

Professional and technological education under capital circuits: analytical demarcations of the contributions of federal governments

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Ailton Batista de Albuquerque Juniorⁱ

Universidade Federal de Uberlândia (UFU), Uberlândia, MG, Brasil

Maria Célia Borgesⁱⁱ

Universidade Federal de Uberlândia (UFU), Uberlândia, MG, Brasil

Ana Claudia Uchoa Araújoⁱⁱⁱ

Universidade Federal do Ceará (UFC), Fortaleza, CE, Brasil

Abstract

Professional and Technological Education (PTE) is a theme that is designed as an educational modality provided for in the Law of Guidelines and Bases of National Education (LDB) 9,394/1996, with the main purpose of preparing subjects for the exercise of professions, contributing to so that they can be inserted into society and work in the job market. In these terms, the present study aims to highlight the contributions of PTE to the *omnilateral* training of subjects, understanding its gaps and proposing alternatives to overcome the current state. Concerning the methodology, we applied bibliographic and explanatory research, regarding technical procedures, with a qualitative approach. Finally, we argue that, at the same time, the implications of neoliberalism permeate the public policies adopted in the PTE, leading to the adoption of an agenda that leads, above all, to the labor market.

Keywords: Neoliberalism. Job market. Professional and Technological Education.

Educação profissional e tecnológica sob os circuitos do capital: demarcações analíticas das contribuições dos governos federais

Resumo

A Educação Profissional e Tecnológica (EPT) é um tema que se desenha como uma modalidade educacional prevista na Lei de Diretrizes e Bases da Educação Nacional (LDB) 9.394/1996, com a principal finalidade de preparar os sujeitos para o exercício das profissões, colaborando para que eles possam ser inseridos na vida em sociedade e atuar no mercado de trabalho. Nesses termos, o presente estudo tem como objetivo realizar o apontamento das contribuições da EPT para a formação *omnilateral* dos sujeitos, conhecendo suas lacunas e propondo alternativas para a superação do estado atual. Concernente à metodologia, utilizamos a pesquisa bibliográfica e a descritiva, com abordagem qualitativa. Quanto aos resultados da pesquisa, sustentamos que, contemporaneamente, as implicações do neoliberalismo atravessam as políticas públicas adotadas na EPT, resultando na adoção de uma agenda que conduz, sobretudo, ao mercado de trabalho.

Palavras-chave: Neoliberalismo. Mercado de trabalho. Educação Profissional e Tecnológica.

1 Introduction

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Currently, the topic of Professional and Technological Education (PTE) has been intensely discussed in the educational field, verifying the training of its students, the quality of the courses, the relationship between education and work in the formulation of curricula, the quality criteria used as a reference, the forms of financing and the training of teachers who teach in the courses offered, in addition to the short, medium and long-term goals for this type of education listed in the National Education Plans (PNE) as established in Law No. 13.005/2014 (Afonso; Gonzalez, 2015). In this context, this article aims to discuss the contributions of PTE to the omnilateral education of individuals, proposing alternatives to improve the current situation.

The relevance of approaching such an investigation lies in the fact that professional and technological education is integrated with the different levels and modalities of education, as well as the dimensions of work, science and technology, with the aim of leading to the permanent development of skills for productive life (Lorenzet; Andreolla; Paludo, 2020). In addition, the subject is extremely pertinent today, especially in the context of the expansion and privatization of national education.

The justification for carrying out this study lies in the fact that PTE is a viable alternative for social, political and cultural development and advancement, as indeed it should be in the formal educational sphere. Consequently, we live in an unequal society and we believe that this type of education emerges in this context as a possibility of shortening the distances, for example, between social classes, in an attempt to reduce these inequalities.

With regard to the challenges faced, we conjecture that one of them is the lack of qualification of professionals working in this area, given that this is a teaching modality that demands new skills and poses new challenges to teaching practice.

We infer some difficulties when working with diversity in the face of technology, since teachers need to articulate their educational knowledge and practices to the diverse realities they encounter. This is especially relevant when thinking about PTE via distance learning, a current and pertinent issue for investigation. From this perspective, the guiding question and/or research problem arises: what are the contributions of governments in the process of making PTE viable for all segments of society?

We think it would be interesting to take advantage of what is positive in each pedagogical current, synthesizing and reviewing our conceptions about the phenomena that involve the teaching-learning process. With regard to the pedagogical praxis of PTE, the challenges cross a multiplicity of contexts that must be interpreted, understood, applied and/or revised. In this way, its propositions provide food for thought so that we can review the traditional and exclusionary practices present in our educational system.

2 Methodology

As for the methodological approach, we used qualitative research, which is characterized by a set of different interpretative techniques, seeking to describe a complex system that cannot just be translated into numbers. This type of research seeks to translate intrinsic aspects of social phenomena (Maanen, 1979).

In terms of objectives, this research is descriptive because it aims to identify the factors that determined or contributed to the erosion of social rights in the period in question. Therefore, according to Gil's (2022) analytical approach, it is a more complex and delicate type of investigation, deepening knowledge of reality and explaining the reasons and whys of things.

With regard to technical procedures, we used bibliographical research, since Gil (2022) points out that its main advantage lies in the possibility for the academic

researcher to cover a plurality of phenomena, with greater breadth than that which deals with data directly asked of the subjects.

3 Results and Discussion

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In a country with a vehemently exclusionary capitalist system such as Brazil, based on high social debt, perhaps economic or global development plans, including the PNE, cannot play a decisive role in adjusting configurations, even if they do produce and alter some issues (Calazans, 2011).

Current public policies for professional and technological education are biased by the neoliberal ideology. They have therefore carried this ideology since the 1990s here in Brazil. Consequently, its characteristics are engendered in competitiveness, profitability, productivity and privatization. From this angle, Silva (2012) points to this ideology as a strategy for a broad process of global redefinition of the social, economic and political spheres, severely modifying all areas of human life in response to the capitalist arrangement.

Professional and Technological Education (PTE) has undergone various reforms under different influences and contexts throughout history. Affected by contradictory visions and interests, technical and vocational training has reverberated in multiple spheres, marked by objectives, conceptions and proposals that sometimes converge and sometimes diverge with the proletariat. It emerged with the aim of training the poor and disadvantaged, based on the demands of the labor market (Azevedo; Coan, 2013). In short, this type of education aims to contribute to Brazil's social, political and economic development.

Incidentally, in a class society involved in the reproduction and deepening of the division, fragmentation and specialization of labour, the viability of technical training prevailed for a long time, with training programmes designed to prepare the working classes to work in low-complexity, low-paid trades. This reflects a proposal for technician, fragmented and pragmatic professional education, aimed at training

precarious, flexible labor that is vulnerable to exploitation and unemployment (Oliveira; Frigotto, 2022). In view of this, Kuenzer (2006, p. 907) points out that:

In capitalist society, in which social and productive relations are produced with the primary purpose of valorizing capital, there is no inclusion that does not meet this logic, just as there is no possibility of autonomous pedagogical practices; only contradictory ones, whose direction depends on the political choices that define the projects, their funding and their forms of management.

In view of the above, we infer that, under the logic of bourgeois accumulation, capitalism operates by producing a subjectivity compatible with its rationality. It follows that neoliberalism is not just an ideology or economic policy, but part of a normative system, extending its influence worldwide and permeating all spheres of social life with economic logic (Dardot; Laval, 2016).

In view of the above, this scenario advocates a model of education engendered in business parameters, given that all educational establishments can be adapted to mercantile and commercial language, through market logic, employing mercantile techniques in the acquisition of clients, segregating individuals (Laval, 2004).

In these terms, the corporate reform of education is emerging, reverberating in social Darwinism (Freitas, 2018). This is due to the erosion of public school values, giving way to the presence of private and competitive values, with Brazil taking on the role of standardizing public education on a global scale, through common national curricula, assessed by large-scale tests and accountability.

In 1994, then-president Itamar Franco instituted the National Technological Education System, by means of Law No. 8948/1994, with the aim of establishing a link between technological education at its various levels and the various educational institutions included in the National Education Policy. The aim was to improve teaching, extension and technological research, linking the general and productive sectors of society (Araújo; Nicácio; Oliveira, 2021). The Agrotechnical Schools, which were part of this system, could then be transformed into Federal Technological Education

Centers (CEFETs) after a performance evaluation process developed under the coordination of the Ministry of Education (MEC).

In an attempt to reduce the state's involvement in professional education, the FHC government created Law No. 9.649/1998, removing the responsibility for creating and maintaining new technical schools from the federal government and transferring this burden to the states and municipalities. It is therefore a measure that considers reducing federal government spending, as recommended in Bresser Pereira's Master Plan for Reforming the State Apparatus.

With the 2002 elections, the progressive social forces that elected the Lula government hoped for fruitful transformations in the societal projects of the 1990s. However, according to Frigotto (2006), a (wrong) path was signaled before he took office, when candidate Lula signed the Letter to Brazilians, expressing his commitment to maintaining the neoliberal policy underway, which came from international organizations. Thus, neoliberalism presents policies to reduce the state that were formulated and thought up by intellectuals linked to the market and put into practice by conservative politicians. These policies have found support and advocates in the multilateral bodies to which the text refers.

Despite continuing the public policies of the FHC government, the context of the Lula administration differed in many ways, especially with regard to programs and policies aimed at the underprivileged classes (Sala; Brancatti, 2017). With this in mind, the Lula government issued Decree No. 5.154/2004, combining the efforts of education, labor and employment, science and technology, resuming the trend of integrated training by moving towards overcoming the duality between general education and vocational training (Saviani, 2008).

Decree No. 5.154/2004 gave professional education a new arrangement, dividing it into initial and continuing training (FIC) for workers, technical professional education at secondary level and undergraduate and postgraduate technological professional education (Brasil, 2004). In this context, the three forms of integration provided for in this legal system reveal the conciliatory nature of the Lula government's

policies, which tried to harmonize the multiplicity of interests of the different social classes and political-ideological groups (Caires; Oliveira; 2016).

Incidentally, the development of PTE policies under the FHC government were directly related to the market, focusing on economic pragmatism that advocated technical and light educational training, disconnected from humanistic and polytechnic training, and reducing the curriculum with a view to possible employability.

Since governments are responsible for implementing public policies, these public policies stem from the needs of society. There are public policies that are government policies and others that are state policies, in other words, institutionalized policies such as PTE. Therefore, Oliveira (2011) points out that government policies are those that the Executive, in the role of Mayor, Governor or President of the Republic, decides are feasible, while state policies involve more than one state agency, usually going through the National Congress, which votes on them and turns them into law. Thus, government policies tend to be provisional, coming into effect during the term of a given government, while state policies are very long-lasting, as they remain in place even after the change of power.

The state is responsible for the economy and national development, which is reflected in education, especially vocational education, as it suffers interference from international economic funding bodies such as the World Bank (WB), the International Monetary Fund (IMF), the International Development Bank (IDB), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the United Nations Development Program (UNDP). These interferences brought to light the economic and financial interests of businessmen and industrialists who had and still have an interest in the demands of the productive sector (Frigotto; Ciavatta, 2002; Ortigara; Ganzeli, 2013).

Strictly speaking, in terms of the specific nature of capitalist social relations in Brazil, it can be seen that the ruling class is made up of a confluence of the old agrarian oligarchies and the current segments of industry and services. These classes have never set out to build an autonomous and sovereign nation through universal, quality

education, focused on scientific production and the political and cultural training of young people (Florestan Fernandes, 2020).

During Luiz Inácio Lula da Silva's first term in office (2003-2006), the government introduced Decree No. 5.154/2004 and the Factory School project, proposing to link education policies with other development policies. In the meantime, vocational education is seen in a compensatory guise, aimed at the unfortunate, unveiling educational policy under the aegis of neoliberal thinking and meeting the demands of capitalist production (Araújo; Nicácio; Oliveira, 2021).

Frigotto, Ciavatta and Ramos (2005) point out that Decree No. 5.154/2004 was expected to guarantee a plurality of actions, mobilizing civil society to defend unitary and polytechnic secondary education, integrating the professionalization of the principles of science, work and culture. Decrees 5.154/2004 and 5.225/2004 authorized the Federal Technological Education Centres (CEFETs) to achieve university status. However, this legislation did not resolve the historical impasse of integrated secondary education, i.e. the realization of a holistic curriculum capable of training students in a multiplicity of areas.

With this in mind, Machado (1989) describes integrated education as a fertile path for transforming and overcoming class society. Thus, even though integrated secondary education does not have the same polytechnic training proposal, it is clear that there is a profound link between the two.

With regard to the Dilma government, we note that it was responsible for implementing the National Program for Access to Technical Education and Employment (PRONATEC), enacted through Law No. 12,513 on October 26, 2011. In view of the above, Saviani (2018) considers that, during Dilma Rousseff's first term, this was the most significant program related to PTE, becoming the flagship of the Professional and Technological Education programs promoted by the Workers' Party in this new administration.

PRONATEC is characterized as a turning point in the field of PTE, since even though it was established for the expansion, internalization and democratization of the

offer of professional education courses, its expansion was mainly based on the offer of short-term initial and continuing training courses (FIC) and concurrent high school technical courses (i.e. taking technical training subjects at one institution while doing high school at another institution) (Vasconcelos; Amorim, 2018).

In short, this policy has encouraged the proposal for integrated secondary education to be watered down, including by encouraging the promotion of PTE in private educational institutions, with the so-called S system (SENAR, SENAC, SESC, SENAI, SESI, SEST, SENAT, SEBRAE and SESCOOP). These corporate entities do not promote integrated courses, as they only offer professional training, social assistance, consultancy, research and technical assistance to citizens.

According to Freire (1993), when we set out to educate, we are playing a predominantly political role. In this logic, categories such as ethics, citizenship, politics, work and survival conditions must be dealt with in comprehensive education, meeting the demands of the students. Therefore, these themes are benchmarks of popular education which, through dialog, seeks to recover the humanity of workers, often stolen by the capitalist logic that places them as merchandise.

If, on the one hand, PTE is part of the dual school, aimed at the working class, with the objective of training labor to meet the needs of the labor market, on the other hand, it does have an inclusive function and brings benefits to society. At this juncture, PTE must militate for the social inclusion of subjects through work, overcoming the paradigms of exclusion and exploitation that plague contemporary education based on neoliberalism. Furthermore, according to Frigotto's (2018) analysis, in education it is important to value experiences, previous knowledge and experiences of reality, revealing work as the articulating axis of the curriculum, encouraging autonomy and not the subordination of individuals.

In view of his comments, I would point out Cortella (2014) when he recognizes the need to overcome the original meaning of the term work - *tripalium* (characterized as a wooden instrument used for sacrifices and torture), transforming it into *poiésis* based on the possibility of freedom as the fruit of the soul to develop creative activities.

In relation to the educational institutions of the federal network, it is of great importance that their employees are attentive to ethical principles, ensuring the construction of democratic values inside and outside educational establishments (Viva, 2018).

Thus, for PTE to be a humanized process, it must focus on work in a broader way, to the detriment of the reductionism of the functional aspect. In this way, it is important to realize the dialectical condition of the worker who, when inserted into the environment, transforms and is transformed by it (Manacorda, 1990).

Throughout Brazilian history, there have been many vicissitudes in relation to educational processes, and various models have emerged. From primary education as an education for work, generally aimed at the lower classes, to higher scientific education offered to the upper layers of the socio-economic pyramid. In summary, we point out that education has served different purposes throughout history. In these terms, we pose the guiding question: which of the two masters does PTE serve in contemporary times? Capital or labor?

In order to engage in a dialogue with their propositions, we emphasize the perspective of Freire (1993), who recognizes education as a process of awareness-raising for the transformation of oppressive situations, in the form of liberation and emancipation of the subjects. From this perspective, can contemporary PTE fulfill this purpose?

According to Araújo (2021), the state also began to use regulatory instruments in PTE, intensifying this modality from the threshold of the 21st century, correlating with the number of vacancies on offer and expansion.

We can see that both work and education can have a double face, serving both to create and destroy life. In this context, knowledge and science must not only be practical, usable and profitable in order to be efficient for capital. An education carried out only in the technical sphere declines from the model of social commitment, revealing the supremacy of economic aspects to the detriment of social principles (Frigotto, 2018).

3.1 Challenges in professional and technological education

In relation to the Brazilian context, we have noted that, since the beginning of PTE, there has been a classist and welfare configuration reserved for a specific public. That is, the less fortunate, made up of the underclass who live on the margins of society, including people with disabilities.

The lack of effective public investment is still a problem in public education, especially at state level, since financial resources are less available than in federal schools.

We see the difference between training, which is an activity capable of transforming itself into pedagogical praxis, and training, which is something punctual and diffuse, perhaps due to its short duration. In short, public authorities need to think about initial and continuing training curricula that meet the educational demands of PTE.

Teacher training for this type of PTE is still a major issue, hence the need for ongoing training such as this, which aims to provide theoretical-methodological, technical-operational and ethical-political support for a competently mediated teaching-learning process.

Even when opening these technical courses, educational institutions should pay more attention to the choice of training areas, to avoid creating an industrial reserve army, training people who will not work due to the lack of a market for these professionals.

We can see that the "Deschooling of Vocational Education" is characterized by the possibility of recognizing knowledge and validating work experience to certify non-school activities, replacing the workload of the training itinerary in high school and certifying as formal education those skills and competencies acquired outside of school (Piolli; Sala, 2021). This category is somewhat controversial, and a critical analysis of the inconsistencies and gaps surrounding this object is in order.

The PTE has indeed brought and continues to bring many contributions to the world of education. However, there are still challenges to be overcome in the curricular sphere, due to the predominance of a hegemonically technicist perspective, disregarding the various competences and skills as an organic-progressive set of essential knowledge that all students must develop during secondary technical education.

Roughly speaking, each teacher must be a protagonist in the formation of thinking, critical and creative subjects, teaching them to act with autonomy, a sense of responsibility, flexibility, resilience and determination, as well as encouraging decision-making based on ethical, aesthetic, democratic, humane, inclusive, sustainable and solidarity principles.

By the way, teachers' work must follow models of ethical, inclusive and democratic behavior, which are essential for students' education. In this context, teachers contribute with their pedagogical praxis to building a fertile educational environment, valuing integrity, honesty and mutual respect (Azevedo; Sanches, 2024).

Strictly speaking, we have detected profound social vicissitudes in recent years, requiring significant changes in educational praxis, concerning professional and technological education. In this respect, we recognize a series of factors that have led to these changes, such as: globalization, which has readjusted the world to neoliberal demands; technological advances, through the introduction of computers, cell phones, the internet and robotics; and the enormous increase in competitiveness and reconfigurations in the world of work in the face of new organizational expectations. In short, PTE is marked by well-defined historical moments, crossing barriers and surviving between rancor, advances, setbacks, adjustments and resizing.

With regard to Professional and Technological Education in Brazil, we believe that it emerged as a new possibility to offer free, quality education as a right won by the Brazilian nation. As for the challenges of teaching in PTE in Brazil, we highlight the unequal starting point of students, as well as socio-economic and educational issues experienced in previous years.

We reiterate the relevance of the inclusion of Professional and Technological Education in Brazilian education, with the search for professional qualifications for young people and adults becoming essential, given that the demand for professionals who are truly qualified to carry out certain activities has grown in the country.

We believe that, as a country evolves both scientifically and economically, it is expected that its population will also evolve in various aspects, especially intellectually. However, this is not an easy task; it requires investment, dedication and a lot of commitment on the part of governments and society in general.

At the same time, unemployment rates in Brazil are still high, at 8.76%, affecting approximately 92 million people across the country (Nogueira, 2022). However, we cannot underestimate the importance of this form of education, which is so rich and brings hope to people and to the country's development.

In this context, we believe that the greatest difficulties currently facing the country are the lack of financial investment and commitment to education in general. The 2024 National Education Conference (Conae) reaffirmed the need to invest 10% of GDP in education, as opposed to the current 5.4%. However, the elite and representatives of capital immediately disqualified the proposal (Grabowski, 2024).

In fact, the Federal Network for Professional, Scientific and Technological Education is a set of educational institutions with origins dating back to the last century, with the Artisan Apprentice Schools, fostered by Decree No. 7,566 of September 23, 1909. In view of this, Michels and Ritter (2024) maintain that these institutions, in their conventional practice, unconsciously reproduce the structure of conceptions based on social inequalities. Therefore, in order to fulfill their social mission, it is urgent to understand these mechanisms multidimensionally, readjusting pedagogical processes towards a critical and reflective praxis.

Law No. 11.892, of December 29, 2008, created the Federal Institutes of Education, Science and Technology (IFs), presenting the country with a new educational architecture. These spaces contain new arrangements in their institutionality, contemplating the connection between Higher Education, Basic

Education and Professional Education. They are structured on a multi-curricular basis in multiple campuses, committed to the verticalization of teaching, crossed by research and extension, with a focus on local and regional development (Lorenzet; Andreolla; Paludo, 2020). From this perspective, the investments made in this type of education are unparalleled and unprecedented in the history of Professional and Technological Education in Brazil.

Based on Pacheco (2010), any pedagogical reconstruction must be in tune with social, economic and cultural demands, respecting social diversity and environmental preservation, based on ethics and care with socio-environmental responsibility. Despite this, with these characteristics, we can point out that the PTE, since 2008, from its new institutionality, has emerged as a possibility of breaking with this logic due to the social role of the institution, adding the possibility of an integral and omnilateral education through the general and technical training of individuals, breaking paradigms of segmentarism. Previously, those without financial resources were directed only to technical learning to put into practice at work, while the wealthy received a scientific education, aiming for higher-level positions (Araújo *et al.*, 2024). Lorenzet, Andreolla and Paludo (2020, p. 13) summarize that:

The purpose of education, from a liberating and emancipating perspective, is to contribute to the transformation of society by training individuals who are capable of critically reflecting on the world in which they live and of taking part in transformative processes, collectively and intentionally, because they know their role. And finally, Professional and Technological Education needs to include technical and political instrumentalization, qualifying for the world of work and for life, seeking as its main principle the construction of a just society.

In other words, Gramsci (1982) circumscribes the need to overcome the division between *Homo faber* and *Homo sapiens* by seeking to permanently rescue the symbiotic relationship between education and work. This implies promoting the completeness of freedom, allowing individuals to emancipate themselves through an omnilateral education of totality, that is, a polytechnic/technological and disalienating education, with class consciousness.

4 Conclusions

We believe it is pertinent to mention that Professional and Technological Education (PTE), like Special Education, has historically been marked by classist, welfare and exclusionary orientations. The history of PTE in Brazil is crossed by a multiplicity of theoretical and political tensions, reflecting the societal transformations experienced. It has favored educational dualism between general training for the exercise of citizenship and technical-vocational training for the job market, the latter of which also has social value.

We can see that vocational education is an excellent investment for Brazilian industry, given that vocational education invests in economic growth, creating many opportunities for employment and income, i.e. making sure that people can fit in and act prepared to exercise their profession. Therefore, this educational context has a teaching modality with the aim of developing competencies and skills for the demands that the job market proposes. Therefore, this level of education has come to be known as the industrial revolution, with a view to providing professional qualifications, based on the needs of the production sector, reverberating in the growth of this industry and envisioning an economic capitalism of great Brazilian evolution.

The complexity of combining technology with professional education is well known, as we live in a technological system where our teenagers and children are surrounded by laptops and cell phones. To improve this generation, we need to add a routine that prioritizes education alongside technology. It is necessary to face various challenges, which requires a lot of interactivity and even a dynamic form of teaching.

There are also the various constant updates in the technological world, and we must deal with these changes and adapt to the new in order to constantly evolve. There are also the applications of the right tools, which must be used properly and take advantage of their benefits.

By the way, our study has highlighted reflections on the policies adopted in PTE, embodied in the neoliberal influences adopted in Brazil. We concluded that this ideological manifestation is still present today, adopting packages of strategies to spread market conduct.

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ⁱ **Ailton Batista de Albuquerque Junior (Roinuj Tamborindeguy)** , ORCID:

<https://orcid.org/0009-0001-2372-4568>

Doutorando em Educação (UFU). Mestrando em Educação Profissional e Tecnológica (IFES/IFCE). Mestre em Avaliação de Políticas Públicas (UFC). Participa do Laboratório de Análise de Políticas e Gestão da Educação (LAPGE).

Authorship contribution: Writing - First draft.

Lattes: <https://lattes.cnpq.br/4472063040972745>

E-mail: pedagogo.uece@hotmail.com

ⁱⁱ **Maria Célia Borges**, ORCID: <https://orcid.org/0000-0002-5445-023X>

Pós-doutora em Educação (FEUSP). Mestre (UFU) e Doutora (PUCSP) em Educação. Professora do Mestrado e Doutorado em Educação, na Universidade Federal de Uberlândia (UFU) - Linha Estado, Políticas e Gestão em Educação.

Authorship contribution: Project Management

Lattes: <https://lattes.cnpq.br/4472063040972745>

E-mail: marcelbor@gmail.com

ⁱⁱⁱ **Ana Cláudia Uchoa Araújo**, ORCID: <https://orcid.org/0000-0002-1377-6540>

Pós-Doutora em Educação (UFC). Doutora em Educação (UFC). Mestre em Educação (UFC). Pedagoga do Instituto Federal do Ceará, atuando como Pró-Reitora de Extensão. Participa do Grupo de Pesquisa em Formação Docente Digital.

Authorship contribution: Writing - Proofreading and Editing

Lattes: <https://lattes.cnpq.br/4472063040972745>

E-mail: ana@ifce.edu.br

Responsible publisher: Genifer Andrade

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