...] the reform of primary and secondary education, instituted by Law no. 5,692/1971, had the objective of placing the educational problem in the general structure of domination, reoriented since 1964, and of giving an objective and practical sense to this structure. It is evident that, more than thinking about the reality of Brazilian education, the international agreements had the objective of training and indoctrinating bodies and people, so that they started to disseminate strategies that were of interest to the Agency for International Development. In this sense, the reform of secondary and higher education was essential, in order to train staff with this profile. Within this set of circumstances, the State opts for coercion as a way of making its conception of the world hegemonic (our translation).

⁸[...] In 1960, there were 226,218 university students (of which 93,202 were from the private sector) and 28,728 surpluses (approved in the entrance exam for public universities, but not admitted due to lack of openings). In 1969, surpluses totaled 161,527. Demand pressure led to an extraordinary expansion in higher education in the 1960-1980 period, with the number of enrollments jumping from approximately 200,000 to 1.4 million, $\frac{3}{4}$ parts of the increase met by the private sector. By the end of the 1970s, the private sector already accounted for 62.3% of enrollments, and in 1994 for 69%. It should be noted that the option of the public sector for universities that combine teaching with research increased the costs of public education, restricting its capacity for expansion, and left room for the private sector to meet the demand unattended by the State (our translation).

The vocational technical education proposed by Law 5,692/1971 was organized in order to provide graduates with a technical professional qualification (industry, commerce and agriculture). This need was derived from the material conditions imposed on the working class, as this public did not have access to higher education at public universities, and the selection process for entering this level of education was restrictive and did not consider the conditions and particularities of this contingent of the population. According to Saviani (1986), the proposal for universal and compulsory professionalization in high school education was not defended by any expressive stream of thought within and outside the Ministry of Education and Culture (MEC). The author points out that no other country in the world used it, nor had it been proposed by international organizations. For the concept of universal and compulsory professionalization to prevail, it was necessary for MEC to resort to authoritarian procedures, including the suppression of a national education conference, the last of the series convened in that period (1966-1971).

In the 1970s and 1980s, schooling was valued in view of the need to reproduce and strengthen capital and develop the country from an economic perspective. The middle class was strongly represented in the university contingent; whose components were precisely those who, increasingly, depended on higher education to rise socially. For workers, however, there remained technical vocational training that generated workforce for the labor market. This historic moment is marked by the potentialization of productive training, raising production, with the workforce, demanded by professional technical education aimed at acquiring mastery of the technique (know-how) to perform repetitive tasks. Frigotto et. al. (2005) assert that this training took place in a perspective that destroyed professional training, unrelated to basic education and centered on the perspective of knowing how to do and learning, training skills and techniques for the capitalist market. In the context of the Military Dictatorship in Brazil and in the decades to follow, a pedagogy concerned with instrumental efficiency was imposed, articulating what Saviani (2008) defines as technicist pedagogy. The purpose of this education, based on the factory model, was for educational training to be objective and operational. On this topic, Saviani states (2008, p. 10):

Buscou-se planejar a educação de modo a dotá-la de uma organização racional capaz de minimizar as interferências subjetivas que pudessem pôr em risco sua eficiência. [...] é necessário mecanizar o processo. Daí a proliferação de propostas pedagógicas tais como o enfoque sistêmico, o microensino, a instrução e programada, as máquinas de ensinar [...].¹¹

Thus, professional technical education enters a process of rational organization, teachers and students adopted a secondary role, different from what had occurred in traditional education, in which the teacher was the center in the teaching process and what had occurred in new pedagogy, where the student was the center and the intersubjective relationship

¹¹We sought to plan education in order to provide it with a rational organization capable of minimizing subjective interferences that could jeopardize its efficiency. [...] it is necessary to mechanize the process. Hence the proliferation of pedagogical proposals such as the systemic approach, the micro teaching, the instruction and programmed, the teaching machines [...] (our translation).

between him and the teacher was defended. We emphasize that the changes that occurred in this historic period were that technical professional training is constituted as a teaching modality embodied in the LDB and in the reform of the teaching of medium and high schools. However, the educational duality was not overcome. And, social and educational changes also implied new demands on the worker in achieving results via accelerated productivity and the training proposals through professional technical education were directed to the training of competent workers, with skills that enable greater performance at work, with efficiency and effectiveness to generate greater productivity and profit for the capital. In summary, the perspective of education that is developing in the country shows a new meaning for professional education. Following the determinations of the social structure that increasingly advanced in the development of capitalism, professional education is now understood as a training that aims to overcome incompetence, inefficiency and unproductiveness. This meaning is based on the perspective imported from America, through the agreements signed. The logic that characterizes these agreements was that of efficient individuals, capable of contributing to increasing productivity in society and the focus on training proposals was on learning how to do.

The 1980s are marked by two significant facts that would have implications for professional education. The first fact is that the obligation of high school as a professional technical education is revoked by Law no. 7,044/1982; the second fact is the end of the Military Dictatorship in 1985. With the end of this model of government, discussions started on a new constitution and, therefore, a new law for education. The Magna Carta is promulgated in 1988 and the second LDB is approved in 1996 (Law 9,394/1996). From the 1990s to 2008, there was a significant restructuring in professional education, both as a result of the approval of the current National Education Guidelines and Bases Law (LDB 9,394/1996) and with regards to teacher training policies, the working conditions and the creation of a privileged locus for the offer of this type of education. The approved law adopted the nomenclature of professional education in its Section 36, in which it specifies that high school, geared to the general education of the student, may prepare him/her for the exercise of technical professions. Thus, it is expressed in the scope of the Law:

A educação profissional técnica de nível médio será desenvolvida nas seguintes formas:

- I - articulada com o ensino médio;
 - II - subsequente, em cursos destinados a quem já tenha concluído o ensino médio.
- [...]

Art. 36-C. A educação profissional técnica de nível médio articulada, prevista no inciso I do caput do art. 36-B desta Lei, será desenvolvida de forma:

- I - integrada, oferecida somente a quem já tenha concluído o ensino fundamental, sendo o curso planejado de modo a conduzir o aluno à habilitação profissional técnica de nível médio, na mesma instituição de ensino.

- II - concomitante, oferecida a quem ingresse no ensino médio ou já o esteja cursando-o. (Art. 36)¹²

¹²Technical vocational secondary education will be developed in the following ways:

The approved Law brought proposals for important changes for professional education, the main one being the possibility of realizing the integration of professional education with other teaching modalities in order to overcome the historical duality between propaedeutic education and professional education. In time, we highlight that the model of professional education advocated by the referred Law originates from a Law prior to the current LDB, the Law of no 8,948/1994 that transformed Federal Technical Schools that offered only professional technical education, in Federal Centers of Education (CEFETs), specialized in offering technical and technological courses. This new institution made it possible to innovate in the training of young people with the verticalization of teaching: from the second-degree technician, the technologist and the so-called “specialization” graduate courses (PDI/IFPI, 2014-2019).

With CEFETs there is a growth in technological education activities, diversifying it and rendering it more complex in view of the curricular organization as well as the expansion of enrollments at different levels of education. This growth required the institution to formulate teacher development policies through continuous training, development of research programs, participatory management and conduction of administrative processes in line with this new reality. About that, Rego (2009) asserts concerning the fundamental importance of keeping in mind the macro context of technological education, in its conceptual and epistemological aspects, in conditions to impress the formative spirit that will permeate actions and reflections on teaching practices (Rego, 2009).

In 2004, an important legal framework for professional education was the promulgation of the Decree no. 5,154 / 2004 that regulated section 36 of the current LDB, which deals with the integration of professional education with other teaching modalities. That proposal aimed to overcome the historical duality of education in Brazil, but in the legislation, the bourgeois and idealistic ideas still persist, as they are not supported by a philosophy that pays attention to a proposal for human development with a critical thinking, overcoming the division of classes, but to the interests of the ruling class. In 2008, the Federal Institutes of Education, Science and Technology were instituted by Federal Law 11,892/12/2008, which was sanctioned in the face of a new political, economic and social situation. Now, CEFETs become Federal Institutes of Education. The aforementioned Law also causes changes in the nomenclature that until then was used due to the LDB. That is, professional education becomes professional and technological education. A new project that aims to meet the needs of the population, such as better structured courses, the possibility of continuing education for teachers, at the *latosensu* and *strictosensu* graduate level, better working

conditions, more investments by the Federal Government. Thus, the Law offers possibilities to transform and equate Federal Institutes with Federal Universities, consequently, developing a new Institutional identity (Brasil, 2008, p. 2012). Both in Law 9,394/1996 (LDB) and Law 11,892/2008, there are indications of a training proposal in the full perspective, through professional and technological education. However, Ramos (2011), Moura (2007), Ciavata and Ramos (2011) criticize the propositions for comprehensive training in accordance with Law 9,394/1996 and Decree no. 5,154/2004, asserting that professional and technological education, even expressing the perspective of comprehensive training, remains focused on the permanent development of aptitudes for productive life.

Manacorda (2010) defends an integral/*omnilateral* formation, as a human development factor in all dimensions and potentialities, the total man. However, professional and technological education maintains the strengthening of the capitalist production system, serving the interests of the bourgeoisie, since the concept of integration is still limited and does not include human formation in its entirety. Among the purposes of the Federal Institutes of Education, the verticalization of teaching is expanded, and in this way, these institutions offer basic, technical, technological education for undergraduate and postgraduate courses, which translates into a challenge for the management and operation of courses at different levels of education. According to Law 11.892 / 2008, its section 6 and its items:

I - ofertar educação profissional e tecnológica, em todos os seus níveis e modalidades, formando e qualificando cidadãos com vistas na atuação profissional nos diversos setores da economia, com ênfase no desenvolvimento socioeconômico local, regional e nacional; II- desenvolver a educação profissional e tecnológica como processo educativo e investigativo de geração e adaptação de soluções técnicas e tecnológicas às demandas sociais e peculiaridades regionais; [...] IV - orientar sua oferta formativa em benefício da consolidação e fortalecimento dos arranjos produtivos, sociais e culturais locais, identificados com base no mapeamento das potencialidades de desenvolvimento socioeconômico e cultural no âmbito de atuação do Instituto Federal; [...] ¹³

The changes that took place in professional education in the face of the transformation from CEFETs into FIs translate into expectations of achieving integral training, although the guiding idea is focused on socio-economic development, for the production of goods and services, for regional and national economic strengthening. The creation of the FIs and its expansion indicate a new reality of professional education that is concretized in the decentralization of campuses from capitals to other cities in the countryside, which creates

I - articulated with high school;

II - subsequently, in courses for those who have already completed high school.

[...]

Art. 36-C. The articulated high-level technical professional education, provided for in item I of the caput of art. 36-B of this Law, will be developed as follows:

I - integrated, offered only to those who have already completed elementary school, with the course being planned in such a way as to lead the student to technical vocational training at the secondary level, at the same educational institution.

II - concomitant, offered to those who enter high school or are already attending it (Our translation).

¹³I - offer professional and technological education, at all levels and modalities, training and qualifying citizens with a view to professional performance in the various sectors of the economy, with an emphasis on local, regional and national socioeconomic development;

II- develop professional and technological education as an educational and investigative process for generating and adapting technical and technological solutions to social demands and regional peculiarities [...]

IV - guide its training offer to the benefit of the consolidation and strengthening of local productive, social and cultural arrangements, identified based on the mapping of the potential for socioeconomic and cultural development within the scope of the Federal Institute [...] (our translation)

opportunities for many students, favoring the democratization process of access to professional and technological education. In the context of the training process via professional and technological education in Brazil, it is important to highlight the changes that have occurred, especially with the expansion of the Federal Network of Professional and Technological Education (EPT). Currently there are 38 (thirty-eight) Federal Institutes of Education and 644 (six hundred and forty-four) campuses, installed in the country (Brazil, 2018). With the expansion of the Federal Institutes of Education, in addition to structural changes, there were also proposals for changes in the training perspective; internal laws were drawn up to direct actions that guide educational practice in the Federal Institutes, in a perspective concerned with the local productive arrangements, targeting the community with the objective of promoting economic development, but also human development.

However, even considering the advances that professional education has made, especially in the last decades, we still cannot consider that the training and human development that it provokes are in line with a revolutionary professional education. For such, it is necessary to consider, based on Marx (1985) that technological training consists of the absolute unity between theory and practice (*práxis*) that relates theoretical and technical knowledge in the productive system in society, aiming to guarantee the equality of all workers, regardless of the specific occupations that each individual carries out, from the unity between manual training and intellectual training, followed by social praxis, it enables the *omnilateral* training that he idealized (Manacorda, 2010). The concept of *omnilateral* formation is translated into an integral formation of the subject. Manacorda (2010) considers that a complete formation is necessary, a total development, multilateral in all senses, of the faculties and productive forces, of the needs and the capacity of their satisfaction. Understanding a subject as *omnilateral* means providing conditions so that, in view of the atrocities of the capital, it can stand out consciously and autonomously, and with a critical awareness of its reality.

Historically, social antagonisms and contradictions have constituted the bases of the school legacy, having perpetuated, through the ages, the fragmentation of knowledge and displacement of the objectifications of work that fail to guarantee collective survival, transmuting to the interests of dominant groups, crystallizing the place of leisure as a distinct space for the formation of successors of power. This second stage of the development of professional education is characterized, above all, by the fact that this teaching modality becomes part of the educational legislation, considering it integrated to the other levels and teaching modalities. The creation of Federal Institutes represents progress in the sense that it consolidates educational policies in the field of professionalization and assumes professional education as a social right that favors the social inclusion of young workers. We also emphasize that the technical vocational education established by the first LDB reveals the need for professionalization and assimilation to academic education, however, there is still a strong understanding in the country that training for work has a lower value. The second Law passed in 1996 breaks the welfare character hitherto determinant in the training policy of workers and opens up the possibility of putting into practice a model of professional education in which the student is understood as a person of rights who historically has been excluded from social life.

From this, to the determinations imposed by the USA, which can be translated into the meaning of professional education aimed at efficiency and effectiveness of the productive system; it is this meaning that guides the policies in that context and that only show a new leap in quality since the end of the 2000s, with the creation of Federal Institutes and a new identity that seeks to be developed. Federal Institutes have been intervening in the reality of students, just as they have provoked local and regional development and, even while preserving the interests of capital, it manages to be a reference in the training of workers.

Final considerations

From the study that we carried out to explain the meanings that professional education has been developing in the country, we resort to the history of this teaching modality because we understand that this is the science that conceives the evolution of nature, of society, of thought, as a unique process. We have made effort to seek in history the qualitative leaps through which professional education has gone through and which demonstrate the development of the meaning that society has been appropriating about this type of teaching. We have marked out Imperial Brazil as the genesis of the educational duality present in the meaning of professional education and which persisted in Republican Brazil, in the Military Dictatorship and which is still present in Brazilian culture. Throughout these historical periods, we have shown how education for the poorest in society was an object of contempt not only by the government, but by the social elite, since for them, manual labor is linked to slave labor and that gives it inferior, lower social value. Even with the change in the production process, education retains its dualistic character, but, due to the very demand of the productive system, it advances in the sense that professional education needs to become professional. The professionalization of professional education occurs through recognition and legitimation as a teaching modality that must be integrated into the Brazilian educational system and offer possibilities for further studies.

We also highlight that from Imperial Brazil to present day, several institutions were created for professional education. We had the Schools of Apprentices and Craftsmen, Professional Schools, Technical Schools, Federal Education Centers and more recently the Federal Institutes. All of the adopted nomenclatures represent more than a change in the way of naming the institutions responsible for professional education. They represent a teaching proposal and are aggregated with meanings because they are linked to the historical moment in which they are carried out. Finally, the meaning of professional education in Brazil has been strongly mediated by the country's social formation, especially if we consider that the model of slave production that prevailed in Colonial Brazil constituted social relations and biased the value of manual work. This is the ideological basis that has historically constituted the framework of educational legislation and, therefore, is appropriated by society in general. We also emphasize that the Federal Institutes, although representing a quantitative advance, still safeguard the meaning that professional education aims to meet the demands of the labor market and, to that extent, disengages itself from a concept of "*omnilateral*" professional education of the human being historically located. Whence, it is still striking that it is a limited education, in which the objective is still that of

training, aiming to make the citizen productive, submissive to the needs of the labor market and, therefore, adapted to capital.

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