# AVALIAÇÃO DA GESTÃO NO ENSINO TÉCNICO PROFISSIONAL: IMPLICAÇÕES DA REFORMA DO ENSINO MÉDIO

## EVALUACIÓN DE LA GESTIÓN DE LA ENSEÑANZA TÉCNICA PROFESIONAL: IMPLICACIONES DE ESCUELA DE ENSEÑANZA SECUNDARIA

## MANAGEMENT ASSESSMENT IN PROFESSIONAL EDUCATION: IMPLICATIONS OF HIGH SCHOOL REFORM

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**RESUMO:** A respectiva pesquisa objetiva avaliar a gestão das escolas profissionais da rede pública estadual localizadas em Fortaleza, no estado do Ceará. Para essa análise, consideraramse (n=39) professores, no intuito de entender os efeitos da reforma do ensino médio para a organização e sistematização das ações pensadas para a avaliação e a gestão das escolas pesquisadas. A metodologia adotada centrou-se na estratégia metodológica quadripolar de Bruyne, Herman e Schoutheete (1977). O estudo inseriu-se na abordagem quantitativa do tipo descritiva e exploratória quanto ao seu objetivo geral. No tocante ao tratamento das análises oriundas dos dados quantitativos sobre a escala Likert de avaliação dos oito itens objetivos presentes no questionário semiestruturado para a pesquisa, foram adotadas as seguintes técnicas: o alfa de *Cronbach* (α), a *Corrected Item-Total Correlation* e a Análise Fatorial Exploratória.

PALAVRAS-CHAVE: Avaliação. Gestão. Ensino médio profissional. SAEB.

**RESUMEN:** La respectiva investigación objetiva evaluar la gestión de las escuelas profesionales de la red pública estadual umbicadas en Fortaleza, en el estado del Ceará. Para tal análisis, se consideran (n=39) profesores, con la meta de comprender los efectos de la reforma de la enseñanza média para la organización y sistematización de las acciones pensadas para la evaluación y la gestión de las escuelas pesquisadas. La metodología adoptada se centró en la estratégia metodológica de quadripolar de Bruyne Herman e Schoutheete (1977). El estúdio se inserto en el abordaje quantitativo del tipo descriptivo y exploratorio cuanto a su objetivo general. Sobre el tratamiento de los análisis oriundos de los

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datos quantitativos sobre la escala Likert de evaluación de los ocho artículos objetivos presentes en el cuestionário semiestruturado para la investigación, fueron adoptados las siguientes técnicas: el alfa de Cronbach (a), la Corrected Item-Total Correlation y Análise Fatorial Exploratória.

PALABRAS CLAVE: Evaluación. Gestión. Enseñanza media profesional. SAEB.

ABSTRACT: The respective research aims to evaluate the management of professional schools of the state public network located in Fortaleza, state of Ceará. For this analysis, (n=39) teachers were considered in order to understand the effects of the reform of high school for the organization and systematization of the actions thought for the evaluation and management of the schools surveyed. The adopted methodology was centered around Bruyne, Herman and Schoutheete's (1977) quadripolar methodological strategy. The study was inserted in the quantitative approach of the descriptive and exploratory type regarding its general objective. Concerning the treatment of analysis from quantitative data on the Likert scale of the eight objective items present evaluated in the semi-structured questionnaire for the research, the following techniques were adopted: Cronbach's alpha  $(\alpha)$ , Corrected Item-Total Correlation and Exploratory Factor Analysis.

**KEYWORDS:** Evaluation. Management. Professional high school. SAEB.

#### Introduction

It is observed that educational management acts as a guiding element of educational practices, a context in which this article, from the perspective of evaluation, aimed to assess school management through the unfolding of the reform of high school and its effects on the dynamics of schools technical-professionals.

It is known that institutional assessment is an agent for improvements in the organization of the school space. Thus, we ask ourselves: what is the centrality of public policies designed for basic education? Is evaluation an element of organization or coercion of the behaviors observed at school? Does management have autonomy in the process of organizing actions at school?

In view of these questions, it is worth considering the public policies and the management model that govern basic education and the congruence with education projects aimed at the working class.

The epistemology that governs the propositions of this study was consolidated under the bias of dialectical historical materialism. Thus, it is understood that the prism of material conditions is a component subject to observation and reflection. Dialectical historical materialism

as the basis of scientific theory of history is based on the evolution of society and attempts to explain this development process.

The following discussion topic will deal with Karl Marx's epistemology and the initial provisions centered on the categories of work and education.

#### **Theoretical Reference**

The discussion to be presented deals with Karl Marx's epistemology condensed through the approximations between the categories of work and education. It seeks to reflect on the foundations that interconnect work and social, cultural, political and historical relations based on the perspective of dialectical historical materialism.

### Karl Marx's epistemology: initial understandings about work and education

Karl Marx's epistemology aims at understanding the specificities that govern work as a founding category of the social being. In order to establish study proposals based on work as an educational principle, it is necessary to understand the material and structural historicity of the work category as a basic element of the respective study proposal.

In the meantime, according to Engels (1876), work is the founding activity of the social being. As the man worked, exercised and experienced complex relationships that required strategies, the ability to adapt and improve his own activities, passing this knowledge from generation to generation. The knowledge acquired during this socialization process functioned as a strategy for the dissemination of the knowledge acquired, as well as in guaranteeing its existence in the face of rudimentary living conditions.

For Carnoy (1987), the individual behavior of individuals is the product of historical forces that are anchored in material conditions, whose social changes alter the relationships between men. Therefore, according to the author's thinking, "[...] Marx considered the material conditions of a society as the basis of its social structure and human consciousness" (CARNOY, 1987, p. 20).

Work is, therefore, considered the founding activity, that is, a materially based activity that makes it possible to exist, a condition for human life. It is through the needs of subsistence that the subject man started to modify his environment, overcoming the difficulties related to

<sup>&</sup>lt;sup>5</sup> "[...] Marx considerava as condições materiais de uma sociedade como base de sua estrutura social e da consciência humana"

his routine (ENGELS, 1876). For the author, the duration and maintenance of human life were conditioned to overcoming adversity and the strategies adopted to guarantee this objective, functioning as important elements for the formation and constitution of the human subject.

Work as an educational principle focuses on the role of man as a social subject. The action subject becomes autonomous in this action, recognizing himself as the subject of his materially based action. For Titton (n/y), it is important to recognize the category of work as the basis for the formation of the social man, considering that, when we enter into the debate about a fundamental polemic such as that surrounding work as an educational principle, it is important to, in our evaluation, make explicit the central point that unifies those involved in the controversy, which is the recognition of work as a founding category of the social being. Thus, it is necessary to reaffirm its meaning, due to the implications that derive from it in the whole process of social struggle and that also involve the production of knowledge (TITTON, n/y, p. 2).

The educational principle of work characterizes work as a founding category of the social being, reaffirming that when man produces his basic life conditions, he ends up producing his own life, that is, the production of the knowledge process results from the work activity itself, creating, according to the author, a human world. This capacity for organization and systematization is what differentiates us from animals, as we establish greater relationships of deepening about the material world of things.

Work as an educational principle, according to Titton (n/y), emerges as a pedagogically based strategy, aimed at the formation of critical-reflexive citizens on the use of work as a negation of man, that is, work relations that contradict the ideas of Engels and Marx. For him, these proposals are directed and guided only to the generation of profit and appropriation of wealth by a few, causing relations of estrangement and alienation of work by the worker, that is, the worker ends up not appropriating the final product of his work.

Titton (n/y) offers a reflection on a new reality, distinct from the reductionism employed by the molds of the production system, closely relating work, as an essential construction to man, to the broad formation of the individual, providing a reflexive criticism employed in the use of work as a founding activity of the social being.

#### **Education in technical and professional education**

Education emerges as a necessity for the maintenance of the system, that is, an anticipation of the factory, the school being the ideal environment to instill discipline and order

in the workers, so that they reproduce the knowledge generated within the factory. Enguita (1989) makes a relation between the qualification of the work and the disqualification of the worker. The qualification of the worker increased, however, his expectations in relation to better working and living conditions became just an illusion in the face of the urgencies that the production system does not meet.

Enguita (1989) reports that workers who adhere to the terrible conditions of employment are in jobs called underemployment. However, workers who do not meet this increasing order of qualification and disqualification end up unemployed, as they do not accept such impositions. Kuenzer (1992) reaffirms Enguita's concept of school, but takes into account that the school may be the place where resistance is present.

The locus, therefore, of knowledge production, is the set of social relations; there are countless ways of producing and distributing knowledge, resulting from the daily confrontation of man with nature and with his peers, which presents him with questions that compel him to develop his own ways of thinking and doing, experimenting, discussing, analyzing, discovering (KUENZER, 1992, p. 27).

Thus, the question is: is the school part of a movement of reproduction, maintenance or liberation from the current order? It is up to the understanding of the context in which the school is based, seeking to continuously expand the reflections that permeate this construction.

In the discussion topic below, the dynamics of interventions and challenges in the context of the "new high school", the effects on legislation and for the subjects that make up the dynamics of the professional education modality will be discussed.

#### Management in professional technical education

It is known that public policies organized and systematized for the school are centered as guiding threads for new proposals and actions to be carried out in the educational context. For Vieira (2015), the reflection on the low quality provided to students of basic education presented massively in the results obtained through large-scale evaluations, as well as in the productions and research published in periodicals and events with a central theme in education is an element latent that needs to be observed and contextualized through dialogued actions and policies that involve the school and the participation of civil society.

The emergency nature of actions with a concrete material basis was perceived as deliberate actions in the form of public policies of a character, lightened to overcome the challenges of expansion, quality and permanence of young people in high school.

In the legal provisions linked by the Official Diary of the Union on February 17, 2017, there were substantial changes related to the practices, concepts, purposes and functionalities of high school, based on changes in Law no. 9,394/1996.

Art. 36. The high school curriculum will consist of the National Common Curricular Base and formative itineraries, which should be organized by offering different curricular arrangements, according to the relevance to the local context and the possibility of the education systems, know: I - languages and their technologies; II - mathematics and its technologies; III - natural sciences and their technologies; IV - applied human and social sciences; V - technical and professional formation (BRASIL, 2017).

In the observation of the change in article 36, it was found the beginning of profound curricular changes to be incorporated through the National Common Curricular Base (BNCC). In this context, secondary education, by means of the respective legislation, should therefore aggregate the so-called formative itineraries to be organized and offered by school institutions. In item V of the aforementioned law, there was the presence of the technical and professional formation itinerary axis, standing out as a central figure of the reform in high school presented by the Federal Government.

Given this context, it is necessary to understand the theoretical assumptions and concepts present in the actions and deliberations carried out by these changes and what are the effects of this reform on the management of professional state schools located in the city of Fortaleza-CE.

For Newton Duarte and Betty Oliveira, in their book *Socialização do saber escolar* (Socialization of school knowledge), these actions are poor initiatives of concepts and theoretical basis and end up focusing on a technical and "lame" learning, from the point of view of the learning required in this teaching stage. For the authors, this type of understanding of education ends up reducing the possibilities of social insertion, as it compromises the learning of the contents at the expense of a technical character of learning (DUARTE; OLIVEIRA, 1987).

The pedagogical proposal of the old school was not intended for technical and professional formation in the face of immediate needs; formation aimed at traditional disciplines was sought (BRASIL, 2017).

<sup>&</sup>lt;sup>6</sup> Art. 36. O currículo do ensino médio será composto pela Base Nacional Comum Curricular e por itinerários formativos, que deverão ser organizados por meio da oferta de diferentes arranjos curriculares, conforme a relevância para o contexto local e a possibilidade dos sistemas de ensino, a saber: I - linguagens e suas tecnologias; II - matemática e suas tecnologias; III - ciências da natureza e suas tecnologias; IV - ciências humanas e sociais aplicadas; V - formação técnica e profissional (BRASIL, 2017).

From the twentieth century, the professional formation school was created at different levels and similar to the propaedeutic formation schools. The old professional education structure was based on Taylorist/Fordist production techniques and was later replaced by another model of pedagogical project, determined by the changes in the globalized world of work and which, although still hegemonic, has emerged as dominant, thus becoming "[...] from the old Taylorist-Fordist model to the flexible production model, known as the Toyotist. With the new model, more complex knowledge and skills started to be demanded" (SOUZA; OKÇANA, 2013, p. 290).

According to Cerqueira (2018), in the period from 1856 to 1915, Taylor developed a set of methods for industrial production known as Taylorism. According to Taylor, the employee should only perform his/her function/task in the shortest possible time during the production process, with no need for knowledge of how to arrive at the final result.

Still in the view of the same author, Henry Ford (1863-1947), in turn, developed the system of organization of industrial work called Fordism. The main characteristic of Fordism was the introduction of assembly lines, in which each worker was in a specific place performing a specific task, while the car (manufactured product) moved around the factory on a kind of conveyor. With that, the machines dictated the pace of work.

Nowadays, the community provides new relationships between work, science and culture and, based on this historical construct, a new educational model emerges, that is, a new pedagogical project. For this reason, society aims to transform the formation of "[...] intellectuals/workers, citizens/producers to meet the new demands posed by the globalization of the economy and by productive restructuring" (SOUZA; OKÇANA, 2013, p. 290).

According to Souza and Okçana (2013), education based on skills formation instigates problem solving, as it makes it challenging for the student to work with the acquired knowledge and sharpens creativity in the search for new technologies. The applied content is the means, that is, the foundation and not the mere transfer of knowledge to fulfill a programmatic content. The teacher is the mediator of the learning process, making the student an autonomous being and capable of making decisions.

Also according to the aforementioned authors, it is observed that the demands of the world of work become increasingly mutant, complex and competing. Thus, professional

<sup>&</sup>lt;sup>7</sup> "[...] do antigo modelo taylorista-fordista para o modelo de produção flexível, conhecido como toyotista. Com o novo modelo, passou-se a exigir conhecimentos e habilidades mais complexas"

<sup>&</sup>lt;sup>8</sup> "[...] intelectuais/trabalhadores, os cidadãos/produtores para atender às novas demandas postas pela globalização da economia e pela reestruturação produtiva"

education points out possibilities for the construction of innovative practices, but consistent with technological advances and new forms of production and social relations.

In line with the Law of Guidelines and Bases for Professional Education (LDB), Law no. 9,394/1996, in its article 39, states that professional education integrates the different forms of education, work, science and technology and it aims to lead to the development of skills for productive life. Professional education institutions must develop a work aimed at preparing people who have learned to build new skills for work autonomously and are able to articulate and incorporate the different areas of knowledge (SOUZA; OKÇANA, 2013, p. 297).

Souza and Okçana (2013 p. 296) state that:

The development of skills arises to meet the specific requirements of the market and of today's society. It is necessary for today's professional to develop technical and human skills, aiming at growth, improvement and efficiency in results, based on the premise that human beings have a powerful potential, and that ends up being the competitive advantage of organizations.<sup>9</sup>

Corroborating Souza and Okçana (2013), it is observed that the new competitive claims that mark the globalized market and bring the advancement of new technologies are present in the daily life of the worker, showing the growing demand for the appropriate professional profile to promote learning situations that collaborate not only to face the implicit demands, but also for a transforming attitude.

#### **National Basic Education Assessment System**

It is known that the National Basic Education Assessment System is directed to the monitoring and follow-up of actions that are established in the educational context. Thus, there is a leveling of education networks and systems in promoting quality public education. According to Bauer (2010), external evaluations are articulated to improve the quality of educational systems, as they are linked to student performance, and to the contextual variables present in education networks and systems.

External evaluations are an element of equity in the design of quality public education. For this purpose, considering the current LDB, in title IV, called "From the organization of National Education", in article 8, it was established that the Union, the States, the Federal

<sup>&</sup>lt;sup>9</sup> O desenvolvimento das competências surge para atender as exigências específicas do mercado e da sociedade atual. É necessário que o profissional de hoje desenvolva competências técnicas e humanas, visando crescimento, aperfeiçoamento e eficácia nos resultados, tendo como premissa que o ser humano tem um poderoso potencial, e que acaba sendo o diferencial competitivo das organizações.

District and the Municipalities can share collective actions in a collaborative regime for their education systems. Thus, in accordance with the respective law:

[...] § 1 The Union will be responsible for coordinating the national education policy, articulating levels and systems and exercising normative, redistributive and supplementary functions in relation to other educational bodies. § 2 The education systems will have freedom of organization under the terms of this law (BRASIL, 2017). 10

For Santos, Gimenes and Mariano (2013), external evaluations are linked to the global context of articulation of actions to promote educational quality. From 1990 on, therefore, there was a quantitative materialization of the data resulting from the indicators about the teaching and learning process.

In our country, the Ministry of Education (MEC), in conjunction with the State Education Secretariats, implemented the Basic Education Assessment System (SAEB, Portuguese initials). The justification for the implementation of this system is associated with the defense of evaluation as the possibility of providing information on educational processes, whether at the municipal or state level, in order to direct the decision-making process in relation to public policies, academic performance of students and the quality of the school system as a whole (SANTOS; GIMENES; MARIANO, 2013, p. 40).

The respective structuring of SAEB is guided by article 24, when it says that:

[...] the verification of school performance will observe criteria, among which we can highlight: a) continuous and cumulative evaluation of the student's performance, with prevalence of qualitative aspects over quantitative ones and the results over the period over those of eventual final exams (BRASIL, 2017).<sup>11</sup>

In this perspective, Bonamino and Franco (1999) emphasize the importance of international organizations for proposing public policies to be regulated by developing countries. This analysis is present in educational policies on school curricula and on the management of teaching systems and networks. Thus, the presence of international bodies on education management establishes specific guidelines for the promotion of public actions and policies aimed at the area.

<sup>&</sup>lt;sup>10</sup> [...] § 1º Caberá a União, a coordenação da política nacional de educação, articulando os níveis e os sistemas e exercendo função normativa, redistributiva e supletiva em relação às demais instâncias educacionais. § 2º Os sistemas de ensino terão liberdade de organização nos termos dessa lei (BRASIL, 2017).

<sup>&</sup>lt;sup>11</sup> [...] a verificação do rendimento escolar observará critérios, dentre eles podemos destacar: a) avaliação contínua e cumulativa do desempenho do aluno, com prevalência dos aspectos qualitativos sobre os quantitativos e dos resultados ao longo do período sobre os de eventuais provas finais (BRASIL, 2017).

Thus, for Pinto and Viana (2019), external assessments related to the scope and educational dynamics are woven and financed by international organizations. Since 1990, the World Bank has articulated guidelines for promoting changes to Brazilian education at the municipal, state and federal levels. In this perspective, external evaluation, through the consolidation of the National Basic Education Evaluation System, constituted itself as an unfolding of the World Bank's actions in national education.

By virtue of Decree no. 9,432, of June 29, 2018, in the format of Law no. 13,005, dated 2014, established the concrete materialization of the need for articulation through the legislative character, with the congruence between the policy and the evaluations external. Based on the premise of accompanying and monitoring the learning developed within educational institutions, it is therefore necessary to carry out continuous research. Thus, it should be noted that the respective Decree comprises the expansion and enhancement of SAEB as an instrument anchored in the National Policy for the Evaluation and Examination of Basic Education, namely:

> Art. 3 The principles of the National Policy for Evaluation and Exams in Basic Education are: I - equal conditions for access and permanence of students in school; II - guarantee of the quality standard; and III - guarantee of the right to education and lifelong learning. Art. 4 The National Policy for Evaluation and Examination of Basic Education is part of: I - the Basic Education Evaluation System - Saeb; II - the National Examination for the Certification of Youth and Adult Skills - Enceja; and III - the National High School Exam - Enem (BRASIL, 2017).12

In this context, the external evaluation, in line with the management and evaluation model, is directed as an instrument of actions aimed at the approval of the Common National Curriculum Base and a level of education, in this case, High School, intrinsically related international provisions adopted by international organizations for the organization of education in Latin American countries, including Brazil.

Thus, below, the sedimented structure for the respective research will be presented, in an attempt to understand the effects and actions carried out in the public schools of the state network located in the city of Fortaleza-CE, through the management model anchored in these

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<sup>&</sup>lt;sup>12</sup> Art. 3º São princípios da Política Nacional de Avaliação e Exames da Educação Básica: I - igualdade de condições para o acesso e a permanência do estudante na escola; II - garantia do padrão de qualidade; e III garantia do direito à educação e à aprendizagem ao longo da vida. Art. 4º Integram a Política Nacional de Avaliação e Exames da Educação Básica: I - o Sistema de Avaliação da Educação Básica - Saeb; II - o Exame Nacional para Certificação de Competências de Jovens e Adultos - Enceja; e III - o Exame Nacional do Ensino Médio - Enem (BRASIL, 2017).

schools and the directions obtained from the guidelines established through the SAEB for Technological Professional High School.

## Research methodology

The respective research is part of the quadripolar approach. Thus, this study was developed in four research centers that deal with the methodological understanding established by Bruyne, Herman and Schoutheete (1977). Therefore, from the perspective of Karl Marx's (1818-1883) dialectical historical materialism, an attempt was made to carry out a critical articulation of professional education as a teaching modality and the effects of this dynamic in the state sphere of public education located in Fortaleza-CE. Thus, it is based on the concerns of this study: what are the effects caused by the strengthening of external evaluations in state educational institutions located in Fortaleza, Ceará? What is the role of school management in this educational dynamic? What are the management practices that corroborate or not to achieve the indexes woven by the National Basic Education Assessment System?

Thus, the results obtained by schools called EEEPs (Portuguese initials for State Schools for Professional Education) located in the city of Fortaleza, Ceará, were chosen for the methodological approach adopted in the research for High School (HS) of the respective institutions within the scope mentioned above.

The respective research also fits into the quantitative approach structured by means of descriptive and inferential statistics. For this, the software SPSS (Statistical Package Social Sciences) version 21.0 for Windows was adopted, condensed from the analysis of (n=39) subject teachers from state public schools located in Fortaleza, in the state of Ceará. Thus, the sample was configured through the availability of the research subjects.

An Informed Consent Form was structured, with the objective of requesting the involvement and participation of teachers in the study. However, according to the demands presented by the schools, only (n=39) subjects chose to participate in the research. According to the Secretariat of Education (2019), the State Schools of Professional Education of Ceará, in 2008, had 25 units opened in their first year of operation. Currently, the state of Ceará has more than 119 institutions in the Professional Education modality.

The field research focused on the municipality of Fortaleza, in the State of Ceará, in ten school units corresponding to: Regional I, Regional II, Regional III, Regional IV and Regional V. However, only (n=39) subject teachers decided participate in the respective study.

The data collection instrument applied in the research corresponds to a semi-structured questionnaire and was built based on two sections. The section called "A" mentions the profile of the respondents of the research, including statements that deal with gender, age group, school function, marital status, family income, time at the institution and education.

The second section of the questionnaire, called "B", was structured based on the SAEB indicators, that is, eight objective items measured on a Likert scale of evaluation. The degree of variation was composed of five categories of measures, namely: 0 - I do not know how to answer; 1 - I totally disagree; 2 - Partially disagree; 3 - I partially agree; and 4 - I totally agree. In this way, the elaboration of the items of this instrument is based, above all, according to the concepts of Severino (2016) and linked to the performance factors of the students and the management practices and methods evidenced in the model of the researched institutions.

Regarding the treatment of the analysis of the quantitative data on the Likert scale for the evaluation of the eight objective items, it was decided to use, mainly, as statistical analysis techniques, Cronbach's alpha (α), *Corrected Item-Total Correlation* and Factorial Exploratory Analysis (AFE, Portuguese initials), in order to assess its quality, refinement, organization, value judgment and data validation. For this, we applied the *software Statistical Package for the Social Sciences* (SPSS), version 20.0 for Windows, taking as theoretical references the conceptions of Pontes Júnior (2014) and Field (2009).

For Bruyne *et al.*, (1977), the research takes the contextual look about the challenges in the organization of the public school, weaving reflections on the indicators that surround the studied modality. Corroborating, Minayo, Deslandes, Cruz Neto and Gomes (1994, p. 13) establish that: "The object of the social sciences is historical. This means that human societies exist in a specific space whose social formation and configuration are specific"<sup>13</sup>.

#### Analysis and discussion of results

This article has a basic purpose, an exploratory character and a quantitative approach, according to the concepts found in Marconi and Lakatos (2015). In this sense, this research aimed to assess management through factors associated with the National Basic Education Assessment System, and the sample was composed of (n=39) respondents. Thus, the results of the quantitative analysis were evidenced by means of graphs, tables, figures and charts, seeking a better inference and interpretation of reality, as well as, to indicate the recommendations made

<sup>&</sup>lt;sup>13</sup> "O objeto das ciências sociais é histórico. Isto significa que as sociedades humanas existem num determinado espaço cuja formação social e configuração são específicas"

by conducting the respective research. Data analysis is organized into two sections, such as: profile of the respondent; assessment and management of the factors associated with the performance of students linked to management and the assessment carried out in schools through the built school.

#### Respondent profile

The profile of the respondents that make up the sample totals 39 (n=39) respondent teachers, these being analyzed in gender; age group; marital status; family income and education, as we will highlight below.

With regard to the respondents' gender, it was noticed that 59% (n = 23) correspond to the male gender and 35.9% (n = 14) to the female gender; and also 5.1% (n = 2) did not respond, as shown in Graph 1 below. Regarding the age group, it was found that 87.2% (n = 34) are aged 25 years or older, while 12.8% (n = 5) are aged 20 to 24 years old, as shown in graph 2.

Vazio

2 - Masculino

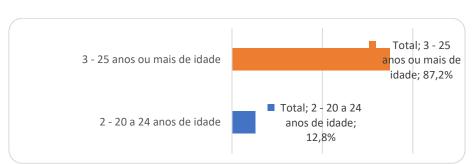
1 - Feminino

Total; Vazio;
5,1%

Total; 2 - Masculino;
59,0%

**Graph 1** – Gender<sup>14</sup>

Source: Devised by the authors (2019).



**Graph 2** – Age group<sup>15</sup>

Source: Devised by the authors (2019).

<sup>&</sup>lt;sup>14</sup> We read on the graph: Fist line: Empty / Total; Empty; 5.1%. Second line: Male / Total; male; 59.0%. Third line: Female / Total; female; 35.9%

<sup>&</sup>lt;sup>15</sup> We read on the graph: First line: 25 years old or more / Total; 25 years old or more; 87.2%. Second line: 20 to 24 years old / Total; 20 to 24 years old; 12.8%.

Regarding the respondents' marital status, it was noted that 51.3% (n = 20) are single; 28.2% (n = 11) are married; 12.8% (n = 5) are divorced; and 7.7% (n = 3) highlighted another type, as shown in Graph 3. Regarding the respondents' family income, it was found that 46.2% (n = 18) receive up to three minimum wages; 20.5% (n = 8) receive up to four minimum wages; 30.8% (n = 12) receive up to five minimum wages or more; and 2.6% (n = 1) did not know how to answer, as shown in graph 4.

4 - Outro

Total; 4 - Outro;
7,7%
Total; 3 - Separado;
12,8%

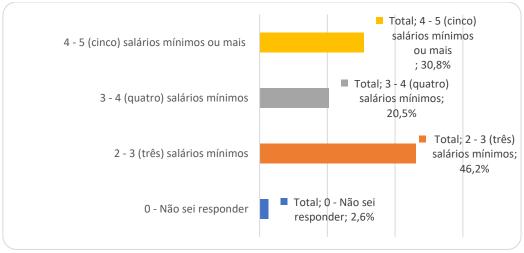
1 - Solteiro

Total; 2 - Casado; 28,2%

Total; 1 - Solteiro; 51,3%

**Graph 3** – Marital status<sup>16</sup>

Source: Devised by the authors (2019).



**Graph 4** – Family income<sup>17</sup>

Source: Devised by the authors (2019).

Regarding the respondents' level of education, it was observed that 74.4% (n=29) have a postgraduation, while 25.6% (n=10) have a graduation, as shown in Graph 5. As for the function that exercise at school, it was found that 2.6% (n=1) is the percentage for principal;

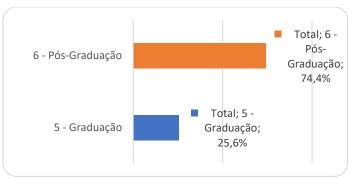
(CC) BY-NC-SA

<sup>&</sup>lt;sup>16</sup> We read on the graph: First line: Other / Total; other; 7.7.%. Second line: Divorced / Total; divorced; 12.8%. Third line: Married / Total; married; 28.2%. Fourth line: Single / Total; single; 51.3%.

<sup>&</sup>lt;sup>17</sup> We read on the graph: First line: 5 (five) or more minimum wages / Total; five or more minimum wages; 30.8%. Second line: 4 (four) minimum wages / Total; four minimum wages; 20.5%. Third line: 3 (three) minimum wages / Total; three minimum wages; 46.2%. Fourth line: I don't know / Total; I don't know; 2.6%.

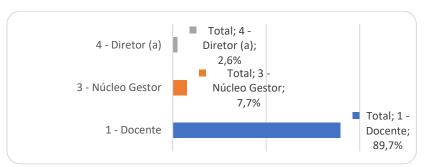
7.7% (n=3) belong to the management nucleus; and 89.7% (n=35) are teachers, as shown in Graph 6.

**Graph 5** – Level of education<sup>18</sup>



Source: Devised by the authors (2019).

**Graph 6** – Function at school<sup>19</sup>



Source: Devised by the authors (2019).

Therefore, the sample formed from the (n = 39) respondents presents as its main characteristics: gender is male (59%); age ranges from 25 years or more (87.2%); marital status is single (51.3%); family income is limited to three minimum wages (46.2%); the level of education is postgraduate (74.4%); and the role performed at school is that of a teacher (89.7%). Thus, the factors relating to the performance of the Management Center will be condensed below using the management model employed in the respective professional schools of the state public network located in the city of Fortaleza, Ceará.

## Teachers' perceptions related to the management model employed in EEEPS

<sup>&</sup>lt;sup>18</sup> We read on the graph: First line: Postgraduation / Total; Postgraduation; 74.4%. Second line: Graduation / Total; graduation; 25.6%.

<sup>&</sup>lt;sup>19</sup> We read on the graph: First line: Principal / Total; principal; 2.6%. Second line: Management nucleus / Total; management nucleus; 7.7%. Third line: Teacher / Total; teacher; 89.7%.

The evaluation scale with items measured on a *Likert* scale presents a total of eight items. Therefore, a good and satisfactory quality was found in its composition and formulation, since *Cronbach's alpha* ( $\alpha$ ) is equal to 0.79 and the *Corrected Item-Total Correlation* started to vary between [0.30; 0.69], as shown in Chart 1.

**Chart 1** – *Corrected Item-Total Correlation* of the eight items

Item-Total Statistics	
	Corrected
	Item-Total
	Correlation
Q.1 Regarding leadership: managers and educators develop vision, mission, values and ethics related to students.	0,53
Q.2 The manager is committed to ensuring the implementation of action plans through their respective action programs.	0,30
Q.3 The management group develops partnerships and dialogues between teachers, students and the school community.	0,69
Q.4 The managerial nucleus verifies the demands based on the relationships experienced at the school, promoting resolutions through proactive actions.	0,64
Q.5 The management team assists in the collective work, in the discipline and in the establishment of respect between the subjects that integrate the school.	0,62
Q.6 The formation offered to teachers is constituted in an attentive and continuous way.	0,46
Q.7 In the dynamics presented at school, there is an involvement between the management nucleus and the school community	0,41
Q.8 The communication strategies adopted at the school are effective for the integration between management, teachers, students and the school community.	0,48

Source: Devised by the authors (2019) from SPSS (20.0).

After that, it was decided to apply the multivariate technique called Factorial Exploratory Analysis (AFE), based on the eight items that were evaluated with good quality, as the formulation of these items presents a multiplicity of information. In this sense, in order to make a consistent value judgment on the data matrix, it was assessed that the three steps called sample adequacy, factor extraction and factor rotation were satisfactorily met, as the design of Pontes Júnior guides (2014) that summarizes the AFE assumptions in figure 1.

**Figure 1** – Assumptions of AFE $^{20}$ 

Stage	Technique	Objective	Adequate values
1st adequation of the sample	Correlation of Pearson	Obtain the level of relation	0 to 0.29 – weak relation
		between items with some factor	0.3 to 0.69 – moderate relation
			Above 0.7 – strong relation
	Kaiser-Meyer-Olklin (KMO)	Identify the suitability of the	0.6 to 0.69 – acceptable
	-	sample size for the set of items	0.7 to 0.79 – good
			0.8 to 0.89 – great
			Above 0.9 – excellent
	Bartlett Sphericity test	Tests the hypothesis that an	Significant for $p \le 0.05$
	-	identity matrix of the variables	

<sup>&</sup>lt;sup>20</sup> The figure was made into a table it screened for translation purposes; the title was kept as figure.

		(items) of the test was generated	
2 <sup>nd</sup> extraction of factors	Method	Main Axis Factorization	Combine factors and consider errors
	Communalities	Main components	Gather items with similar variances
	Accumulated variance	Test explanation level	Above 0.4
	Factor variance	Factor explanation level	Above 50%
	Kaiser's rule	Indicates the "strength" of the extracted factor	Minimum of 5%
	Scree Plot	Viewing the inflection point	The sharp curve
3 <sup>rd</sup> rotation of extracted factors	Rotation	Varimax, Quartimax, Equamax, Oblimin, Promax	It depends on the objective of the study and the types of measurement of the items
	Factorial loads		Above 0.4

Source: Pontes Júnior (2014, p. 58).

Initially, the first stage of AFE, as shown in figure 1, addresses the adequacy of the sample. Therefore, it was observed that the Kaiser-Meyer-Olkin (KMO) test is equal to 0.77; and *Bartlett's Test of Sphericity* (BTS) is significant (p <0.001). On the other hand, Field (2009) corroborates and transcends the conception of Pontes Júnior (2014), highlighting the existence of another quality indicator for the sample per item, that is, the anti-image matrix that started to vary with values between [0.65; 0.86], being above 0.50 (FIELD, 2009), as shown in table 1. These three statistical tests show that the sample formed by the 39 respondents, having eight items on the evaluation scale, is classified in a category good and adequate for the performance of the AFE (FIELD, 2009; PONTES JÚNIOR, 2014).

**Table 1 -** Anti-Image Matrix for the eight items

Anti-Image Matrices									
		Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Q.7	Q.8
	Q.1	$0.80^{a}$	-,27	-,02	-,05	-,26	,10	-,28	-,07
	Q.2	-,27	$0.80^{a}$	-,20	-,02	-,05	,04	,11	,09
	Q.3	-,02	-,20	$0,77^{a}$	-,58	-,09	-,31	,06	-,06
Anti-Image	Q.4	-,05	-,02	-,58	$0,74^{a}$	-,39	,17	,04	-,19
Correlation	Q.5	-,26	-,05	-,09	-,39	$0,86^{a}$	-,02	-,08	,01
	Q.6	,10	,04	-,31	,17	-,02	$0,65^{a}$	-,48	-,27
	Q.7	-,28	,11	,06	,04	-,08	-,48	0,66ª	-,04
	Q.8	-,07	,09	-,06	-,19	,01	-,27	-,04	$0.86^{a}$

a. Measures of Sampling Adequacy (MSA)

Source: Devised by the authors (2019).

Then, the second stage of the AFE was contemplated, which addresses the extraction of factors, as shown in figure 1, by adopting the Principal Components (CP) method. Thus, it was noticed that the communalities, after the extraction, started to vary between [0.46; 0.73], as shown in table 2; Graph 7, based on the interpretation of the latent root criterion, reports the existence of two significant factors for our eight-item evaluation scale.

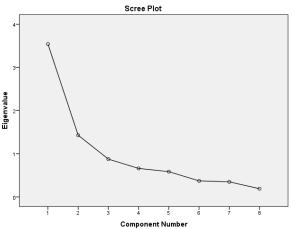
**Table 2 -** Communalities of the eight items

Communalities				
	Initial	Extraction		
Q.1	1,00	0,46		
Q.2	1,00	0,51		
Q.3	1,00	0,72		
Q.4	1,00	0,75		
Q.5	1,00	0,67		
Q.6	1,00	0,73		
Q.7	1,00	0,66		
Q.8	1,00	0,48		

Extraction Method: Principal Component Analysis.

Source: Devised by the authors (2019) with SPSS (20.0).

**Graph 7** – Scree plot



Source: Devised by the authors (2019) with SPSS (20.0)

Subsequently, through the AFE expressed through the total variance of the eight items contained in the semi-structured questionnaire, it was verified, according to the analysis made in table 3 below, the cumulative total explained variance of 62.1% for two factors (Q1; Q2).

The factor called Q.1 contained in the semi-structured questionnaire is linked through the leadership established by the sharing of actions, vision, values and ethics linked to students, teachers and managers of the researched institutions. Thus, the respective factor contradicts what was exposed by Paro (2016a, p. 122):

In the formal structure of our public school, the prediction of horizontal human relations, solidarity and cooperation among people is almost entirely absent, observing, instead, the occurrence of an order in which hierarchical relations of command and submission prevail.<sup>21</sup>

<sup>&</sup>lt;sup>21</sup> Na estrutura formal de nossa escola pública está quase totalmente ausente a previsão de relações humanas horizontais, de solidariedade e cooperação entre as pessoas, observando-se, em vez disso, a ocorrência de uma ordenação em que prevalecem relações hierárquicas de mando e submissão.

Thus, decisions are shared, with autonomy and collaboration between the subjects that make up the school.

The factor called Q.2 is related to the action plans drawn up by the management nucleus and, therefore, for Lück (2013, p. 65):

[...] the concern with monitoring and evaluation corresponds to the dedication to achieving the effectiveness of the educational actions promoted through actions observed, analyzed and followed in relation to meeting the educational needs of the school community and the educational objectives.<sup>22</sup>

Therefore, action plans are the guiding elements of the actions that are performed in the school.

**Table 3 -** Total variance explained for the eight items

Tota	Total Variance Explained								
Co	Initial Eigenvalues			Extraction Sums of Squared			Rotation Sums of Squared		
mpo				Loading	S		Loadings		
nent	Total	% of	Cumulat	Total	% of	Cumulati	Total	% of	Cumulati
		Variance	ive %		Varianc	ve %		Variance	ve %
					e				
1	3,54	44,26	44,26	3,54	44,26	44,26	2,93	36,58	36,58
2	1,43	17,86	62,12	1,43	17,86	62,12	2,04	25,54	62,12
3	,88	10,94	73,07						
4	,66	8,25	81,31						
5	,58	7,31	88,62						
6	,37	4,64	93,26						
7	,35	4,37	97,63						
8	,19	2,37	100,0						

Extraction Method: Principal Component Analysis.

Source: Devised by the authors (2019) with SPSS (20.0).

The third stage of the AFE was approached, highlighting the rotation of the extracted factors, as shown in figure 1. Then, the Varimax rotation was chosen. Such action produced three interactions of convergent rotation. In this sense, one can perceive the following characteristics of each of the two factors obtained, such as:

(a) Factor 1 presents a sharing of factor loads in items Q1, Q2, Q3, Q4 and Q5, as shown in table 2. In addition, we noticed that both the consistency/formulation of factor 1 has good quality, since the *alpha of Cronbach* ( $\alpha$ ) is equal to  $0.81\approx0.8$  and *the Corrected Item-Total Correlation* started to vary between [0.45; 0.72], as shown in chart 3. In this way, we will name

<sup>&</sup>lt;sup>22</sup> [...] a preocupação com o monitoramento e a avaliação corresponde à dedicação ao alcance da efetividade das ações educacionais promovidas mediante ações observadas, analisadas e acompanhadas em relação ao atendimento das necessidades educacionais da comunidade escolar e os objetivos educacionais.

it the actions of the management team, since these five items address in their semantics the critical/reflexive operationalization of the management team in terms of ensuring leadership, implementation, partnership, dialogues, proactivity, collectivity and mutual respect between the manager-educator-teacher screening at the educational institution.

(b) Factor 2 presents a sharing of factor loads in items Q6, Q7 and Q8, as shown in table 2. Furthermore, we noticed that both the consistency / formulation of factor 2 has good quality, since Cronbach's alpha ( $\alpha$ ) is equal to  $0.69\approx0.7$  and the Corrected Item-Total Correlation started to vary between [0.61; 0.85], as shown in table 3. In this sense, we will name it the institutional mutual practice of the school public, since these three items highlighted in their affirmations the existing practice in attentive and continuous formation, in integrated communication strategies and in the involvement of management, community, teachers and students.

Chart 2 - Rotational matrix of the eight items

Rotated Component Matrix <sup>a</sup>					
	Comp	onent			
	Factor 1	Factor 2			
Q.4 The managerial nucleus verifies the demands based on the relationships experienced at the school, promoting resolutions through proactive actions.	0,84				
Q.3 The management group develops partnerships and dialogues between teachers, students and the school community.	0,78				
Q.5 The management team assists in the collective work, in the discipline and in the establishment of respect between the subjects that integrate the school.	0,78				
Q.2 The manager is committed to ensuring the implementation of action plans through their respective action programs.	0,69				
Q.1 Regarding leadership: managers and educators develop vision, mission, values and ethics related to students.	0,63				
Q.6 The formation offered to teachers is constituted in an attentive and continuous way.		0,85			
Q.7 In the dynamics presented at school, there is an involvement between the management nucleus and the school community		0,81			
Q.8 The communication strategies adopted at the school are effective for the integration between management, teachers, students and the school community		0,61			
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.					
a. Rotation converged in 3 iterations.					

Source: Devised by the authors (2019) with SPSS (20.0).

Thus, the AFE formed by the eight items comprises a total explained variance of 62.1% based on the construction of two significant factors, they are: factor 1, which deals with the actions of the managing nucleus, and factor 2, which addresses mutual institutional practice, both of which have good composition / formulation quality. Accordingly, Paro (2012, p. 25) explains that

"[...] this transcendence occurs as he seeks to achieve, through rational action, the objectives he proposes"<sup>23</sup>. In this way, the management of the elements that guide the educational practice is consolidated as a component of the practices and actions developed in the school.

**Chart 3 -** Quality of the two rotational factors using the Varimax method

	Cronbach's Alpha	Item-Total Statistics	Corrected Item-Total
	1		Correlation
		Q.1 Regarding leadership: managers and educators develop vision, mission, values and ethics related to students.	0,54
		Q.2 The manager is committed to ensuring the implementation of action plans through their respective action programs.	0,45
Factor 1	Q. and scl Q. bar scl act Q. wo res	Q.3 The management group develops partnerships and dialogues between teachers, students and the school community.	0,69
		Q.4 The managerial nucleus verifies the demands based on the relationships experienced at the school, promoting resolutions through proactive actions.	0,72
		Q.5 The management team assists in the collective work, in the discipline and in the establishment of respect between the subjects that integrate the school.	0,67
		Q.6 The formation offered to teachers is constituted in an attentive and continuous way.	0,61
Factor 2	0,7	Q.7 In the dynamics presented at school, there is an involvement between the management nucleus and the school community.	0,51
		Q.8 The communication strategies adopted at the school are effective for the integration between management, teachers, students and the school community.	0,42

Source: Devised by the authors (2019) with SPSS (20.0).

In addition, it was decided to assess the level of agreement/disagreement of the items organized into categories/factors, according to the responses of the (n=39) respondent teachers. For factor 1, which addresses the actions of the management core, we have the items: Q1, Q2, Q3, Q4 and Q5. Therefore, we observed that most subjects are more in agreement [partially; fully] than disagreeing in each of these sentences presented, as shown in chart 4.

In view of this, the conditions presented must be intrinsically related to the determinant mode of work of the management nucleus in relation to the objects, because, according to Paro (2016b, p. 2), "[...] is considered the school where one seeks, in a systematic and organized

<sup>&</sup>lt;sup>23</sup> [...] essa transcendência se dá à medida que ele busca realizar, por meio da ação racional, os objetivos a que propõe"

way, the appropriation of knowledge"<sup>24</sup>. Thus, through cohesive work, institutions can achieve their educational goals and objectives.

Chart 4 - Level of agreement/disagreement factor 1

Items	Likert scale variation	F	%
O.1 December 1 and auching management and	1 - Fully disagree	1	2,6
Q.1 Regarding leadership: managers and	2 - Partially disagree	2	5,1
educators develop vision, mission, values and ethics related to students.	3 - Partially agree	9	23,1
and ethics related to students.	4 - Fully agree	27	69,2
Q.2 The manager is committed to ensuring	0 – Don't know how to answer	1	2,6
the implementation of action plans through	1 – Fully disagree	1	2,6
their respective action programs.	3 - Partially agree	4	10,2
	4 - Fully agree	33	84,6
Q.3 The management group develops	1 – Fully disagree	1	2,6
partnerships and dialogues between	3 - Partially agree	12	30,7
teachers, students and the school	4 - Fully agree	26	66,7
community.			
Q.4 The managerial nucleus verifies the	1 – Fully disagree	1	2,6
demands based on the relations experienced	3 - Partially agree	11	28,2
at the school, promoting resolutions through	4 - Fully agree	27	69,2
proactive actions.	4 - 1 tilly agree		
Q.5 The management team assists in the	1 – Fully disagree	1	2,6
collective work, in the discipline and in the	2 - Partially disagree	2	5,1
establishment of respect among the subjects	3 – Partially agree	6	15,4
that integrate the school.	4 - Fully agree	30	76,9

Source: Devised by the authors (2019) with SPSS (20.0).

With regard to factor 2, which points to institutional mutual practice, we have the items: Q6, Q7 and Q8. So, we noticed that most people are more agreeing [partially; fully] than disagreeing in each of these sentences presented, as shown in chart 5.

<sup>&</sup>lt;sup>24</sup> "[...] toma-se a escola onde se busca, de forma sistemática e organizada, a apropriação do saber"

**Chart 5 -** Level of agreement/disagreement factor 2

Items	Likert Scale variation	F	%
	0 - Don't know how to answer	1	2,6
Q.6 The formation offered to teachers is	1 - Fully disagree	1	2,6
constituted in an attentive and continuous	2 - Partially disagree	9	23,0
way.	3 - Partially agree	17	43,6
	4 - Fully agree	11	28,2
Q.7 In the dynamics presented at school,	0 - Don't know how to answer	1	2,6
there is an involvement between the	2 - Partially disagree	4	10,2
management nucleus and the school	3 – Partially agree	12	30,8
community.	4 - Fully agree	22	56,4
O 0 The communication strategies adopted	0 - Don't know how to answer	1	2,6
Q.8 The communication strategies adopted	1 - Fully disagree	1	2,6
at the school are effective for the integration	2 - Partially disagree	3	7,6
between management, teachers, students and the school community.	3 - Partially agree	18	46,2
and the school community.	4 - Fully agree	16	41,0

Source: Devised by the authors (2019) with SPSS (20.0).

Thus, below, the final considerations about the study will be presented, highlighting the contributions arising from the theme and also the demands experienced in the context of the respondent subjects, the teachers, and the way in which external evaluations direct the evaluation and management model, inserting it as base for the practices and actions visualized in the state schools inserted in the modality of Professional Education.

#### **Final considerations**

Based on the evaluation of management through the analysis of (n=39) teachers who are part of the network of state schools located in the professional education modality, it was observed that the management and leveling of institutional practices are configured as important elements for the proposition of successful practices.

The dialogue and the partnership regime are observed in the school dynamics, according to the analysis carried out. The categories generated through the indicators linked to the factor analysis denote the actions of the managerial nucleus, relating them as a significant institutional practice through the perception of the respondent subjects.

The categories present in the instruments satisfactorily condense the guidelines and specificities linked to these institutions. Thus, it is necessary to expand the scope of the respective research, with the aim of causing actions and improving management practices and understanding of the evaluation while monitoring these actions with the State Schools of Professional Education located in the city of Fortaleza, Ceará.

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