



## Education for life in a technological age: the Journal *Ensino Industrial* in 1962-1964

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**ABSTRACT.** This study aimed to analyze the role of the Journal *Ensino Industrial* as diffuser of the idea of expansion of the industrial education as a condition for economic and social development of Brazil, since editing its first issue in 1962 until March 1964, upon the occurrence of the business-military coup. The publication on focus is a continuation of the *Boletim da CBAI*, which publicized the activities of the Brazilian-American Commission of Industrial Education for the improvement of industrial education in Brazil, according to the ideology of Americanism. Its assumptions were considered the way to overcome the country's delay by proposing the adoption of streamline standards for the training of the workforce for the industry, whose base was the Theory of Human Capital. *Ensino Industrial* served as a diffuser for the dissemination of activities concerning industrial education in Brazil, highlighting the importance of planning and international cooperation in the area. The lack of manpower to the continuity of the process of modernization that led to the creation of the Intensive Preparation for Industrial Labor (PIPMOI), aiming at the rapid training of workers, but it did not materialize in better living conditions for the working class.

**Keywords:** industrial education; developmentalism; international aid; rationalization

### A educação para a vida em uma era tecnológica: a revista *Ensino Industrial* no período 1962-1964

**RESUMO.** Este texto tem por objetivo analisar o papel da revista *Ensino Industrial* como difusora da ideia de expansão do referido ramo de ensino como condição para o desenvolvimento econômico e social do Brasil, desde a edição de seu primeiro número em 1962 até a edição de março de 1964, quando da ocorrência do golpe empresarial-militar. A publicação em tela é uma continuação do *Boletim da CBAI*, que divulgava as atividades da Comissão Brasileiro-Americana de Educação Industrial para o aprimoramento do ensino industrial no Brasil, de acordo com a ideologia do americanismo. Seus pressupostos eram considerados como a via para a superação do atraso do país, ao propor a adoção de padrões racionalizadores para a formação da força de trabalho para a indústria, cuja base era a Teoria do Capital Humano. *Ensino Industrial* servia como veículo de divulgação de atividades a respeito da educação industrial no Brasil, destacando a importância do planejamento e da cooperação internacional na área. A carência de mão de obra para a continuidade do processo modernizador levou à criação do Programa Intensivo de Preparação da Mão de Obra Industrial (PIPMOI), visando à formação rápida de trabalhadores, mas que não se traduziu em melhores condições de vida para os mesmos.

**Palavras-chave:** ensino industrial; desenvolvimentismo; ajuda internacional; racionalização.

### La educación para la vida en una era tecnológica: la revista *Ensino Industrial* en el período 1962-1964

**RESUMEN.** Este texto tiene el objetivo de analizar el rol de la revista *Ensino Industrial* como propagadora de la idea de expansión del referido ramo de enseñanza como condición para el desarrollo económico y social de Brasil, desde la edición de su primer número en 1962 hasta la edición de marzo de 1964, cuando ocurrió el golpe empresarial-militar. La publicación en foco es una continuación del *Boletim da CBAI*, que propagaba las actividades de la Comisión Brasileño-Americana de Educación Industrial para el perfeccionamiento de la enseñanza industrial en Brasil, de acuerdo con la ideología del americanismo. Sus presupuestos eran considerados como la vía para la superación del atraso del país, al proponer la adopción de patrones racionalizadores para la formación de la fuerza de trabajo para la industria, cuya base era la Teoría del Capital Humano. *Ensino Industrial* servía como medio de difusión de actividades con respecto a la

educación industrial en Brasil, señalando la importancia de la planificación y de la cooperación internacional en el área. La carencia de mano de obra para la continuidad del proceso modernizador llevó a la creación del Programa Intensivo de Preparación de la Mano de Obra Industrial (PIPMOI), pretendiendo la formación rápida de trabajadores, aunque no les haya llevado a mejores condiciones de vida.

**Palabras-clave:** enseñanza industrial; desarrollismo; ayuda internacional; racionalización.

## Introduction

This article has the goal of studying a journal published by the Diretoria do Ensino Industrial (DEI)<sup>1</sup> - from the Ministério da Educação e Cultura (MEC)<sup>2</sup>, entitled *Ensino Industrial*<sup>3</sup>, edited between the years 1962 to 1969. This publication corresponds to a period that matches initially to the government of João Goulart (1961-1964), when there are ideas that defend the urgent need for Brazil to advance in its development, in the sense of overcoming structural problems responsible for the country's delay, among which insufficient industrialization, that should be reverted, among other factors, by the diffusion of professional education, specifically in the processes of formal education related to the secondary sector of the economy. After 1964, during the Military Dictatorship (specifically the governments of marshals Castelo Branco and Costa e Silva), the continuity of the publication on screen is verified, practically with the same previous orientation. *Ensino Industrial* is a sequel from the *Boletim da CBAI*<sup>4</sup>, periodical published between 1947 and 1961, which

[...] brought reports of the activities carried out by the Commission, reports on the trips of directors and teachers to the United States, statements by authorities, educational legislation, translation of texts originally published in the United States in the field of industrial education, [...] of North American and Brazilian technicians, members of the CBAI in its varied activities-teacher training, orientation, organization of workshops, teaching methods. (Machado, 2010, p. 278).

The analysis of educational press journals for the development of studies in the field of the history of education is of the greatest importance, because it brings a picture of a certain historical context, not only with regard to ideas, discourses and pedagogical practices, but also by offering a broader spectrum of society itself and its ideological representations.

The educational press, according to Pierre Ognier, is a documentary corpus of vast dimensions because it constitutes a living testimony of the methods and pedagogical conceptions of a time and of a moral,

political and social ideology of a professional group. In this way, it is an excellent observatory, a photograph of the ideology it presides over. (Catani & Bastos, 1997, p. 5)

## Attributes of the journal *Ensino Industrial* and the context of its emergence

The Comissão Brasileiro-Americana de Educação Industrial (CBAI)<sup>5</sup> was created in 1946<sup>6</sup> and extinguished in 1963 as a cooperation program signed between the governments of Brazil and the United States, with the main goal of training teachers to work in industrial education, besides acting in the preparation of didactic material, acquisition and translation of technical books, improvement of the processes and methods of organization and direction of administration and supervision of schools, as well as the selection and professional and educational orientation of students (Fonseca, 1961).

*Ensino Industrial* presents itself as a promoter of the State's performance in the field of industrial education, in the line of exaltation of the ideals of Americanism as a way for Brazil to achieve the status of a developed nation and to overcome its backward country status. This periodical is inserted in the conjuncture of the national-developmentalism (1945-1964), and can also be related to the development projects of the beginning of the Military Regimen<sup>7</sup>. What is calling attention, as will be highlighted below, is that there is clearly a persistence in the emphasis given to the training of mid-level technicians in industrial education as an urgent need for the country's progress, provided it complies with established standards of efficiency, rationalization and discipline in the United States way. To this end, the assistance of cooperation programs with the United States is seen as fundamental, both by the CBAI at first, and United States Agency for International Development (USAID) afterwards. Thus, it is intended to show that the United States influence in Brazilian

<sup>5</sup> Brazilian-American Commission of Industrial Education.

<sup>6</sup> The CBAI emerged in the context of the so-called 'Good Neighbor Policy' undertaken by the US government with Latin American countries during World War II. Such a policy would be the instrument for the project of 'Americanization' for the continent, whose objective would be the adoption of the ideology of Americanism for Latin America.

<sup>7</sup> According to Bresser-Pereira (2012), one can situate the national developmental period between 1930 and 1980. Here, it was preferred to establish two distinct periods, considering the emphasis given by the Military Regimen to the development process as a matter of National Security (Alves, 1984).

<sup>1</sup> Board of Industrial Education.

<sup>2</sup> Ministry of Education and Culture.

<sup>3</sup> Industrial Education.

<sup>4</sup> CBAI's Report.

professional education, especially in industrial education, was determinant for the conformation of this branch of education according to rationalizing models derived from industrial activity considered ideal for progress and development.

So, educational journals allow access to a vast universe that includes the most elementary aspects of daily school life and the major educational projects contained in specific legislation, which includes its objectives not explicitly stated in the letter of the law.

This way, this article aims to identify the discourses conveyed by the journal *Ensino Industrial* as diffusers of a conception of the urgent need of the preparation of technicians to meet the demands of the industry, whose qualification, besides allowing them the guarantee of employment and social ascension, would allow conditions for Brazil to overcome its position as an underdeveloped country. It is worth emphasizing that the recurrent presence of statements that emphasize the importance of United States cooperation in order to achieve these goals in relation to resources, teaching methods, educational and professional orientation and teacher training will also be emphasized. The methodology used to delineate the profile of the journal in question consisted of collecting data from the journal itself regarding titles and themes of the articles, so that at a later stage it would be possible to classify them in certain subjects, with the purpose of verifying the recurrence of themes throughout the publication. As a result, a large number of articles related to the importance of United States aid for the development of industrial education in Brazil, as well as a large number of subjects related to vocational education, news about the achievements of governments and specific legislation can be verified. In the organizational sphere or referring to the bureaucracy of the various institutions of the federal network.

*Ensino Industrial*, as stated above, continues the *Boletim da CBAI*, since its objectives, purposes and public were coincident. Both publications were intended for technicians, teaching administrators and teachers of the federal network and state networks of technical and industrial schools, private technical education institutions and Senai, who received them for free. The *Boletim da CBAI* was edited in Curitiba by the Centro de Pesquisas e Treinamento de Professores<sup>8</sup> of CBAI, hosted in the Escola Técnica Federal do Paraná<sup>9</sup>, until November 1961, when his essay was transferred to Rio de

Janeiro. In November 1962 appear *Ensino Industrial*, as joint publication of the DEI, the MEC and the CBAI, for the dissemination of the work developed in this branch of education, in accordance with the addendum to the Agreement on Special Technical Services, concluded between the Brazilian government and the *Agency for International Development* from the United States (USAID) in the same year, under the Alliance for Progress. On the back cover of the first number, it was defined as “Publication of the Diretoria do Ensino Industrial, MEC and CBAI in accordance with the collaboration established by the Addendum (1962) to the Agreement signed between Brazil and USAID” (Apresentação, 1962). Therefore, it seems reasonable to suppose, although no empirical evidence has been found, that *Ensino Industrial* gives continuation to the *Boletim da CBAI*, and the change in its name may be related to the intentions of the CBAI to complete its activities in Brazil, which had been outlined since 1957 (Amorim, 2004).

The covers of *Ensino Industrial* presented as standard their upper half colored, with logo and title, and their lower half with a photograph allusive to the activities of industrial education in the country and referent description, as can be seen in Figure 1.



Figure 1. *Ensino Industrial*'s 11<sup>th</sup> issue's cover (1965)

<sup>8</sup> Center for Research and Training of Teachers.

<sup>9</sup> Federal Technical School of Paraná.

Its editorial staff was composed of DEI / MEC and CBAI technicians, and in the case of the latter, up to number 5. Its internal organization consisted of editorial, followed by the following sections: 'Theses and Opinions', with articles by Brazilian and foreign experts on professional education; 'Industry and Education', with information on the activities of DEI, training courses for teachers and managers and speeches by authorities; 'Conferences and Meetings', about events related to the theme of the journal; 'Industrial Education in News', on the activities of the different educational institutions; 'Documentation for Teachers and Librarians', with bibliography on industrial education and book review; and 'Legislation and Resolutions'. The journal included "[...] contribution of directors and teachers of the country's industrial schools" (Apresentação, 1962, p. 1).

The periodical did not presented a definite periodicity during its existence<sup>10</sup>; it was published only number 1 in 1962; in 1963 the numbers 2, 3, 4, 5 and 6 were published in the months of January, April, June, October and December, respectively; and, in 1964, the number 7 was published, corresponding to the month of March, with special attention to the planning and programming of the activities related to the Programa Intensivo de Mão de Obra Industrial (PIPMOI<sup>11</sup>), instituted by the Decree No. 53,224 of December 18, 1963<sup>12</sup>, "[...] to meet the needs of the secondary sector, to enable companies to train their own personnel and to promote the expansion of existing industrial school" (Machado, 1989, p. 48). They were a source of dissemination of actions, interviews, activities, technical culture and news about industrial education in Brazil.

The beginning of the *Ensino Industrial* circulation corresponds to what was known in the history of Brazil as the crisis of national-developmentalism. This can be considered as the period extending from the end of the Estado Novo to the 1964 business-military coup, and consisted of a "[...] 'project' of overcoming underdevelopment through integral industrialization through planning and decided state support" (Bielschowsky, 1996, p. 33). The culminating moment of national developmentalism can be identified in the Juscelino Kubitschek government (1956-1961), in which its Plan of Targets pointed to Brazil's entry into a new phase of its industrial economy characterized by concessions favorable to the consumer goods sector durable

through a linkage between the state, multinational corporations and national private companies, and search for financing via international loans. By taking advantage of a favorable external economic situation, "[...] that of the new stage of expansion of the great monopoly capital towards direct industrial investment in underdeveloped countries, shaping the new phase of imperialism [...]" (Maranhão, 1996, p. 264), the JK government sponsors the internationalization of the Brazilian economy through the inflow of direct investments and loans. This expansion reached its limit in the early 1960s, when a crisis of overaccumulation characterized by an inflationary rise, a reduction of economic growth, a state's investment capacity and a private investment of foreign capital, that is, "[...] at the root of the crisis was the exhaustion of the 'import substitution' breath due to the absolute impossibility of a new 'investment package'" (Mendonça, 1986, p. 84-85, griffin of the author). At this juncture, Ianni (1977, p. 192) points to the need for choices for the resumption of development: "[...] favor the expansion of national capitalism or accelerate internationalization as a means of promoting the investments that are indispensable to a new economic expansion."

As can be seen, the development perspective was an essential condition for overcoming Brazil's backwardness and misery, and therefore, both in the view of the economic groups identified with the industrial expansion and the Brazilian governments since the post-war era, international cooperation in order to accelerate the process of national development. With regard to industrial education, which was a branch of elementary education to provide the manufacturing sector with the workforce duly qualified to meet their demands, it was imperative to count on the assistance of nations that reached the level of development.

Technical and financial assistance began in 1946, when the CBAI was created, a cooperation program signed between the governments of Brazil and the United States. training of Brazilian teachers of industrial education, who were trained to work together with their students in the perspective of preparing them for productive activity through the application of productive rationalization methods, and is reflected in the adoption of patterns inspired by Fordism as a model of construction of forms of control and authority over workers not only with regard to labor relations but also with regard to the daily life of workers, their moral behavior and their individual effort of progress. This process of

<sup>10</sup> There is no information on the reasons for the end of circulation of the journal.

<sup>11</sup> Intensive Industrial Labor Program.

<sup>12</sup> The PIPMOI will continue during the Military Regime, with the name of PIPMO.



organization would have repercussions on the whole of social organization, giving rise to a cultural formation characterized by Antonio Gramsci as 'Americanism',

[...] skillfully combining force – the destruction of national-level workers' unionism – with persuasion – high wages, diverse social benefits, highly skilled ideological and political propaganda, thus being able to base the entire life of the country on the production. The hegemony is born from the factory [...] (Gramsci, 2008, p. 41)

According to Antonio Pedro Tota (2000), Americanism was based on the ideals of democracy, progressivism and traditionalism. Of these, progressivism would be the most important component, because it is related to rationalism and to the productive capacity of the human being. The idea is that

[...] the market could offer in abundance several useful and attractive products, creating a new form of pleasure: the pleasure of consuming. Since these products would be available to any person, regardless of their position in class society, life would be much easier, more enjoyable and enriching... The way was the market (Tota, 2000, p. 20).

These would be the parameters by which Brazilian society could be based for its modernization, of which progressivism would be the main factor capable of promoting development. Thanks to him, there would be

[...] eliminated the difficulties of life in the modern world, [...] also removed the sources of social dissatisfaction. Social peace achieved by the generalization of consumption. Some words have acquired a mythical meaning in the ideology of Americanism: 'progress, science, technology, abundance, rationality, efficiency, scientific management, and American standard of living' (Tota, 2000, p. 20, griffin of the author)

Therefore, it is possible to emphasize the dual purpose of the Americanization project: at the same time, it aimed at the integration of Latin America into the United States market, as well as the withdrawal of the subcontinent from socialist and nationalist influences. To do so, it was necessary to combat misery and underdevelopment in the region, with "[...] the adoption of measures that would make the Latin American economy more competitive. The security of the American nation depended on close cooperation – economic and cultural – with all the governments of the Americas" (Tota, 2000, p. 48). It is in this context that the American initiatives for Latin America and Brazil will multiply. These include those related to

education. In this case, we must highlight the concern with the construction of the 'new man' able to lead the country on the path of modernity, to overcome its backwardness. This construction was based on "[...] 'Americanism as an educational process, at the same time as it made education its own.' [...] - Americanism penetrated Brazil and became a culture, shaped forms of thinking, feeling and living; became a parameter of progress, happiness, well-being, democracy, civilization" (Ward, 2000, p. 43, griffin of the author).

This conception was strengthened by the creation of the Alliance for Progress in 1961, a program of United States foreign aid directed to the countries of Latin America, whose objective would be to foster economic development in the region and by extension to improve the social conditions of the Latin American population, as well as laying the foundations for strengthening United States security on the continent in a context of exacerbation of the so-called 'Cold War', especially after the Cuban Revolution.

The Alliance for Progress Treaty maintained existing technical assistance programs and introduced that of financial assistance in the form of loans and grants. The United States committed to contribute approximately US \$ 20 million in public and private capital to external financing within 10 years, and the other countries were responsible for providing domestic financing and promoting required reforms, in accordance with the objectives of the Alliance [...] (Gaio, 2008, p. 77)

With regard to the objectives established in the Charter that formalized the creation of the Alliance, they were aimed at increasing productive capacity in all sectors of the economy and improving living conditions of rural and urban populations, especially in health, education and housing<sup>13</sup>.

This way, the emphasis on the need to expand technical education appears as a corollary so that the objectives defined in the Charter could be achieved. But for this to happen, it was important that the training of technicians for industry be based on rational and efficient methods, which would at the same time make technical school students productive citizens, a well-prepared workforce, that would help the growth of Brazil and still allow the improvement of their living conditions, since they would have guaranteed their social rise due to the demand of such professionals of medium level by the companies<sup>14</sup>.

<sup>13</sup> On the goals contained in the Alliance's charter, see Gaio (2008).

<sup>14</sup> This discourse was already well-known in the CBAI bulletins, as Amorim (2004) observes.

The substratum of such an ideology lies in the Human Capital Theory, a trend of analysis of the education economy that emerged in the late 1950s, which he had in Theodore Schultz, then a professor at the University of Chicago, his main enunciator. This formulation was based on the idea that education enables the worker to improve his productive capacity by allowing him better conditions to negotiate his 'capital', that is, his labor force in the market. In this way, he would benefit both him and the country, which would benefit him for his progress. So,

[...] in the educational and pedagogical realm, human capital theory will be linked to the whole technical perspective that is in full development in the 50's. In this aspect there is a double reinforcement. The view of human capital will reinforce the whole perspective of the need to redeem the educational system from its 'inefficiency' and, in turn, the technicist perspective offers the appropriate methodology or technology to constitute the educational process as an investment - of a new type of capital - 'human capital'. Education, for this view, is reduced to a factor of production (Frigotto, 1984, p. 121).

At the moment when the process of import substitution is completed in the early 1960s, the country comes to an impasse, provoked by the national-development model itself: Brazil's increasingly sharp integration with the international capitalist movement, as an associated and dependent country, as desired by the bourgeoisie and the middle class, or the deepening of the nationalist component of the model<sup>15</sup> with grassroots reforms, as expected by the working classes. *Ensino Industrial*, in turn, points to what would be common to all Brazilians: the improvement of professional education as a necessary condition for development, as can be seen below.

### **Ensino Industrial as a diffusion of the fundamental role of industrial education for development, in the period 1962-1964**

Throughout its trajectory, it is evidenced the fundamental role that the publication on canvas reserved to the industrial education like leverage for the development of Brazil. In the editorial of number 1, the importance of the CBAI's<sup>16</sup> collaboration in the dissemination of information

and knowledge for the progress of this branch of education was emphasized, that is, it reinforced the importance of the United States cooperation for the training of skilled workers for Brazilian industry. The CBAI is presented as an agency of cooperation between the MEC and USAID, and had

[...] by purpose to strengthen friendship and promote greater understanding among the peoples of the United States of Brazil and the United States of America, to promote general well-being, to enable educational activities in the professional education sector of Brazil through cooperation programs, and stimulate the exchange of ideas and pedagogical processes in the field of professional education (CBAI órgão de cooperação, 1962, p. 6).

There is great concern to show the importance of cooperation between the two countries in order to contribute to the importance of the development of vocational education, as well as the dissemination of CBAI's work in the elaboration of the Projeto de Coordenação do Treinamento Intensivo de Pessoal da Indústria (PCTPI)<sup>17</sup>, for the companies of the State of São Paulo, designed “[...] to meet an existing need, resulting from the rapid industrialization of Brazil, [...] where there is more evidence and need for training [...]” (What is the project of the CBAI in São Paulo, 1963, page 17), as well as a project with the same purpose for the State of Guanabara, “[...] in order to alleviate the distressing situation of a shortage of skilled labor” (CBAI-Guanabara, 1963, p. 35).

Another recurring situation in *Ensino Industrial* was the emphasis given to the shortage of skilled labor to sustain the industrialization process. On one hand, the growth of industrial education, whose percentage of enrollment growth exceeded that of secondary education since 1961, on the other, points to the need for an even greater expansion. But for that, bilateral or multilateral co-operation agreements, including with wide dissemination, are needed by the governments of the countries involved, since “[...] directors and teachers should be aware of what the authorities are doing to promote international cooperation in technical and vocational education and to be invited to collaborate effectively for this purpose” (A Unesco e o ensino técnico profissional, 1962, p. 23). The existence of the publication itself was therefore justified.

In the pages of *Ensino Industrial*, the emphasis is on the expansion of this branch of education, both

<sup>15</sup> The nationalist component can be understood by measures such as nationalization of foreign companies and control of the remittance of profits, royalties and dividends, according to Saviani (2013).

<sup>16</sup> It should be noted that CBAI terminated its activities in Brazil as of the issuance of Decree No. 53,041, dated November 28, 1963. Such legislation was drawn up after verification of the participation of Ponto IV (entity that managed Brazil's technical cooperation agreements with the US) in the conspiracy to destabilize the João Goulart government. For more details, see Amorim (2004).

<sup>17</sup> Coordination Project for the Intensive Training of Industry Personnel. This project was based on the TWI (Training Within Industry) method, a training program that emerged in the U.S. and was adopted in the war industry during World War II. It was intended to instruct, in short periods, workers already employed in the manufacturing sector, to acquire methodical and rational attitudes at work.

in its quantitative and qualitative aspects. In relation to the former, the section of the journal called Industrial Education in News emphasized the creation of an increasing number of technical courses in federal technical schools, as well as the expansion of the physical spaces of such institutions and their teaching and functional staff. It also emphasized the increase of schools of the state networks, private schools and the Senai. The results are celebrated by the DEI, which “[...] has encouraged the new orientation, which is a requirement for the development of our industrial park and for the rational use of the assets of the federal network of industrial schools” (Aumento da matrícula..., 1963, p. 29).

As for the factors referred to here as qualitative, training is considered, both student and teacher, necessarily related to the rationalization of productive processes, economic development and the disciplining of the workforce to be trained. What supports this conception lies in the developmentalist discourse of the time:

[...] the low productivity, expressed by low levels of satisfaction of school demand in relation to the total population and by high rates of dropout and repetition, was presented as one of the obstacles to reaching that goal [development]. This is because the inadequate product of the school system was seen as responsible on the one hand for the low qualification of the workforce, and therefore for the inequality of income distribution, and on the other, for the unpreparedness of the masses for the political process (Kuenzer & Machado, 1982, p. 29).

It was therefore necessary to prepare workers for the modern world of industry, both to support the country's economic growth and to enable workers in their functions in production and even in democratic life. To that end, it was necessary to adapt the training to the demands of the secondary sector of the economy, in which should

[...] give schools the inherent capacity for gradual adaptation to ever-changing and increasingly variable industrial situations... This is why it cries out for national awareness of the improvement of industry productivity rates. As rational training and the improvement of the workforce are basic factors for the improvement of these indices, industrial education is now being called for a productivity campaign [...] directly serving the country's industrialization work (Vianna, 1963, p. 7).

Rational training would be the distinguishing feature for achieving a better return on industrial activity. In this sense, it is advisable to start from the “[...] objective analysis of school situations and

problems, an indispensable measure for the rationalization of education, which aims at its improvement and greater income” (Brejon 1963, p. 2). The author of the article, based on extensive research carried out in several industrial education institutions in the country, both federal and state and private public, warns of the insufficient enrollment growth, which would generate in the near future a great deficiency of qualified workforce. As suggestions for the expansion of the network of industrial schools, it proposes the universalization of curricula and the flexibilization of the structures of the various branches of secondary education, improvement of equipment and facilities, guarantee of the access of graduates to higher education, increase of forms of assistance to students for their maintenance in schools, information campaign to the population on the possibilities that technical education can offer in terms of obtaining employment, improving the working conditions of teachers and school employees, and encouraging the participation of employers in the elaboration of educational programs. Moysés Brejon concludes by the urgency of a planning for the branch of on-screen teaching.

On the pages of *Ensino Industrial* the concerns about educational planning must account for an increasingly fast and complex world.

Education planning is imposed not only by the amplitude of the economic, technical and intellectual effort that all educational work represents, but also by two characteristic features of our civilization: the acceleration of its development and its increasing complexity. [...] we must, as a function of time, choose and distribute our resources and share our efforts, that is, to plan (Maheu, 1963, p. 4-5).

The author of the article, René Maheu, then Director-General of Unesco, called for the convenience of technical assistance from countries and other international organizations with experience in educational planning, which should be integrated with economic and social planning, and indicated the need for relations more closely between educators and economists to objectively establish the procedures to be adopted for development.

But if there were no doubts about the importance of adequate and rational planning in the search for progress, official voices from the João Goulart government questioned whether the intentions of international cooperation were indeed imbued with developmental fervor. Education minister Paulo de Tarso Santos, on the occasion of the 3rd meeting of ministers of education of the

American continent, questions the intentions of the Alliance for Progress in promoting the structural transformations indispensable to solve the social problems of Latin America, since it was supported by forces known to be contrary to the basic reforms advocated by the Brazilian government. It also disagrees with the redeeming role that education, in itself, has in that context.

In Brazil, the national structure requires a profound change so that development is not a fiction. For this reason, the Brazilian government insists that any plan would be impractical if it were not accompanied and, at certain points before, the basic reforms. [...] That is why the national education plan is an integral part of our three-year development plan. We are committed to providing the state with technical and administrative staff to carry out new tasks that arise in a country that is industrializing. We aim to form frameworks for the works resulting from structural reforms that accompany and are required by development processes (Santos, 1963, p. 11).

As can be seen, a wording characteristic of the national-developmental crisis of the early 1960s. While on the one hand there is recognition of the importance of education in general, and of the professional in particular, for the country's progress, on the other it transpires the distrust of certain cooperation agreements and their effective purposes<sup>18</sup>. Despite this, the Goulart government, like those of its predecessors since the second Getúlio Vargas government, maintained the same orientation for professional education.

A striking feature of the concern with the formation of the workforce for the great developmental leap corresponds to the concern with the disciplinary aspects to be introjected in the students along their formative paths. In dealing with the objectives of the courses of the industrial gymnasium<sup>19</sup>, the MEC technician, J. B. Salles Silva, emphasized that they should awaken in the students

[...] the spirit of discipline and initiative, that is, giving you the opportunity to resolve new situations methodically and to exercise emotional self-control; [...] stimulate the formation of the habit of methodically planning the work itself; [...] to provide, within certain limits, the acquisition of motor habits and technical knowledge related to the use of machines, tools and materials (Silva, 1963, p. 9).

Regarding the didactic-pedagogical procedures to be adopted for professional education, there was only one article by Myria de Queiroz Maya, MEC teaching inspector, who defended the so-called programmed teaching, based on the ideas of psychologist Burrhus Skinner. In the author's view, with this type of education "[...] the educational process could be accelerated, with great efficiency and resource and time savings" (Maya, 1963, p. 14). As there was concern about the massive formation of labor force for industry, which in the period analyzed sought to follow the Fordist model then preponderant in the central countries, much more concerned with the training of workers to carry out automated operations, one can see how much solutions as they found a good welcome among the leaders of industrial education.

Although he distinguished between the concepts of education and training, Joaquim Faria Góes Filho, former director general of the national Senai and a figure present in several official commissions formed to think about the organization of professional education in Brazil, considered that "[...] both are necessary for the formation of human capital destined for development [...]" (Góes Filho, 1963, p. 10), leaving no doubt as to the orientation that should prevail for industrial education, either in official schools or private professional learning institutions. But the author acknowledges that middle-level vocational schools do not adequately account for the demands of the industry and advocated an increase in the number of mid-level technicians to be trained (who would be responsible for the technical realization of engineers' projects), as well as by the increase of industrial training for the execution activities carried out by the skilled and semiqualified workers.

The training of teachers and technicians for industrial education was one of CBAI's concerns. For the industrial schools of the federal network, the objectives of the Commission were, among others, "[...] training personnel for industrial schools; improve the content and methods adopted in teacher training courses; [...] organize standards and make recommendations regarding the construction and equipping of schools of industrial education" (CBAI órgão de cooperação, 1962, p. 7).

For enterprises it was prioritized

[...] assisting in the coordination of existing training programs, developed by public and private entities, in order to meet the needs of industrial expansion in the country; conduct a survey to determine the training needs of the industry, analyze the results and instruct new training programs according to the needs (CBAI órgão de cooperação, 1962, p. 7).

<sup>18</sup> At the time of the publication of the speech of the then-minister Paulo de Tarso Santos, Ponto IV (Point IV) was already explicit in the conspiracy against the Goulart government (Amorim, 2004).

<sup>19</sup> The Industrial Gymnasium, instituted by the law n. 3.552 / 59, corresponded to the old basic industrial course created by the Organic Law of Industrial Education of 1942, with the difference being to be secondary to secondary education and aimed at the probing of skills and technical initiation, having no more terminal character.



In short, the CBAI's plan aimed at training teachers and technicians to apply rational methods in educational institutions and in the companies where they worked, which in turn should retransmit to students and workers the same principles, with the objective of training them in the standard behaviors that the industry expects.

Throughout the first phase of the journal, a recurring theme was the recording of the activities of the National Union of Technical and Industrial Students (Uneti). Annual congresses of students in 1962 and 1963 were published in *Ensino Industrial*, highlighting the presence of a representative of the DEI/MEC and a message from Armando Hildebrand, then leader of the said board, relying on “[...] the the Brazilian youth is conscious of its duties at this decisive hour of the destiny of the Fatherland and of the existing problems, whose harmonious and happy solution can only be achieved through the loyal and frank participation of all” (Hildebrand 1963, p. 23). It is therefore indicated that government and students must walk together and without conflict in the direction of development.

The finding by DEI/MEC and CBAI that the growing Brazilian industrialization could face difficulties in its trajectory if there was not an intensification in the formation of labor force for the sector, led to the formulation of decree no. 53,324 of December 18, 1963, which instituted PIPMOI. With the use of statistical data<sup>20</sup> demonstrating the lag of middle-level technicians and skilled workers, *Ensino Industrial* called for “[...] the concentration of efforts of the public authorities, in parallel action to industry, to solve the crisis that threatens annul the developmental energy of the nation” (Editorial, 1963, p. 1).

The issue number 7 of the publication, from March 1964, is a special edition dealing specifically with PIPMOI, and announced an ambitious goal of preparing 50,000 industry professionals in the 20 months of the program<sup>21</sup>. All the planning of the program, the legislation related to it, the schedule and execution rules, reports of the activities of the different working groups that elaborated and proposed the established goals, and specification of the financial resources for its fulfillment, is detailed there. In relation to the number of professionals to be prepared, according to the DEI/MEC, labor market shortages and employment opportunities in each State of the Federation were considered (Hildebrand, 1964).

As for the procedures for achieving the proposed goals, the following are very clear: training through instruction sheets, at the end of which the evaluation of learning through control of the tasks and the time of their execution is carried out (Grupo de Trabalho de Formação..., 1964). Therefore, a type of education based on repetitive training to acquire certain habits, from real work situations, that is, from a given industrial reality, provide the training most appropriate for that specific situation. Teachers, who also had to undergo intensive training to teach PIPMOI courses, became responsible for defining and teaching the procedures to be incorporated by the students, in a situation analogous to that of the Taylorist administrator, because as a connoisseur of the ‘correct’, they should pass them on as the ‘scientific’ way of performing a given operation.

Therefore, the industrial education should be aimed at learning the adequate knowledge of the operation of the machines that will build Brazil of the future, provided they are used according to the methods of scientific rationalization. The country's progress could only be achieved by raising the level of the improved training processes in industrial education institutions and factories, and guaranteeing workers “[...] the fair use of their training, enabling them to develop and progress in the community to which it belongs” (Grupo de Trabalho de Encaminhamento, 1964, p. 71). The modernization of Brazil, an explicit goal of the developmentalist project then in vogue, should follow the steps taken by the societies of the industrialized West, and for this purpose foreign aid, mainly of the United States superpotency, was considered fundamental to enable such a course, in which the relations between the Goulart government and the US became very shaken, which led to the rupture of cooperation agreements between the two countries in the field of industrial education<sup>22</sup>. But the 1964 coup event reversed such breakup.

### Final considerations

The publication of *Ensino Industrial* by DEI/MEC and by CBAI during the period analyzed in this article, can be seen as a strategy of propagating the ideals of Americanism to the community linked to industrial education in Brazil, and by extension to all those who worked in the field of education in general. Through the journal, the leaders and

<sup>20</sup> These data are detailed in Fundamentos do Programa (1964).

<sup>21</sup> Of which 2,500 technicians and the rest of the workers according to Fundamentos do Programa (1964).

<sup>22</sup> With the extinction of CBAI, all its charges were passed on to the Grupo Executivo do Ensino Industrial (GEEI) (Executive Group of Industrial Education). The latter became responsible for the training of specialized personnel for industrial education, in addition to continuing the programs in progress.

technicians connected to the collaboration agreement established between the Brazilian government and USAID gave visibility to the work of DEI and CBAI regarding the efforts expended to solve the problems of that branch of education.

The concern with the formation of the labor force can be explained by its political role in the formation of the productive citizen, by spreading the pretended values and ways of thinking and living of the one that would play a fundamental role in the construction of modern, industrialized and developed Brazil. For this, it was urgent to build a consensus around a certain conception of education and society, marked by the omnipotent presence of progress, associated with the rationalization of social life, capable of eliminating obstacles to Brazil's insertion in the concert of developed nations, and removing the social conflicts. It was imperative to expand industrial education in particular as an adequate means of human promotion, since in giving the student the qualification demanded by the industry would enable his social ascent and access to consumption. This way, industrial education was emphasized as an element of national redemption.

In *Ensino Industrial* the discourse of quantitative growth has always been present as a condition to meet the labor market of the secondary sector of the economy, a requirement of the country's development process. At the juncture analyzed here, the PIPMOI edition, which initially lasted 20 years, was extended until 1982, always with the offer of vocational courses and training for workers with little schooling, and then to seek jobs that required training obtained. With the same justification, although situated in a different world of work, workforce training programs would be repeated decades later, such as Planfor (Plano Nacional de Qualificação do Trabalhador)<sup>23</sup>, which lasted from 1996 to 2002), PNQ (Plano Nacional de Qualificação)<sup>24</sup>, between 2003 and 2007) and Pronatec (Programa Nacional de Acesso ao Ensino Técnico e Emprego)<sup>25</sup>, instituted in 2011 and still in force). In all of them, the bet is in the fast qualification for the market, with the secondary technical education placed in the background; in all of them, failures happened because they do not achieve their goal and do not allow the target public the access to better jobs and improvement in their social conditions.

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<sup>23</sup> National Worker Qualification Plan.

<sup>24</sup> National Qualification Plan.

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