

A CONCEPÇÃO DE EDUCAÇÃO NOS PROJETOS POLÍTICO-PEDAGÓGICOS DOS INSTITUTOS FEDERAIS DO NORDESTE BRASILEIRO

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RESUMO

O objetivo deste artigo é analisar a concepção de educação nos Projetos Político-Pedagógicos (PPP) dos Institutos Federais (IF) do nordeste brasileiro. Fundamenta-se na base conceitual da Educação Profissional e Tecnológica (EPT), cuja vertente reivindica a educação integral. Metodologicamente, os PPP foram tratados pelo software IRAMUTEQ 0.7 alfa 2, possibilitando a geração de nuvem de palavras e de gráficos de Classificação Hierárquica Descendente (CHD) e de Análise Fatorial de Correspondência (AFC). A análise dos dados apontou para a formação para a

apropriação do conhecimento técnico e perfil profissional, de modo a não perder de vista o pressuposto teórico de base marxiana, a gestão descentralizada e transparente e a oferta de modalidades educacionais diversas. Conclui-se reivindicando a aproximação entre a teoria presente nos documentos e a prática pedagógica e administrativa dos educadores, bem como recomendando a ampliação da análise para demais PPP dos IF no Brasil.

PALAVRAS-CHAVE: Educação profissional, Projeto Político-Pedagógico, Institutos Federais, IRAMUTEQ.

THE CONCEPT OF EDUCATION IN THE POLITICAL-PEDAGOGICAL PROJECTS OF THE FEDERAL INSTITUTES OF NORTHEAST BRAZIL

ABSTRACT

The purpose of this article is to analyze the concept of education in the Political-Pedagogical Projects (PPP) of the Federal Institutes (IF) of the northeast of Brazil. It is based on the conceptual basis of Technical and Vocational Education and Training (TVET), whose strand demands integral education. Methodologically, PPP were treated by IRAMUTEQ 0.7 alpha 2 software, enabling the generation of word cloud and graphics of Descending Hierarchical Classification (DHC) and Correspondence Factor Analysis (CFA). Data analysis

pointed to training for the appropriation of technical knowledge and professional profile, in order not to lose sight of the theoretical assumption based on Marx, the decentralized and transparent administration and the offer of different educational modalities. It concludes by claiming the approximation between the theory present in the documents and the pedagogical and administrative practice of the educators, as well as recommending the expansion of the analysis to other PPP of IF in Brazil.

KEYWORDS: Professional education, Political-Pedagogical Project, Federal Institutes, IRAMUTEQ.

1 INTRODUCTION

The politics and history of professional education were themes recently evaluated by Ciavatta (2019). For the author, the analysis of these themes involves the reflection on the historicity of the events, the critical thinking and the work as an educational principle in its founding form. Regarding the critical thinking, the author defends criteria that imply to unveil the appearance and the official discourse - it is necessary to go beyond. Regarding the historicity of the events, we agree with Ramos (2014) in the understanding that our society is structured in a dualistic way in the most diverse aspects, so that this dual configuration ended up creating a socio-cultural formatting in which one group cannot have access to the other, and vice-versa. Thus, amidst this division of social groups, Technical and Vocational Education and Training (TVET) emerged, initially, for those less fortunate. In other words, the children from the working class.

In a recent interview, Gaudêncio Frigotto invites us to reflect on the education that is received by the sons and daughters of the working class (Almeida and Gouveia, 2020). This reflection is fundamental to the discussion on the relationship between basic and professional education, and the disputes over the decrees that regulate TVET in Brazil (Zatti, 2014). According to the researcher, the origin of the Federal Institutes happened through a political engineering that involved the desire of the Federal Network of Professional Scientific and Technological Education (RFEPCT) for the verticality and a coordinated management that are defined as the greatest expansion project for the interiorization of quality education. In this context, Frigotto claims a permanent dispute/evaluation of this educational project, over which is already pointed, regardless of its contradictions, social and cultural gains greater than setbacks, in addition to achievements, such as integrated high school education, the closest offer to a complete, comprehensive education. It is in this evaluation/dispute scope over the accomplishment of this project of TVET offering in Brazil that we present this article.

Therefore, according to Gomes (2009), the educational institutions are mainly guided by the Political-Pedagogical Project (PPP), to integrate the educative work to society. This document, as described by Vasconcellos (apud Sousa and Corrêa, 2002), is a dynamic structure of participative planning that evolves along the educational process, guiding the desired educational action and functioning as a theoretical-methodological instrument for the transformation of the educational reality.

Thus, we exhibit two understanding that guide us: 1) the dual aspect over which TVET was build and the nuances that involve the process of historical construction over an education marked by the integral human formation; and 2) the Federal Institutes of Education, Science and Technology (IF) as Brazilian institutions committed to the education of the individuals/subjects as a whole. Thus, the objective of this study is to analyze the concept of education in the Political-Pedagogical Projects of the IFs in Northeast Brazil.



In order to achieve our objective, besides this introduction, our article is organized in the following manner: a section of theoretical foundation, in which we discuss the conceptual base of TVET, expressing the principles of the type of education we defend; a methodological section, in which we show the process of utilizing the software IRAMUTEQ 0.7 Alpha 2, making it possible to codify the text for the constitution of the corpus; a section of results and discussion, in which we interpret the data categorized by means of a word cloud, and of Descending Hierarchical Classification (DHC) and Correspondence Factor Analysis (CFA) graphs; a section of final consideration, in which we point out the implications, limitations and possible developments of our investigation.

2 CONCEPTUAL BASIS OF PROFESSIONAL AND TECHNOLOGICAL EDUCATION

In this section, for us to approach the conceptual basis of Technical and Vocational Education and Training (TVET), we performed a brief historicity of facts that we judge to be relevant for the reflection over the offer of this type of education in the Federal Institutes (IF). Thus, it is worth highlighting that, by the middle of the 19th century, the German Karl Marx, along with the English Frederick Engels, discussed over the historical duality that permeates the social conjecture, under which both the German and English societies were subjected. Although these authors did not exclusively write about education, it is possible to affirm that "[...] their works provide, in a span of over thirty years, a pedagogical dimension which, aligned to the history of the labor movement, demonstrates the importance for the reflection of education in the current days" (Curi and Giordani, 2019, p. 4).

In a more specific way, the Italian Antonio Gramsci, in the first half of the 20th century, made reflections, considering the democratization of school by the model of the unitary school and defending that the worker could understand the economic model and have a critical view of the society s/he participates. In other words, he criticized the division between an intellectual education, reserved for the sons and daughters of the elite, and the other education, with a professional nature, destined to the sons and daughters of the working class, who should be prepared to serve the elite (Rodrigues, 2009).

In this socio-historical context, these scholars proposed a type of education that took into consideration the union of these two forms of teaching (intellectual and professional), so that it was possible to the subjects a broad formation of their capabilities by the incorporation of work as an educative principle. Thus, Marx and Engels defended this education under the perspective of polytechnic or technological training, while Gramsci based his ideas on his proposal of unitary school, both aiming the comprehensive formation of the subjects, going against the formative one-sidedness. The combination of this conceptual basis reflected an education aimed at the emancipation of the working class, whose "[...] propositions are directed to the integration of the dimensions of life - work, science, technology and culture - as structural axes of the formative process" (Bessa, Cavalcante, Maldaner and Correia, 2020, p. 5).



In current times, the main foundation over which TVET is structured is the comprehensive education, that is, an education which is based in the search of a complete formation of the multiple capabilities of the subjects, encouraging the construction of the individual who has access both to the intellectual and general knowledge over the world that surrounds him, as well as the specific knowledge of an area of professional education, taking into consideration all of the contexts in which s/he is inserted or may come to be inserted. Thus, we can say that it is an integral education, committed not only to the expectations of the job market, but also to the individual needs of the subject her/himself, and of those who are around her/him (Mota, Araújo and Santos, 2018; Palmeira, Santos and Andrade, 2020; Santos, Jesus, Andrade and Silva, 2020).

The conceptual basis of TVET revolves around the deconstruction of the dualistic view of educating, so that it proposes that teaching is not segregated; in where intellectual and professional education do not follow different horizons, but search for a common denominator, through which the individuals may have access to the intellectual production of knowledge, without setting aside the construction of technical-professional knowledges, admitting an integral human formation (Sant'Ana, Nogueira and Brito, 2020).

In Brazil, the conceptual basis for TVET is found systematized in a historical document titled Base Document - of the Professional and Technical Education of medium level integrated to high school (Brazil, 2007). In it, we find the summary of the discussion of the three pillars of TVET: a) the integral human formation; b) the inseparability between work, science, technology and culture; and c) the work as an educative principle.

When discussing the integral human formation, we must have in mind that what is sought is a formative process that takes into consideration the need to educate in a comprehensive manner, in which teaching is seen in its totality inside the historic process of social formation. Thus, it is possible for the subjects to develop a human and integral manner, giving them the opportunity to establish themselves not only exclusively as mere workforce of the process of production of goods and services, because they are allowed to be formed in a broad, critical and reflective manner, in a way that they may act as opinion makers and promoters of new knowledges, acting as agents of social transformation in the environment they live in (Palmeira et al., 2020).

In order to make possible this type of education, the educational process must be guided total integration and the inseparability between work, science, technology and culture. These bastions of TVET can be summarized as follows (Table 1).

Table 1: Understanding about work, science, technology and culture.

WORK	Understood beyond its generic form, as form of livelihood of beings (historical sense). It is presented as a medium by which the subjects are constituted (ontological sense), the form through which the individuals become humans, from what they produce. The construction of the knowledges of humanity has as starting point the work: as they work,
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	the individuals produce knowledges, and, as they produce such knowledges, they are formed as individuals.
SCIENCE	Understood as the organization and systematization of the knowledges that are produced by human work: concepts, techniques and methods of specific fields of knowledge. Knowledges whose objectives are the intelligibility of the socio-cultural manifestations or natural phenomena that are presented throughout history, not being holders of absolute truths, being able to be questioned, refuted and (re)evaluated by the individuals.
TECHNOLOGY	Understood as the mediation between the systematized knowledges and the human work itself, being responsible for the materialization of these knowledges (in material environments or not) to perform interventions in the real world. The science materialized in productive force. All and any human production that is conceived from the relationship between the work, the technique and the science, existing beyond the equipment, machinery and artifacts, embracing the human relationships with such productions and its social consequences.
CULTURE	Understood as the social and behavioral codes that humanity produces, manifested by the political, economic, ethnic and ideological organization that the individuals build and insert themselves in. The interactions between the individuals, culminating in the production of symbols and representations that acquire specific meanings according to the context in which they are created or conducted.

. Source: Brazil (2007).

Therefore, from the moment there is an understanding that the work - along with the other three pillars - is a fundamental element in the formation of the individuals, we can understand the work as an educative principle, a fundamental grasp for the conceptual basis of TVET. We can state that the work viewed as an educative principle elevates the individuals to the position of agents of production and transformation of their realities, since the work is evaluated as the fundamental way a mediation between the individuals and society is established.

From what has been presented, it is possible to establish that TVET, in its current configuration, is a result of a historical construction that is based in the struggle for the overcoming of the structural dualism in education. On the one side, we have a proposal for teaching that only prioritizes professionalization, harming the individuals that participate in the formative process and of all and any contact with knowledges that are not related to the specific area of study; on the other side, it is presented a proposal for education that enables the individuals to have a comprehensive construction of their capabilities, both professional and intellectual, by means of the integration of the most diverse types of knowledge, both introductory and technical-professional ones.

Therefore, it is necessary that the Brazilian educational institutions that offer TVET, such as the IFs, and that have as regulatory principles the concepts that have been presented here, align

their educational, pedagogical and managerial practices to these theoretical postulates, materializing them via actions in the school life, especially to the students. Thus, we understand that it is worthy to evaluate if the understanding of education that these institutions possess in their official documents is in accordance with the basic concepts of TVET that we have presented yet.

3 METHODOLOGY

The article proposes mixed research characterized as exploratory, once it searches for information on an unknown reality over which we want to infer and understand. The study is categorized as mixed, having in mind that it uses a statistic and lexical analysis software over textual corpora, which results may be interpreted in a qualitative manner. In this perspective, we agree with Sampari, Collado and Lúcio (2014, p. 546), for whom:

Los métodos mixtos representan un conjunto de procesos sistemáticos, empíricos y críticos de investigación e implican la recolección y el análisis de datos cuantitativos y cualitativos, así como su integración y discusión conjunta, para realizar inferencias producto de toda la información recabada (metainferencias) y lograr un mayor entendimiento del fenómeno bajo estudio [...].

If, on one hand, the institutions' PPPs objectively exist, on the other, the inferences, meanings produced and interpretations over these texts are filled with subjectivities. Therefore, to achieve the objective of our study, we researched 10 PPPs of IFs at Northeast of Brazil. Once selected, we segmented and extracted of their texts the sections of theoretical foundation or guiding concepts. Next, the texts were codified and worked on in the software Interface de *R pour les Analyses Multidimensionnelles de Textes et de Questionnaires* (IRAMUTEQ), version 0.7 alpha 2. According to Camargo and Justo (2013, p. 513):

[...]. IRAMUTEQ is a free software developed under the open-source logic, licensed by GNU GPL (v2). It is anchored in the statistical environment of the software R and in the Python language (www.python.org). This computer program enables different types of analysis of text data, from the simplest ones, like basic lexicography (calculation of frequency of words), to multivariate analyses (descendant hierarchical classification, similarity analyses). It organizes the distribution of the vocabulary in an easily understandable and visually clear way (similarity analysis and word cloud).

Using the software, we generated a word cloud and Descending Hierarchical Classification (DHC) and Correspondence Factor Analysis (CFA) graphs. We highlight that this data treatment has been shown as productive for the exploration of long texts, having been updated for evaluations of academic texts, for example, due to the coherence of the research with epistemological postulates of a specific area of knowledge (Souza, Nunes and Oliveira, 2020). In a similar way to

the recently performed study, we understand that the IRAMUTEQ tool does not promote a qualitative analysis of the data, but it is set as an organizer of textual data, leaving the researcher to the role of interpreting and inferring over the material. This way, in the results and discussion that follow, we show an interpretation of qualitative nature over the product of the application of the utilization of the software in the selected texts, taking the responsibility highlighted by Souza, Wall, Thuler, Lowen and Peres (2018) regarding the use of IRAMUTEQ in scientific research and, along with the authors, stating the role of the researcher as the protagonist in the production of knowledge and the social impact related to this production.

4 RESULTS AND DISCUSSION

The initial results of the lexical analysis point that the *corpus* analyzed was separated for a total of 1,164 text segments (TS), with a rate of 92.35%. The statistical text analysis revealed that there were 5,468 occurrences between forms and 3576 reduced forms. Our first visual result is constituted by the word cloud (Figure 1), which has the function to organize the words of the text corpus, highlighting the terms that appear more frequently.

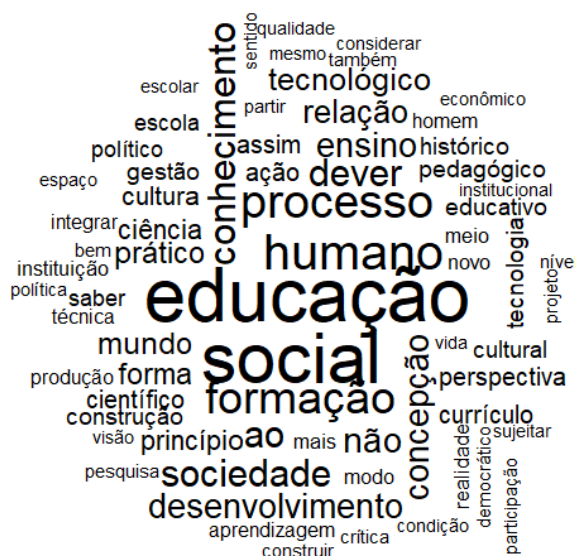


Figura 1: Nuvem de palavras. Figure 1: Word cloud.

The data indicate that the PPPs focus on discussing education in the scope of the IFs, once the word *education* appears with the greatest highlight. Although this fact does not surprise us, after all, these documents must work as guiding elements for the educative practices in their institutions, we also notice that the words *political* and *pedagogical* do not appear in a highlighted manner. If, on the one hand, the concept of integral education that we defend in TVET presumes a political project integrated to pedagogical practices, on the other, we argue that this correlation should be explicit, which could imply a greater highlight to the least visible expressions, such as

policy, political, critical, democratic, management, pedagogic. In our Brazilian society, we defend the understanding that these concepts should be maximized in the official discourse of the education, because this argument is fundamental for the fight against political projects that demand a “neutral” education, threatening the academic freedom of the educators, such as the project titled “School Without Politics”.

It is also worth highlighting that the words *social, human* and *formation* were also evidenced by the software analysis. In this case, the data point to expressions that are explicitly aligned to the conceptual basis of TVET and to the commitment to offering an education that aims for the human formation in social terms, which may be interpreted as a counter response to the branch of professional education that favors the job marked, with a marketing bias, that ignores the need of the worker to develop criticality and the conscience of her/his role as a citizen in the society s/he participates in.

Furthermore, in regard to the inseparability between work, science, technology and culture, proposed by Brasil (2007), we can realize that: i) the word *work* is absent; ii) the words *science/scientific* and *culture* are in the background; iii) the word *technological* is highlighted. Facing this data, although we cannot say that the *work as an educative principle* is not the guiding principle of the elaborated/presented documents, the disappearance of the word *work* is strange. We believe that its appearance, even in the background, could strengthen the perspective of integration of life dimensions, as Bessa et al. (2020) argue.

Regarding the evaluation of Descending Hierarchical Classification (DHC) and Correspondence Factor Analysis (CFA), it was possible to elaborate two graphs, one dendrogram and one cartesian plane, respectively. The dendrogram made possible the categorization of the *corpus* in six classes of words, reflecting the terms that emerge more frequently in each of them. Thus, it is possible to proceed to the verification of theme tendencies that each of these word approaches (Figure 2).

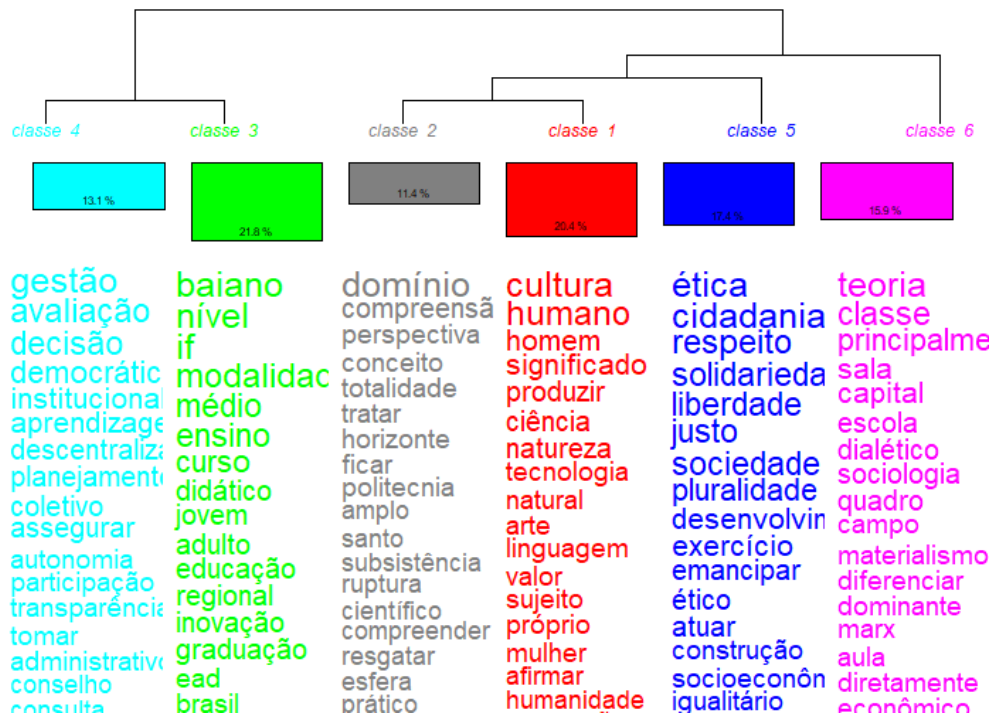


Figure 2: DHC dendrogram.

The interpretative analysis of each of the classes of words pointed to a main theme, so we could name them. In Class 1, words like *cultura*, *humano*, *man*, *meaning*, *subject*, *humanity*, *language*, *technology* and *science* emerge. We can understand them as corresponding to elements that must be present in the formation process of the students at the IFs – besides the other words that relate to that formation, that is, subject or man formed based on science, technology and culture in a significant way. That way, we understand that Class 1 refers to *Formation*. This understanding is confirmed by the following excerpts of PPP with the reduced form *produced*:

“[...] in the same conceptual beacon, education is conceived as a process of collective action resulting from the relationships and social groupings, both established from the needs and practices socially **produced** by the subjects [...]” (IFRN)

(IFS) “[...] an education that believes that the **produced** knowledge must extend to everyone, making it a true and intense social transformation [...]” (IFS)

“[...] thus, work is the mediation between man and object to be investigated and known, and the social appropriation of the knowledge **produced** is what gives it meaning and is in the foundation of the method that defines the active and creative school [...]” (IFCE)

In Class 2, words like *mastery*, *understanding*, *concept*, *totality* and *polytechnic* refer to the commitment of the IFs to the formation of citizens that possess technical knowledge to transform their lives. Thus, we understand that Class 2 refers to *technical knowledge*. We highlight that this

class bolsters the understanding of the previous class, being illustrated by the reduced form *mastery* which calls for the following excerpts of the documents:

(IFMA) “[...] polytechnic means the *mastery* of technique in an intellectual level and the possibility of flexible work with the rearrangement of tasks at a creative level assumes the overcoming of a merely empirical knowledge when requiring the use of more abstract ways of thinking [...]” (IFMA)

“[...] this broad understanding of education differs from the tradition of professional formation that, from its origins, is destined to the ill-fated and conducted to excessively link itself to the goals and values of the marked and to the **mastery** of the methods and techniques [...]” (IFBA)

It is worth highlighting that both excerpts show an intent from the IFs to promote an education that break with the historical duality of Brazilian education and that can go beyond the mere appropriation of technical knowledge, which corroborates the conceptual basis of TVET with which we establish a dialogue in our theoretical foundation. That, in our evaluation, confirms the commitment of these institutions with social causes and with the progress of society, understood here not in a positivist way, but as the search for social justice. In a similar way, we proceed to the categorization of the 4 other classes of words, from 3 to 6, so that, next, we show the synthesis-layout (Table 2) of this data interpretation, due to the length of our article, in a way to stress the engaging words for the nomination.

Table 2: synthesis-layout for the data categorization.

CLASSES OF WORDS	NOMINATION	ENGAGING WORDS
Class 1	Formation	<i>culture, human, man, meaning, subject, humanity, language, technology, science</i>
Class 2	Technical knowledge	<i>mastery, understanding, concept, totality, polytechnic</i>
Class 3	General characteristics	<i>IF, baiano, modality, course, teaching, medium, regional, young and adult, distance learning, graduation</i>
Class 4	Management	<i>decentralize, institutional evaluation, autonomy, transparency, counsel, administrative</i>
Class 5	Professional profile	<i>ethics, respect, citizenship, acting, egalitarian, fair</i>
Class 6	Premises	<i>dialectic, sociology, Marx, materialism, class, capital</i>

Source: Brazil (2024).

We highlight that the last class explicitly refers to the theoretical link with a specific school of thought (historical-dialectic materialism) in the construction of the PPPs of the IFs in Northeast Brazil. Through this category, we can notice a very specific comprehension of the social reality through an explicit reference to this theoretical framework.

At last, also through Correspondence Factor Analysis (CFA), we could materialize the following Cartesian plane (Figure 3). The interpretation of the Cartesian plane, through the factor analysis of the *corpus* and the comparison with the representative color of each of the classes of words (see Figure 2) points to the perception that there is a proximity of certain classes and distancing of others.

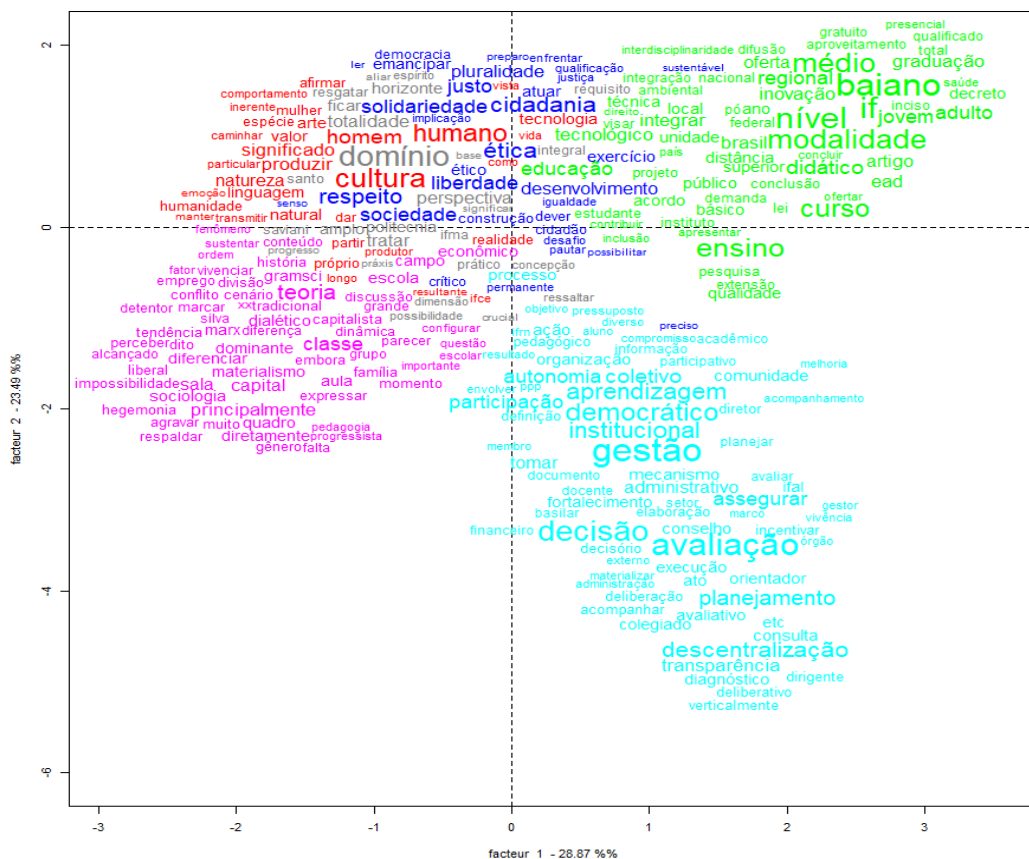


Figure 3: CFA Cartesian plane of word.

The (non) grouping represented in the Cartesian planes enables us the review of the elaboration of the six previously shown categories, underlying to the analyzed PPPs. Thus, we notice that classes 1 (red), 2 (grey) and 5 (dark blue) are linked, being closely placed in the factor analysis, forming one cluster. Thus, we deduce that a broader category, titled *Formation for the appropriation of technical knowledge and professional profile*. This social mission, reflected by our

analysis, cannot lose sight of the already highlighted other categories, in other words, it is fundamental to observe that this institutional mission is dialectically related to specific and explicit theories and practices, namely: i) Marxian premises (class 6, pink); ii) decentralized and transparent management (class 4, light blue); offer of diverse educational modes – secondary, young and adult, undergraduate, distance learning (class 3, green).

5 FINAL CONSIDERATIONS

Considering the rupture in the Brazilian social structure, also evidenced in education, characterized by the offer of knowledge for the elites and another type of knowledge for the working class, the IFs are currently presented as the main counter-hegemonic group of teaching institutions that aim to guide their practices from premises committed to a process of overcoming the historical duality of education. This way, through the analysis proposed in this work, it was possible to better understand what the concept of education of the IFs located in Northeast Brazil is, through the clarification of its social and institutional mission presented in the official document – PPP. The lexical and statistical analyses provided by IRAMUTEQ points to us aspects that reaffirm the alignment of the educational practices that the IFs aim to implement when basing themselves in the concepts of polytechnics, omni laterality and integral human formation.

We stress, however, that we defend IFs in which there is the proximity between the theory present in the documents and the pedagogical and administrative practice of their educators. This way, as a note for future research, we believe that it is possible to perform more analysis of institutional documents in the other regions of the country, as well as to verify how the concept of education is being materialized in the classrooms of the IFs located throughout Brazil.

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