

The (non) Implementation of the PNE and its Impact on Economic, Social and Technological Innovation Development in Brazil

Cleverson Molinari Mello^{a*}, Pedro Leão da Costa Neto^b

^aPhD, Teacher of the Interdisciplinary Master's Program Society and Development - State University of Paraná - Brazil

^bPhD, Teacher of the Master's and Doctorate Program in Education - Tuiuti University of Paraná - Brazil

^aEmail: cleverson.mello@unespar.edu.br

^bEmail: pedro.costa@utp.br

Abstract

The present study aimed to analyze the 20 goals of the PNE (acronym for Brazilian Plan for Education in Portuguese) in force in Brazil until 2024. To date, only one goal has been met, number 13, that refers to the certification of higher education academics. The failure to meet these goals - especially those related education funding - means to put at risk the PNE and the actions aimed at Brazilian education for the period. The negative impact is to be perceived in medium and long term, hindering the progress of economic and social development and technological innovation.

Keywords: Education; Plans; Development; Innovation.

1. Introduction

The Brazilian Plan for Education (Plano Nacional de Educação - PNE), Law N° 13.005/2014, in force until 2024, by the articulation among federal entities, is aimed to make universal the compulsory provision for education of children aged 4 to 17, the increase of education level and the literacy rate, the improvement of the quality of basic and higher education, the improvement of access to technical and higher education, the appraisal of education professionals, the increase of investments in education, the decrease of social inequalities, and the management democratization. However, in order to achieve these goals, it is required a greater effort on the part of federated entities, actions which are consistent with regional and domestic realities are required, since little progress has been made regarding the 20 goals that comprises the PNE.

* Corresponding author.

2. Methodology

As for the objectives, the study is exploratory, while the procedures are bibliographic. The report on the second cycle of monitoring the crossings of the national education plan was used for analysis.

3. Discussion

PNE is not aligned, except by analogy, with a planning of economic order. It is a reference for planning a sector of social order (the educational sector), for which it plays a role of a supra-ordinary act, in line, but not subordinated, to multiannual plans. In this sense, on June 26, 2014, PNE was approved to be in force for ten years, considered as a planning tool for the democratic rule of law that guides the implementation and improvement of public policies in this sector. The plan establishes guidelines, strategies and goals for education. In turn, states and cities have to organize local and regional strategies to achieve the goals proposed in the PNE. The formulation of the Brazilian Plan for Education is a requirement for the Brazilian Education System to irrevocably keep its specific characteristics. Indeed, it is necessary to act systematically in the educational system; otherwise, it will tend to distance itself from human objectives, specifically characterizing itself as a structure [1]. The PNE consists of 20 (twenty) goals that range from early childhood education to higher education. [2].

Goal 1 (Childhood education). In what concerns early childhood education, the Brazilian Plan provides that by 2016 every child aged 4 to 5 should be enrolled in preschool. The plan also stipulates that the number of places in day care centers will be expanded by 10 years, assisting at least 50% of children under 3 years old. **To date, Goal 1 has not been met.** For preschool (4-5 year olds), the target period ended in 2016 and was not met. In 2016, 91.5% of children aged 4 and 5 were assisted. With regard to day care centers (children 0 - 3 years old), the target is only valid for 2024, but in 2016, only 32% of the group was assisted.

Goal 2 (Elementary education). For Goal 2, the PNE determines that, until the last year of the Plan, the entire Brazilian population from 6 to 14 years old has to be enrolled in elementary education, which lasts 9 years. In addition, the completion rate of this stage should be at least 95%, ensuring the basic education of students at the correct age. **To date, Goal 2 has not been met.** It is expected that it is necessary to include 600 thousand children of this age group (6 to 14 years) in school. Regarding the percentage of 95% of 16-year old population with elementary school completed, in order to reach the target by 2024 it is necessary to change the average growth from 1.5 percentage points per year to 2.7.

Goal 3 (High school education). According to the plan, by 2016, the entire Brazilian population aged 15 to 17 has to be attending high school. The goal also includes raising the net enrollment rate to 85% by 2024. **To date, Goal 3 has not been met.** According to the latest data, school coverage in 2017 was only 91.3%, meaning that 900 thousand adolescents are out of school. Regarding the net rate of enrollment in this age range, 2017 data point to only 70%.

Goal 4 (Inclusive education). The PNE provides that every child and adolescent aged 4 to 17 with disabilities, developmental disabilities, special abilities or giftedness has to have access to basic education and special care

(by means of the regular school system and an effective inclusive education system). **To date, Goal 4 has not been met.** The percentage of these children and adolescents in ordinary classes of basic education, according to the latest data, is 90.9%.

Goal 5 (Literacy). To provide every Brazilian child with literacy skills by the end of the third year of elementary school at the latest. **To date, Goal 5 has not been met.** According to the report and based on the national test that assesses students' proficiency in writing, reading and math, 50% of students are concentrated in levels 1 and 2 of the 4 levels on the proficiency scale.

Goal 6 (Full-time education). The Brazilian Plan for Education aims to provide by 2024 full-time education in half of the country's public schools to meet at least 25% of primary school students. **To date, Goal 6 has not been met.** According to the report, in 2017 the number of students in full-time public schools was only 17.4%. The report also points out that, according to a Basic Education census, the total of schools that offered full-time education was 28.6%.

Goal 7 (Appropriate learning at the correct age). The PNE also aims to achieve better national averages for the Basic Education Development Index (Ideb - Índice de Desenvolvimento da Educação Básica). To date, Goal 7 has been partially met. The latest data are from 2015. Considering the numbers from 2105, the result meets the target only in the early years of elementary school.

Goal 8 (Average education). This Goal plans an average education level of 12 years of study by 2024 in the population from 18 to 29 years old. The target extends to rural dwellers and aims to level the indicators between African descents and Caucasians. **To date, Goal 8 has not been met.** According to numbers from 2016, the average number of years of study for the age group from 18 to 29 was 10.2. In farm areas, 8.5 years of study. Among Caucasians, the rate was 11 years, and the rate among African descents was 9.6 years.

Goal 9 (Literacy for young people and adults). The PNE plans as a target a percentage of 93.5% by 2015 to the literacy rate of young people and adults aged 15 and over. It also aims to eradicate total illiteracy by 2024 and reduce the functional illiteracy rate to 13.5%. To date, Goal 9 has not been met. The literacy rate of young people and adults aged 15 and over was unchanged at 93% until 2017 (latest data), while the functional illiteracy rate was 6.5%.

Goal 10 (Literacy for young people and adults integrated with professional education). The Plan aims to align Elementary, High and Professional Education so that at least 25% of the enrollments in programs of literacy for young people and adults (Educação de Jovens e Adultos - EJA) integrate the three modalities by 2024. **To date, Goal 10 has not yet been met.** In 2017, the percentage was only 1.5%.

Goal 11 (Professional education). The goal is to triple the enrollment in high school technical courses, ensuring education of quality and a 50% growth in the number of vacant places in public schools. By 2024, the intention is to reach 5.224,584 enrolled students. **To date, Goal 11 has not been met.** In order to achieve this target, an average of 430 thousand new enrollments per year is required.

Goal 12 (Higher education). The Plan determines an increase in the gross rate of enrollments to 50% and in the net rate to 33%. In this sense, 40% of new enrollments have to be in public schools. **To date, Goal 12 has not been met.** In 2017, according to the National Household Sample Survey (Pnad Contínua), the gross rate was 34.6%.

Goal 13 (Certification of higher education academics). The plan provides for 75% of masters and PhDs in the faculty of higher education institutions. For PhDs, the percentage should reach a minimum of 35% by 2024. **Goal 13 has been met** in 2015, and in 2016, the rate of professors with at least the master's degree was 77.5%.

Goal 14 (Graduation program). The PNE determines an increase in the number of teachers enrolled in *stricto sensu* graduate courses, reaching an annual degree of 60 thousand masters and 25 thousand PhDs. **To date, Goal 14 has not been met.** In 2016, there were 59,600 masters and 20,600 PhDs in Brazil.

Goal 15 (Teacher training). The Plan contemplates that every teacher of basic education has a college degree by 2024 and that every teacher of the last years of elementary and high school has higher education in the field they teach. **To date, Goal 15 has not been met.** According to the latest 2016 data, the number of teachers with proper training in the field they work is lower in all stages: in early childhood education, the total of teachers with proper training in Brazil was 46.6%, while those who teach in the early years of elementary school total to 59%, 50.9% in the last years, and 60.4% in high school.

Goal 16 (Continuing education and graduate program). This goal establishes that by 2024 half of basic education teachers should have a graduate degree in their area of knowledge and 100% of teachers should have a continuing education. **To date, Goal 16 has not been met.** According to the latest 2017 data, the number was 36.2%. The percentage of basic education teachers who attended continuing education courses was 35.1%.

Goal 17 (Teacher appreciation). This goal establishes that by 2020 a salary equalization of teachers of public schools of basic education with other professionals of equivalent education. To date, goal 17 has not been met. According to 2017 data from the National Household Sample Survey (Pnad Contínua), the average monthly gross income of teaching professionals is 74.8% compared to what other professionals with the same level of education receive.

Goal 18 (Career plan). Before 2016, the PNE determined the development of a career plan for the public basic and higher education professionals of all education systems based on the national wage floor. **To date, Goal 18 has not been met.** According to the 2018 data from the National Institute for Educational Studies and Research Anísio Teixeira (INEP) only 68% of the cities pay the domestic wage floor. According to the report, there are still several career plans in all states and the Federal District.

Goal 19 (Democratic management). The PNE aims to guarantee the necessary conditions for a democratic management of education, which should include technical criteria of appreciation and performance, as well as consultations with the school community. **To date, Goal 19 has not been met.** According to the report, only 70% of the federative units (18 states and the Federal District) hold elections and set technical criteria of appreciation and performance aimed to choose state school principals.

Goal 20 (Education funding). The plan aims to increase federal investment in public education to 7% of Gross Domestic Product (GDP) by 2019 and the equivalent of 10% of the GDP by 2024. **To date, Goal 20 has not been met.** In 2015, the percentage was 5.5% of the GDP. There are no indicators for the 2017-2018 biennium. As can be seen, only Goal 13 (higher education teacher qualification) has been met. Considering that the PNE is in the half period of application, it feels that the goals are unlikely to be met by 2024. And since there has been a small progress so far, what steps are being taken by federated entities to reverse what seems unavoidable? It is important to underline the need for collaboration among all actors involved. In this sense, states and cities are fundamental in taking actions and considering regional specificities, since the Federal Constitution of 1988, Art. 211, determines that the Union, the states, the Federal District and the cities shall collaboratively organize their education systems. A hypothesis is that if Goal 20 (education funding) is not met, that is, if investments in education by 2024 are not equivalent to 10% of gross domestic product (GDP), the rest of the goals is unlikely to be met. According to data from the Domestic Treasury Department, the percentage invested in education in Brazil was around 6% of its GDP in 2018, below the 7% established by the PNE for 2019 [3]. It is evident that Brazil fails in terms of investments in relation to the GDP in order to comply with the plan, but what about the Expenses Ceiling (Constitutional Amendment 95/2016) that cuts investments for twenty (20) years? What is the impact of this cut on the National Education Plan and what are the consequences for Brazil? Considering the Constitutional Amendment 95/2016 and in order to meet PNE Goal 20, it would be necessary to increase public resources in education and an increase of financial resources that differs from the previous year by a value higher than the Broad Consumer Prices Index (Índice de Preços ao Consumidor Amplo - IPCA), since, for instance, it is necessary to increase the number of enrollments, improve teacher salaries, and expand and improve the infrastructure of schools and universities. However, it would require a variation below the IPCA for other sectors of the executive branch, such as health programs. That would be the only possible solution to increase the elementary expenses of the Ministry of Education (MEC) so that the PNE goals could be met, especially those directly linked to the Union.

4. Conclusion

With the accomplishment of Goal 20 (education funding), it will be possible to guarantee the accomplishment of the other goals established in the National Education Plan (PNE). To achieve these goals means to democratize the access to education, increase its quality, promote the appreciation of teachers, foster democratic management, and overcome inequalities. Since Brazil has made little progress in meeting the PNE goals, then it is necessary to make a re-evaluation and a re-alignment of the state and municipal decennial education plans, as well as a re-alignment of the multi-annual plans and budgets with the PNE. Only the cohesion between plans and budgets can make it possible to achieve the goals established in the PNE. However, Constitutional Amendment 95/2016 (Expenses Ceiling) makes such referrals unfeasible, so the Amendment needs to be revised urgently. Despite politicians and businessmen usually advocate that we are living in the “knowledge society”, it is worth remembering the importance of education as an inducer of other public policies, as a multiplier of GDP and as a factor in increasing productivity. Thus, the negative impacts on the economic, scientific, social and technological development for Brazil in case it does not comply with the National Education Plan can only be effectively felt in the medium and long term. Literature on Management and Economics frequently present concepts such as "technical advancement is fundamental to the progression and economic growth of a region."

Moreover, it is not new that scientific and technological knowledge is a competitive factor, and that the university, for example, plays a key role and is an influential responsible not only for the conception of the "universal values of men", but also for the invention and dissemination of new methodologies, research and proper use of more efficient production processes [4]. History have a myriad of examples of countries that, by making considerable investments in education and research, have made extraordinary leaps in many areas, since education brings social and economic development in a macro context, as well as improving the social, productive and interpersonal skills of individuals. In this perspective, it is important to highlight the action of the Federal Institutes of Education, Science and Technology, created in Brazil by Law no. 11.892/08, December 29, 2008. These are institutions that offer basic, professional and higher education, multi-curricular and multi-campi, specialized in the provision of vocational and technological education in different modalities based on the combination of technical knowledge and technological developments [5]. In theory, Federal Institutes legitimize the verticalization of education because they outline their policies of action by offering different levels and modalities of professional and technological education, taking for themselves the burden of distinct possibilities of schooling as a way to fulfill their commitment. Thus, the possibility for Federal Institutes to integrate the different levels of basic, higher, vocational and technological education gives this network an interesting degree of coverage [4]. However, once Goal 11 (professional education) has not yet been met, Goal 20 (education funding) is also unlikely to be met. In addition, the Constitutional Amendment 95/2016 cut investments for 20 (twenty) years in Brazil. The Federal Institutes that could be "producing knowledge" within the two perspectives, that is, technological innovation, and at the same time, aligned with the "universal values of men", thus being a strategic tool for economic development. , socially and technologically, Brazil will inevitably no longer produce.

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