

Characterization of teachers' professional insertion in professional, scientific and technological education: A literature analysis

Talles Viana Demos^{1*} and Fábio Peres Gonçalves²

¹Instituto Federal de Educação, Ciência e Tecnologia de Santa Catarina, Rua José Lino Kretzer, 608, 88130-310, São José, Santa Catarina, Brasil.

²Universidade Federal de Santa Catarina, Florianópolis, Santa Catarina, Brasil. *Author for correspondence. E-mail: talles.demos@ifsc.edu.br

ABSTRACT. Professional, scientific, and technological education (PSTE) is being expanded in Brazil and other countries. Therefore, part of the research has been dedicated to understanding different facets of this process, which also involves teaching in this education modality. In this scenario, we present a study whose objective was to characterize —from a mapping of works— results and conclusions about the entrance and the first years of teaching in PSTE. To identify the works, the following sources of information were used: the indexers Directory of Open Access Journals (DOAJ), Dialnet, *Red de Revistas Científicas de América Latina y el Caribe, España y Portugal* (Redalyc), Scientific Electronic Library Online (SciELO), and *Portal de Periódicos* of the *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* (CAPES); the *Catálogo de Teses e Dissertações* of CAPES; proceedings of the *Congreso Internacional sobre Profesores Principiantes e Inducción a la Docencia*. The papers located were submitted to textual discourse analysis. The analysis indicated that the period of insertion is marked by the formative needs of entrants in the PSTE, by influences of educational contexts in proposals for professional teacher insertion in PSTE, and by pedagogically grounded formative experiences of professional teacher insertion. Broader institutional formative experiences result in more resistance from teachers to participate. We highlight the influence of institutional pedagogical coordination in the experiences of insertion in PSTE and its approximation to the mentor/tutor figure described in the literature about novice teachers and professional insertion.

Keywords: teacher education; period of teachers' professional insertion; novice teacher; professional.

Caracterização da inserção de docentes na educação profissional, científica e tecnológica: Uma análise da literatura

RESUMO. Ocorre, no Brasil e em outros países uma expansão da educação profissional, científica e tecnológica (EPCT) e, como consequência, parte da pesquisa tem-se dedicado a compreender diferentes facetas deste processo, que envolve inclusive a docência nessa modalidade de educação. Diante deste cenário, apresenta-se um estudo cujo objetivo foi caracterizar —a partir de um mapeamento de trabalhos— resultados e conclusões sobre o ingresso e os primeiros anos de docência na EPCT. Para identificar os trabalhos, utilizaram-se, como fontes de informações: os indexadores *Directory of Open Access Journals* (DOAJ), *Dialnet*, *Red de Revistas Científicas de América Latina y el Caribe, España y Portugal* (Redalyc), *Scientific Electronic Library Online* (SciELO) e *Portal de Periódicos* da *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* (CAPES); o *Catálogo de Teses e Dissertações* da CAPES; anais do *Congreso Internacional sobre Profesores Principiantes e Inducción a la Docencia*. Os trabalhos localizados foram submetidos a procedimentos da análise textual discursiva. A análise indicou que o período de inserção é marcado por necessidades formativas de docentes ingressantes na EPCT, por influências de contextos educacionais em propostas de inserção profissional docente na EPCT e por experiências formativas de inserção profissional docente fundamentadas pedagogicamente. Experiências formativas institucionais mais amplas acabam encontrando maior resistência docente de participação. Destaca-se a influência da coordenação pedagógica institucional nas experiências de inserção na EPCT e sua aproximação à figura do mentor/tutor descrita na literatura sobre professores iniciantes e inserção profissional docente.

Palavras-chave: formação docente; período de inserção profissional docente; professores iniciantes.

Caracterización de la inserción profesional docente en la educación profesional, científica y tecnológica: Un análisis de la literatura

RESUMEN. En Brasil y en otros países se está produciendo una expansión de la educación profesional, científica y tecnológica (EPCT). En consecuencia, una parte de la investigación se ha dedicado a comprender diferentes facetas de este proceso, que también implica la enseñanza en esta modalidad de educación. En este escenario, presentamos un estudio cuyo objetivo fue caracterizar —a partir de un mapeo de trabajos— resultados y conclusiones sobre el ingreso y los primeros años de enseñanza en la EPCT. Para la identificación de los trabajos se utilizaron las siguientes fuentes de información: los indexadores *Directory of Open Access Journals (DOAJ)*, *Dialnet*, Red de Revistas Científicas de América Latina y el Caribe, España y Portugal (Redalyc), *Scientific Electronic Library Online (Scielo)* y *Portal de Periódicos* de la *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES)*; el *Catálogo de Teses e Dissertações* de la CAPES; actas del Congreso Internacional sobre Profesores Principiantes e Inducción a la Docencia. Los trabajos localizados se sometieron a procedimientos de Análisis Textual del Discurso. El análisis indicó que el período de inserción está marcado por las necesidades formativas de los profesores que ingresan en la EPCT, por las influencias de los contextos educativos en las propuestas de inserción profesional docente en la EPCT y por las experiencias formativas de inserción profesional docente basadas en la pedagogía. Las experiencias formativas institucionales más amplias acaban encontrando más resistencia de los profesores a participar. Se destaca la influencia de la coordinación pedagógica institucional en las experiencias de inserción en la EPCT y su acercamiento a la figura del mentor/tutor descrita en la literatura sobre profesores principiantes e inserción profesional docente.

Palabras-clave: formación de profesores; período de inserción profesional docente; profesores principiantes.

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Introduction

The period of professional teaching insertion is a phase marked by the search for the identity process, teacher socialization, and the enculturation of institutional objectives (Huberman, 1993; Garcia, 1999; 2010; Day, 2001; Imbernón, 2009; Pimenta & Anastasiou, 2014). Worldwide, research and public policies focused on this period are gaining momentum as some countries —such as Chile, Mexico, and Peru— face problems associated with the high rate of teachers leaving the teaching profession in the first years of the profession, the lack of new teachers to be hired in school networks, and the first years as a determining stage for planning the professional development of teachers (Veenman, 1984; Avalos, 2009; Vaillant, 2009; André, 2012; Tardif, 2013; Narváez, Perlaza, & Tardif, 2014; Garcia & Vaillant, 2017). Garcia (2010, p. 18) states that “[...] the vast majority of teachers abandon their profession at the same level at which they began, with few opportunities to advance to positions of responsibility, or even to transfer to other levels of education, without consequent professional development.” On the other hand, as a result of the process of commodification of education (Krawczyk & Vieira, 2010), such issues of teacher professionalization also gain interest from highly profitable teacher education programs, which, however, harm professional autonomy (Imbernón, 2009; Tardif, 2013).

The specialized literature on the subject of the period of professional insertion in teaching is focused on teachers starting their profession and their first years of teaching. However, entry into the teaching profession in professional, scientific, and technological education (PSTE) may be characterized by the presence of professionals with some teaching experience. In these cases, these are new entrants to a PSTE institution and, not infrequently, to the teaching modality. Thus, a new socialization process is triggered, implying specific education needs and professional teaching development, which makes it imperative that we reflect on this period.

Cunha, Braccini, and Feldkercher (2015) identified themes and trends related to¹ novice/beginning teachers' issues based on the analysis of three editions of the *Congreso Internacional sobre Profesorado Principiante e Inserción Profesional a la Docencia* [International Congress on Beginner Professorship and Professional Insertion into Teaching]. Among the authors' considerations about themes and trends regarding novice/beginning teachers, those related to teaching in PSTE are silenced. On the other hand, as suggested by Cunha et al. (2015), other perspectives are necessary for academic production about novice/beginning teachers —as PSTE entrants can be characterized— since there are multiple reading possibilities of the topic under discussion.

¹ In the absence of a specific form for the neuter gender, the grammatical masculine with a neuter value is used in this work. Thus, 'teacher, teachers, student', etc. refer to individuals of any sex/gender.

Similarly, Almeida, Reis, Gomboeff, and André (2020) investigated trends in studies on novice teachers in the context of regular basic education published between 2000 and 2019. The authors identified a significant increase in publications after 2014 and a greater number of publications aimed at the initial years of this modality. However, “few studies present analyses and/or a more in-depth discussion about what is specific about the beginning of teaching in certain areas and segments of education” (Almeida et al., 2020, p. 18). In a complementary manner, Wiebusch (2016), when analyzing Brazilian theses and dissertations published up to 2012 on the period of professional insertion of teachers and beginning teachers, denounces the silencing of these academic contributions regarding the theme in the PSTE context.

Considering the above and literature review studies that express a lack of academic productions on the period of professional insertion, including teaching at PSTE (Mariano, 2006; Papi & Martins, 2010; Davis, 2013; Corrêa & Portella, 2013; Cunha et al., 2015; Wiebusch, 2016; Almeida et al., 2020), this work aimed to characterize, based on a mapping of works, the results and conclusions on entry and the first years of PSTE teaching. Thus, from the PSTE context, it is possible to collaborate to reflect on formative proposals and educational policies aimed at supporting and welcoming teachers during this period (André, 2012), as well as help elucidate themes and paths to increase research related to professional insertion in the first years of PSTE teaching, as also defended by Ferreira and Cruz (2021) and Barreto and Aneleto (2021).

In this research, based on Cruz, Farias, and Hobold (2020), teachers who have recently arrived at PSTE are called “entrants” rather than “novices,” as they are named in the broader literature on novice/beginning teachers. This is done because this work analyzes teachers’ entry into a new institution and/or teaching modality and not necessarily at the beginning of the formal exercise of the profession. Admission as a teacher at PSTE may occur after some teaching experience.

Methodological procedures

The selected sources of work were indexers: Directory of Open Access Journals (DOAJ), Dialnet, Red de Revistas Científicas de América Latina y el Caribe, España y Portugal (RedAlyC) [network of scientific journals], Scientific Electronic Library Online (SciELO) and the Portal de Periódicos da CAPES [journal portal]; CAPES Catálogo de Teses e Dissertações [catalog of theses and dissertations]; and the first five editions (2008 to 2016)² from the proceedings of the Congreso Internacional sobre Profesores Principiantes e Inducción a la Docencia [International Congress on Beginning Teachers and Introduction to Teaching]. The indexers chosen are justified by their recognized international quality, which gives visibility to publications, especially in the Ibero-American context. Furthermore, all the chosen indexers have search systems for articles from indexed journals based on terms. In turn, the *Congreso Internacional de Profesores Principiantes e Inducción a la Docencia* is a specific event on the theme that includes the object of investigation of this article. The CAPES Theses and Dissertations Catalog allows access to Brazilian academic production within the scope of postgraduate programs. We thought it relevant to consider this source of work given the recent expansion of PSTE in Brazil—a country of recognized continental dimensions, which had as a possible consequence the increase in the investigation of phenomena involving PSTE. In Brazil, the PSTE underwent significant changes associated with modifications in the Rede Federal de Educação Profissional, Científica e Tecnológica (RFEPCT) [Federal Network of Professional, Scientific, and Technological Education] brought about by the creation in 2008 of the federal institutes, with verticalized teaching offerings in their modalities and levels of education (Silva, 2017). The creation of FIs led to the hiring of thousands of professionals to take on teaching, sometimes without theoretically based pedagogical training and/or without formal experience as teachers. According to information from the Sinopse Estatística da Educação Básica [Statistical Synopsis of Basic Education - Anísio Teixeira Institute of Educational Studies and Research] (Instituto Nacional de Estudos e Pesquisa Educacionais Anísio Teixeira [INEP], 2021), approximately 35% (more than 43 thousand) of teachers with undergraduate degrees who work in professional education in Brazil are not licensed. This quantitative information highlights the problem of teacher education for professional education (Vieira, Araújo, & Vieira, 2021).

Twelve search terms were chosen to map academic production on the topic: ‘profesor* principiante’; ‘professor* iniciante’; ‘professor* principiante’; ‘professor* iniciante’; ‘novice teacher’; ‘inserção profissional

² It is worth noting that there was another virtual edition of the congress in 2019. However, as the event only published the abstracts of the papers and not the full papers, we decided to remove it from the study, as it did not present sufficient criteria, taken by the other editions, in relation to the procedure for including or excluding papers in the final sample: the complete reading of the paper, to better understand the results obtained. This 2019 edition featured only one paper related to the context of professional, scientific, and technological education, called “A aprendizagem da docência: De estreadores no ofício de ensinar na Educação Profissional e Tecnológica” [Learning to teach: From beginners to the profession of teaching in professional and technological education,] authored by Eloisa Maria Wiebusch, which aimed to investigate the challenges and possibilities faced by novice teachers in PTE.

docente'; *'inserção profissional à docência*'; *'inserção profissional de professores*'; *'inserción a la docencia*'; *'inserción profesional a la docencia*'; *'inducción a la docencia*'; *'inducción profesional a la docencia*'.³

The search terms were selected to support the scope of the research topic in Spanish, Portuguese, and English. The review study was conducted between April and August 2019 and, subsequently, in April 2020 for terms related to professional teaching insertion. For indexers and catalogs of theses and dissertations, via results found in the search engine, we read the titles, abstracts, and keywords to select the works dedicated to the PSTE. We decided not to select terms related to PSTE via search engines since it is a context in the researched theme and, sometimes, its nomenclature is in the plural form. This fact could result in the non-identification of part of the searches.

For the five editions of the international event, the following search terms were used: *'educação profissional e tecnológica*'; *'educação profissional*'; *'educação tecnológica*'; *'ensino profissional e tecnológico*'; *'ensino profissional*'; *'ensino tecnológico*'; *'educação científica e tecnológica*'; *'instituto federal*'; *'institutos federais*'. This source had its own electronic collection, hosted by the University of Seville, and a search engine, where the terms cited in this paragraph were inserted.

During the process of analyzing the results of those academic works, the electronic collection with the works from the editions of the *Congreso Internacional de Profesores Principiantes e Inducción a la Docencia* [International Congress of Beginning Teachers and Induction into Teaching] became unavailable⁴. While available, the collection did not allow us to download these works, meaning the analysis required access. After other attempts to obtain the works, we requested them via email directly from the authors, who kindly collaborated by sending them. Only three of the nine works presented at the event could not be analyzed. Thus, the final sample contains 13 publications: three articles, three dissertations, one thesis, and six complete works published in an academic event. They are, respectively, Mansur, Costa, and Mansur (2011), Pryjma, Schotten, and Baschta Jr. (2012), Barboza and Trevisan (2014), Bonilaure and Resende (2014), Nunes, Zamberlan, Rocha and Isaia (2014), Pryjma, Cunha, Garcia, Wiebusch and Oliveira (2014), Wiebusch (2016), Silva and Souza (2017), Paiva (2017), Schneiders (2017), Barros (2017), Beatriz (2018), and Pena (2018).

The analysis of these works focused on characterizing the results and conclusions/final considerations. For this purpose, we adopted discursive textual analysis (DTA) (Moraes & Galiuzzi, 2016), organizing it in three stages: unitization, categorization, and communication. The papers were read in full, and the results and conclusions were extracted (*corpus*) and submitted to the unitization process, where, from the *corpus*, we take the units of meaning whose analysis relates to the objective of the work. After unitization, the units of meaning were subjected to categorization, which, in DTA, can be *a priori*, emerging, or mixed (a combination of *a priori* and emerging categories). In this work, we chose emerging categories. Given the nature of the DTA, the categories are not mutually exclusive. Furthermore, in DTA:

Categories must have theoretical validity, which can be achieved either by deriving them from *a priori* theories or by gradually constructing them from theorizing itself in a process of deriving emerging categories [...]. In any of the approaches, the issue of validity is central to the categorization process. It is not guaranteed from the beginning but corresponds to a construction process throughout the research process [...] (Moraes & Galiuzzi, 2016, p. 83).

Still on category validation:

The description in qualitative textual analysis is based on the categories constructed during the analysis. To describe is to present the categories and subcategories, substantiating and validating these descriptions based on 'empirical interlocutions or anchoring arguments in information taken from the texts' [...]. This is one of the ways of validating it (Moraes & Galiuzzi, 2016, p. 35, our emphasis).

To state that written productions originating from research need to be validated is to warn that they need to have descriptive capacity, which is guaranteed based on the validity of the categories and arguments constructed. 'This validity concerns the relevance of what is stated in relation to the phenomena investigated, and one of the ways to achieve it is by using the testimonies, speeches, or written expressions of the subjects participating in the research' (Moraes & Galiuzzi, 2016, p. 98-99, our emphasis).

Based on the above, in the constructed metatext, direct citations of works that were submitted to the DTA are explored. Furthermore, the validation of the categories is not given *a priori* and is not built rigidly in a single stage of the DTA. The communication stage itself (the third stage) contributes to this validation. In

³ Search terms may change due to certain variations in the computer language used in the indexers' search engine, such as replacing parentheses or quotation marks. The asterisk is used when you also want to search for derived words. For example, with 'professor', you will search for 'professor', 'professora', 'professorado', 'professores', 'professoras', etc.

⁴ The collection was made available from the following electronic address: <http://congressoprinc.com.br/home#>

communication, textual productions are prepared with an explicitly interpretative character regarding each category with empirical interlocution, duly exploring the citations of the works.

Thus, based on the DTA, the emerging categories' profile and formative needs of teachers entering the PSTE' and 'The nature of formative proposals during professional teaching insertion in the PSTE' were established. Below, the results and discussions for each category resulting from the analysis are explained. Only two studies (Nunes et al., 2014; Beatriz, 2018) analyze PSTE institutions that are not linked to the Brazilian federal PSTE network, one being a state institution and the other of a community nature. Therefore, some reflections highlighted here deserve an understanding of the institutional context of origin, and this finding already indicates a relative silence in publications about other PSTE networks, whether Brazilian or from other countries.

Profile and formative needs of entrants in PSTE

Given the importance of the identity process in teacher education (Pimenta, 2000), we must reflect on why some professionals take on teaching PSTE, signaling, somehow, a profile of the entrants. This profile, in turn, is associated with possible formative needs of teachers due to their professional experience before admission and personal experiences, if any. In particular, among the reasons teachers choose to teach, the career conditions in the Ensino Básico, Técnico e Tecnológico (EBTT) [Basic, Technical, and Technological Education] stand out, in the context of the Brazilian PSTE federal network (Silva & Souza, 2017; Paiva, 2017; Barros, 2017). Here are Paiva's considerations (2017):

[...] Even if they did not have teaching as their first professional choice, novice teachers were decisively influenced by people in their family and friendship circles to enter the teaching career at the Federal Institute of Rio Grande do Norte (IFRN); either because they were already part of the staff of the institution and had given positive references about the work and the teaching career in that environment, or because in the family environment there are or have been good indications about being a teacher (Paiva, 2017, p. 90).

Similar results have already been identified in higher education teachers. Silva and Schnetzler (2005), for example, highlight that university professors in chemistry teaching research also became teachers due to the influence of family members. This may bring, to some extent, the results of research on university teaching closer to those obtained by research on PSTE teachers. The profile of higher education and PSTE teachers may be similar due to similar demands, characterized by teachers who did not necessarily take undergraduate studies to work as teachers. Examples include engineers who start working as teachers. In the case of the Brazilian PSTEFN, on the other hand, some entrants do not necessarily take up the profession because they identify with teaching, as shown in Silva and Souza (2017):

The engineering professors interviewed became teachers due to a combination of happenings that led them to: unemployment, search for professional stability in the public service, opportunity for public examinations to teach at FIs [Federal Institutes], dissatisfaction with work in private companies, among other reasons (Silva & Souza, 2017, p. 211).

Entry into the Brazilian PSTEFN is prioritized by the conditions offered by the public service career (stability, salaries generally more advantageous than those of basic education teachers, etc.). This fact can considerably reduce the dropout rate from teaching at PSTEFN, a concern often highlighted in the specialized literature on professional insertion of teachers and beginning teachers, to justify public policies in other education networks (André, 2012). Similarly, professors seldom abandon a career in university teaching in the Brazilian public network (Pimenta & Anastasiou, 2014). Therefore, it is necessary to advance in reflecting on the conditions of choice and permanence in teaching, which includes discussing the profession's valorization by offering attractive career plans and minimizing the factors associated with abandoning teaching in the initial years of practice.

The entrance into PSTE teaching through the influence of family and friends (Paiva, 2017) is interpreted as a social appreciation of this career through various aspects not necessarily originating from the teaching profession. In this sense, Barros (2017) encourages debate by highlighting that:

[...] 100% of candidates did not mention anyone in their family who had actually chosen a career due to the influence of relatives. In other words, they did not have family members related to the academic world or those who did not mention them as a model (Barros, 2017, p. 123).

We understand that entry into teaching PSTE presents plural influences. Therefore, research on this topic should evaluate the relevance of these influences for entry, permanence, and professional development in PSTE.

The hiring of unlicensed teachers or those with a technologist degree (even if scarce) can be interpreted as a condition for PSTE (Machado, 2011; Silva & Constantino, 2021; Barreiro & Campos, 2021), given the nature of the courses (which usually require professionals qualified in engineering) and the lack of discussions about teaching and learning in certain areas, which appears in the results of some analyzed works:

[...] Even without seeking to investigate only beginning unlicensed teachers, they outnumber licensed teachers by six times (Paiva, 2017, p. 78).

Data revealed that the teachers of technical courses who teach in the ten educational institutions that offer vocational education in Ponta Grossa (PR) are mostly unlicensed graduates (Beatriz, 2018, p. 141).

Thus, we had the following scenario regarding initial education: seven engineers (areas: computing, forestry, agronomy, and environmental), three graduates (sic) (areas: architecture and urbanism, product design, computer science), five technologists (areas: interior design, mechanics, data processing and information technology (sic) and two licensed graduates (areas of physics and Portuguese language) (Bonilaure & Resende, 2014, p. 27).

According to the analyzed works, there is, particularly in specific contexts, significant hiring of unlicensed graduates to the detriment of licensed professionals and technologists (Barboza & Trevisan, 2014; Bonilaure & Resende, 2014; Silva & Souza, 2017; Paiva, 2017; Barros, 2017; Pena, 2018). However, according to information already highlighted, the number of teachers with a teaching degree in professional education is greater than that of unlicensed professionals (Brazil, 2021). On the other hand, Moraes (2016), using the Federal Institute of Education, Science, and Technology of Santa Catarina as the setting for his study, points out that, from the 2000s onwards, the percentage of teachers coming from technical courses in a given area (without higher education) and/or with experience in the professional market decreased considerably in that institution.

Another aspect to be highlighted regarding the profile of teachers who enter teaching at PSTE is that they, whether unlicensed, technologists, or licensed, often have previous teaching experience (Bonilaure & Resende, 2014; Schneiders, 2017; Pena, 2018). Therefore, the profile of a PSTE entrant differs from that of a beginning or novice teacher regarding the transition from academic to professional life. In turn, this will lead to differences in how these professionals react to the challenge of surviving the profession and how they reflect on theoretical constructs of their pedagogical education and professional teaching experience (Veenman, 1984; Huberman, 1993; Garcia, 2010). Pena's work (2018) addresses new students' teaching experience:

[...] 89% of teachers had work experience before joining the institution as a teacher, with 71% having experience as a teacher and only 19% as a professional in their field of education. Of the 71%, 85% had experience as a higher-education teacher, and only 26% in professional and technological education (Pena, 2017, p. 10).

Given the teaching profile explained so far, it is unsurprising that some new entrants know the teaching profession superficially in PSTE. These are understandings that can be constructed tacitly based on the inheritance of customs, beliefs, and experiences from their school and professional life, as highlighted in Schneiders (2017), Silva e Souza (2017), and Beatriz (2018). Beatriz (2018), in particular, highlights:

According to the reports of the pedagogy graduates participating in the research, novice and unlicensed teachers enter the classroom with their worldviews and experiences from their school days as students. It reproduces learning through observation, which is not a prerequisite for teaching. This way, teaching action occurs through memories, attempts, successes, and errors (Beatriz, 2018, p. 145).

Some unlicensed teachers who join the PSTE have a master's and/or a PhD. Therefore, during the period of professional insertion in PSTE, they may be influenced by the experiences in teaching practicums taken in their *stricto sensu* postgraduate courses. In Brazil, this practicum is a requirement of funding agencies for postgraduate students who receive scholarships (Brasil, 2010b). Thus, entrants not only bring "the worldview and experiences from their time as students at school," as proposed by Beatriz (2018); they also can be characterized by the experiences of the teaching practicum and customs originating from that period. Those experiences and customs, due to their poorly theoretically founded nature, can help professional insertion in the PSTE to come closer to the survival period described by Huberman (1993), when referring to the professional insertion of those people who move from academic to professional life. In this scenario, the sector of the PSTE institutions responsible for organizing and promoting education processes for entrants (often called pedagogical coordination), in general, is discredited by some of those teachers "[...] because there is a disbelief in the activity provided by pedagogy professionals" (Barros, 2017, p. 143). The pedagogy professionals that Barros (2017) refers to are often the employees responsible for organizing the formative

processes of the pedagogical coordinators. Among PSTE teachers, the understanding of learning to teach through practice stands out.

In short, a culture of pedagogical denial in PSTE can be understood, in part, by the considerable number of professionals who take on teaching with shallow, theoretically based pedagogical formation. Such lack of education may favor teaching behavior to reproduce actions arising from their own school experiences, professional education, and previous teaching experience —when they have it. This is what broader literature calls “[...] practice as an imitation of models” (Pimenta & Lima, 2004). However, simply overcoming practice as an imitation of models is insufficient to address the problem under discussion, as this may imply an approach to other harmful understandings, such as the one that conceives practice as mere technical instrumentalization. It should be noted that these considerations do not intend to disqualify any education or professional profile prior to entry.

According to the identified works (Silva & Souza, 2017; Pena, 2018; Barros, 2017; Beatriz, 2018; Schneiders, 2017; Barboza & Trevisan, 2014; Paiva, 2017; Nunes et al., 2014; Bonilaure & Resende, 2014; Mansur et al., 2011), the lack of pedagogical education and resistance shows that there are challenges to be overcome and that guide particular formative needs. The following are the considerations of Barros (2017) and Nunes et al. (2014):

The lack of knowledge of the scope of teaching makes the beginning teacher understand pedagogical education as a course that should only improve their classroom teaching methods, not understanding it as a decisive moment to qualify a professional to act in teaching as a whole, covering not only the classroom floor but in a larger scope, due to the lack of knowledge of the various activities that come from the teaching profession (Barros, 2017, p. 144).

[...] many teachers resisted (and still resist) to participate in a continuing education program; most are unlicensed professionals whose initial choice was not teaching. Thus, upon entering these spaces, they sought to undertake pedagogical education more due to a legal requirement than the intention of building knowledge related to their current professional teaching practice (Nunes et al., 2014, p. 65).

From the above, it is possible to interpret that the resistance of some entrants to pedagogical education is related to their own profile, as explored in previous paragraphs. Research on university teaching has demonstrated similar results for a long time (Bazzo, 2007). It is possible to interpret that such similarity may be related precisely to the formative profile of university professors and current entrants to PSTE, especially in Brazil, as highlighted by Moraes (2016). The need for a permanent and broad process of pedagogical education is also highlighted as a need to be addressed institutionally.

In the Brazilian PSTE, challenges arise from management positions assumed during the period of entry, sometimes conditioned by the context of the expansion of the PSTEFN via FIs (Barros, 2017); formative needs regarding the verticalization of teaching, curriculum integration, the relationship between school and the labor market (Pena, 2018); associations between curriculum, work, and PSTE, integration between courses and combating dropout (Bonilaure & Resende, 2014). These are considerations from some works:

In more than half of those interviewed, 11 teachers already had a rewarding role at some point in their career at the institute, and of these, nine have been or are course coordinators. [...] Of the nine teachers who were or are course coordinators, only two have pedagogical education in their curriculum. In other words, a significant number of novice teachers, at the beginning of their career or education as teachers (including right after entering the career), have already taken on coordination positions without specific training to work in the pedagogical field (Barros, 2017, p. 128-130).

For the category ‘Specific aspects of professional and technological education,’ three themes were considered priorities, tied at 18%. Verticalization of teaching; Education of students for the world of work; Organization of teaching and academic standards of the [FI campus]. As a second priority, 26% of teachers considered the theme: Diversity in the profile of students in different types of courses/levels of education (Pena, 2018, p. 12).

At meeting 1, we discussed measures to combat dropout, such as: monitoring students with difficulties, controlling absent students and making schedules more flexible to reconcile studies and work, in the case of working students. [...] In meeting 27, teachers presented difficulties faced in implementing a collective pedagogical project: lack of time, lack of teacher experience, excess of classes, lack of planning, difficulty in changing paradigms, and student immaturity. As possible solutions, the following are cited: integration between subjects, time reorganization, replanning, adaptation of language in the classroom, knowing how to deal with heterogeneity and emphasis on teacher education (Bonilaure & Resende, 2014, p. 31-35).

According to Pena (2018) and Bonilaure and Resende (2014), it is worth highlighting the importance of research in context to identify teachers’ difficulties and formative needs since they are constructed by the

institutional context and the professional trajectory of new entrants, intending to face local educational challenges. Such needs arose in this way and were worked on in a collective and investigative manner by a group of teachers, pedagogy graduates, and other interested parties based on professional insertion programs via campus (Bonilaure & Resende, 2014).

Some works highlight the hierarchy of knowledge for teaching activities by new unlicensed teachers. There is a preponderance of knowledge from professional experience, practical knowledge, and specific knowledge for the teaching subject⁵ (Silva & Souza, 2017; Paiva, 2017; Barros, 2017; Beatriz, 2018). The last priority is pedagogical knowledge related to the teaching profession:

The teachers in our research also give great importance to practical knowledge; that is, they substantially value the knowledge acquired through practical work experiences in the company or even the knowledge acquired of this type of work, which constitutes the possible field of action for their students. In the interviewees' speech, the valorization of their practical experiences in the field of the subjects in which they work for the performance of teaching was almost unanimous: of the 14 subjects of our research, only one did not refer directly to this type of knowledge, and all the others when alluding to this knowledge, gave it great relevance. For most of these subjects, this professional experience is a *sine qua non* condition for being good PTE teachers (Paiva, 2017, p. 110).

The difficulties faced by both novice teachers and pedagogy graduates in professional education modality were raised when the overvaluation of technical knowledge to the detriment of pedagogical knowledge was mentioned [...] (Beatriz, 2018, p. 145).

However, we consider that the professional experience of the engineering professor, despite bringing benefits to the institution, cannot be seen as a *sine qua non* condition for the smooth running of a class. There are other alternatives for 'bringing a bit of industry' into the classroom, such as research project agreements with regional and national companies. Other options are case study methodologies and project-based approaches, for example (Silva & Souza, 2017, p. 2010).

However, something to be highlighted is a certain incorporation, by new teachers, of knowledge and experience of academic research at the postgraduate level as technical knowledge. According to Barros (2017),

Such as in higher education and being perpetuated as a legacy mainly in professional technical education, as its teachers were qualified in higher education institutions where pedagogical education was no longer valued, 'there is still a belief that the important thing is technical improvement, whether it be through practice in the world of work (even though many teachers do not have it, but value it) or through postgraduate studies (research) which is much more recognized than pedagogical education, seen as a minor act and merely a pro forma fulfillment (Barros, 2017, p. 142-143, our emphasis).

If previously there was an overvaluation of specific content and technical experience originating from the professional market, Barros' (2017) results seem to show another way in which the academic research culture adheres to PSTE and, in theory, corroborate the change in the teaching profile of PSTEFN exposed by Moraes (2016). Therefore, based on these results, it is possible to reflect on a certain transformation of the impasse between technical knowledge and pedagogical knowledge in teacher education within PSTE (Wiebusch, 2016; Nunes et al., 2014). In the Brazilian case, to which the works discussed here mostly refer, many unlicensed professionals with experience in postgraduate research —hired via public competition for the network expansion process— move away from teaching (some neglect it) and the particularities it assumes in the PSTE. University customs enter the century-old socio-historical process of PSTE in Brazil and end up impacting, in the medium and long term, the identity transformation planned for PSTEFN, for example (Machado, 2008; Silva, 2009; Pacheco, 2010; Brasil, 2010a; Ramos, 2014). This deserves to be considered in the planning and development of formative processes for PSTE entrants. In a way, this problem is compounded by others that the education of teachers working in PSTE has faced for some time: a teaching profile that understands teaching as an activity limited to the classroom, which does not include or understand research and extension as educational and professionalizing acts (Machado, 2008); a dichotomy between theory and practice, which seems to be hardening and not becoming more complex (Morin, 2000).

Although working at different levels and modalities of teaching is a differential condition (not exclusive) of PSTE teaching, only two studies were concerned, to some extent, with investigating teachers' understanding of this condition. In Schneiders (2017), the teachers who are the subjects of the research do

⁵ Based on the category 'teaching knowledge' proposed by Lee S. Shulman (1987), relating to the knowledge required for teaching a subject matter. In chemistry, for example, this would be knowledge (theories, phenomena, concepts, models, and laws) that are specific to this area of knowledge and do not necessarily have a direct relationship with school chemical knowledge. We understand it as that chemical knowledge constructed by the community of chemists.

not perceive this condition as a problem but rather as something natural and challenging. Therefore, the investigated teachers do not share the understanding that working at different levels and modalities of teaching implies specific formative needs. Even with this contribution to the topic, there are doubts about how much this expresses consensus on the period of entry into the PSTE, given that most teachers were licensed and half of the sample had teaching experience. Another factor that reinforces this issue as worthy of research is that the profile of the teachers in the study (most of whom were licensed) did not represent the general teaching profile of the institution. This finding also generated some surprise on the part of the author, who expected “[...] to find testimonies pointing out this particularity, as a challenge to their practice, because some teachers are starting their teaching careers [...]” (Schneiders, 2017, p. 135).

Pena (2018, p. 12) points out the formative needs of new teachers related to specific aspects of PSTE, such as “[...] diversity in the profile of students in different types of courses/levels of education.” Therefore, given the results of this work, this issue is highlighted as a promising path for prospective research on the specificities during the period of professional teaching insertion in the PSTE and conditions for professional teaching development.

The overvaluation of teaching experience was another characteristic highlighted by the analyzed works. According to Paiva (2017), newcomers consider that the classroom experience could fill ‘gaps’ and obstacles encountered. Beatriz (2018, p. 145) claims that “[...] teaching action occurs through memories, attempts, successes, and errors.” Barros (2017, p. 125) states that teachers consider that teaching becomes easier as time goes by, and “[...] they do not relate the search for a technique or specificity to the pedagogical subject, but to the coexistence over time with students and other teachers.” These results identified by Barros (2017), Paiva (2017), and Beatriz (2018) are close to those notoriously socialized by research on teacher education, which, in turn, contributes to the problems of professional insertion of PSTE teachers being in line with those that go beyond it.

We infer, from what has been exposed in this category, that the theoretical contributions of the literature about novice and beginning teachers may be little explored in the discussion about the PSTE entrants because, in general, new teachers are not characterized by what the literature exposes as the period of professional insertion of beginners. This may be because some professionals have had experience as teachers before joining the PSTE, and their entrance does not constitute a transition from academic to professional life, as is often discussed in the literature on the period of professional insertion in teaching.

The nature of formative proposals during the period of professional teaching insertion in PSTE

According to studies that focus on formative proposals associated with the period of professional teaching insertion in the PSTE (Bonilaure & Resende, 2014; Pryjma et al., 2014; Schneiders, 2017; Pena, 2018), they would need to consider those professionals’ working context to impact on the institutional and professional teaching development. Here is an example of a discussion regarding this aspect:

The research achieved its main objective, which was to construct indicators and subsidies for elaborating a professional teaching development program for the institution [campus]. These indicators can be seen as assumptions that can guide managers in implementing such a program to enable reflection based on and anchored in real practice and contextualized in the challenges of the institution: continuing education actions based on the diagnosis of the formative needs presented by teachers, subjects of this education; that enable reflections on practical and real situations to contribute to the continuing teacher professional development, specifically regarding didactic-pedagogical issues; that consider the reality of the institution, characterized by the verticalization of teaching, which brings challenges related to the organization of the curriculum and the profile of students at different levels of education, among other aspects; that have an institutional and not a one-off nature, so that it is a planned and executed action, in the medium and long term, and evaluated jointly with the teachers involved (Pena, 2018, p. 15).

According to Pena (2018), a diagnosis of the school context, the teaching profile of entry, and the establishment of formative needs are important characteristics in proposals for insertion in PSTE. In turn, Schneiders (2017) uses the local context and the formative needs of new entrants to propose elements that assist the pedagogical support sector in professional insertion proposals:

[...] We revisit demands and characteristics related to teaching, the performance of the SAP [Setor de Apoio Pedagógico] [Pedagogical Support Sector], personal satisfaction of teachers and TAEs [técnico-administrativos em educação] [technical-administrative staff in education], as well as ‘a set of characteristic aspects of the

organizational context that integrate and condition the professional activity of novice teachers of the' [campus]. The signaling of such demands was understood positively since the 'routinization of work is fossilized in standardized forms of action, in repetitive behaviors, formal attitudes, mechanical gestures' (Tardif & Lessard, 2005, p.168-169), which, on the one hand, allow stability in the work of teachers, and, on the other, can be generators of tension (Schneiders, 2017, p. 176, our emphasis).

In this type of proposition, teachers' place in understanding the contents/themes of the formative process deserves to be the object of reflection and their active role in the process. Otherwise, one can move towards the assumptions of technical rationality. Thus, the teaching context and its formative needs will not be reduced to a slogan for a supposed deposit of knowledge in teachers entering PSTE. Bonilaure and Resende (2014) describe the influence of the campus context and the characteristics of entrants on the construction of a formative proposal linked to professional insertion:

This beginning [of the campus] was marked by all the challenges typical of an institution in the implementation phase. The lack of resources was an obstacle to actions and proposals. However, the possibilities were available to the new team being formed (Bonilaure & Resende, 2014, p. 26).

There are also different areas of education and life stories to consider (many are from out of town, having changed professions and residences). The group's heterogeneity is an important point to be considered in the process (Bonilaure & Resende, 2014, p. 28).

Therefore, in the influence of the context on proposals for professional teaching insertion, the personal, professional, and institutional dimensions are articulated. It is important to take the formative experiences with these characteristics as research objects to understand their contributions to professional teacher development.

In those proposals that involve educational contexts of a broad institutional nature, teachers who did not initially choose teaching as a profession resist participating in continuing education programs (Nunes et al., 2014). Barboza and Trevisan (2014, p. 7) point out that "[...] constant questions from teaching staff about the need for mandatory participation in the PPC [Período de Planejamento e Capacitação] [Planning and Formative Period] led to the resizing of activities." Such resistance affects institutional and professional teaching development. Added to this are some dilemmas linked to the institution's current situation (in the case of the PSTEFN, the expansion, for example), which conditions specific formats for the development of these proposals (course format and reflective dynamics):

For new teachers, the PPCs now also include two other moments. The first moment, of an administrative nature, occurs when all the directors, coordinators, and staff of the DEPED [Departamento de Educação] [Department of Education] introduce themselves, highlighting the activities of each sector, the ongoing projects (teaching, research, extension), and the presentation of the institutional video and a retrospective of the campus and its expansion plan. The second moment, considered pedagogical support, consists of the academic system workshop, which includes the presentation of the program, access to teaching plans, attendance diaries, and filling out the teaching activities report. This is the moment when the DEPED team seeks to bring these newcomers closer to a more pedagogical discussion (Barboza & Trevisan, 2014, p. 7).

We can state that these broader experiences of professional insertion are also carried out and organized by professionals from education sectors and who generally occupy management positions (Pryjma et al., 2012; Barboza & Trevisan, 2014). Below are examples of this discussion in the literature analyzed:

The actions of the [department], in the adaptation processes with the new employees and students, bring the technical team closer to the teachers, and, from this meeting, new research links are formed, where the pedagogy graduate of the [nucleus], in an attempt to get closer to the groups of teachers in the technical areas, becomes part of the research groups in teacher education in technical and technological education, in literature and history, ergonomics and its applications in clothing and design pedagogy (Barboza & Trevisan, 2014, p. 9).

Firstly, the teacher educators are constantly concerned with carrying out new projects and continuing education courses for the professionals, now teachers, who have taken part in the program, given that they consider that they have only just begun the formative processes and that there is a lot to learn and improve in relation to teaching work. Secondly, teacher educators consider that educating professionals allows them to develop professionally as teachers, creating a new professional culture. [...] The exchange of experience, in this sense, becomes a process that aims at the involvement and commitment of teachers in relation to the program, students, and learning (Pryjma et al., 2012, p. 7).

The role of those responsible for developing the formative process for newly hired teachers is similar to that found in the literature regarding tutor/mentor teachers responsible for monitoring novice teachers

(Roldão & Leite, 2012). On the other hand, we interpret that involvement with research on the challenges entrants to teaching face should also be a learning opportunity for them. Research as a formative principle has been discussed for a long time (Maldaner, 2000; Galiazzi, 2003) and does not necessarily need to be a privilege for teacher educators, on the contrary. Recent literature provides examples (Coelho et al., 2017; Gonçalves, Silveira, & Piaia, 2021) of research between teacher educators and teachers (in basic education or in initial education), suggesting the possibility of a path that can be built between PSTE entrants and the teacher educators who supervise them in professional integration processes. On the other hand, Schneiders (2017) and Nunes et al. (2014) report a lack of systematization of institutional policies for entry into the teaching profession and other problems that hinder the professional development of teachers entering the PSTE.

[...] There is nothing systematized in favor of welcoming teachers who start on campus (sic), and the initial contact with the SAP [Pedagogical Support Sector] occurs in different ways, which made some teachers positively characterize this moment and others, with reservations, through reports informing that they did not receive any guidance from the sector (Schneiders, 2017, p. 189).

[...] Each campus has and develops a specific formative program in a way that is disconnected from the whole. There is a lack of a strategy to welcome and engage teachers in this [...] entry into the teaching career [...] (Nunes et al., 2014, p. 65-66).

André (2012) states that the definition of public policies and insertion programs for the period of professional insertion is necessary to alleviate the challenges encountered in this professional stage. Formative proposals for the insertion period that are not institutionalized —or not institutionally recognized— run the risk of reproducing aspects that, at times, may not represent consensus and, consequently, may disorient the teacher in planning their professional development. In this regard, Barreiro and Campos (2021) note the lack of criteria related to pedagogical education in teacher selection processes for the Brazilian PSTEFN. According to the authors, this lack of criteria can help to understand the randomness of insertion programs.

Mansur et al. (2011), when outlining the formative needs of Angolan teachers at the beginning of their careers, reveal how the political and social contexts of the country's civil war considerably delay educational policies, which results in the search for foreign partnerships for the education of higher education teachers. According to the authors,

[...] those teachers present a typical reality at the beginning of their career, difficulties, and desires that are peculiar to that period, which is intensified because of the social context in which they are inserted, that is, a country that has just emerged from the civil war that so punished all areas and sectors of that location, especially education (Mansur et al., 2011).

The study represents, in addition to the need for constant investment in educational portfolios to face the consequences of war, the experience of international institutional partnerships between PSTE networks (Brazil and Angola) focused on the period of professional insertion. This partnership aimed to qualify Angolan teachers to work in vocational education centers in Angola.

The results of the analyzed literature revealed that it was possible to understand that collective education mediations and proposals to welcome new teachers pedagogically founded can impact the professional development of the teacher educators. They also provide for the sharing of management among teaching staff, among other experiences that promote professional teaching development anchored in the daily situations of each campus and the guiding and normative principles of the PSTE (Bonilaure & Resende, 2014; Pryjma et al., 2014; Nunes et al., 2014; Barboza & Trevisan, 2014; Pena, 2018; Beatriz, 2018).

It is important to highlight formative opportunities for teaching in PSTE that value systematic reflection on the demands that the institutional space offers and decision-making. Teachers can use these formative moments to discuss teaching cases, moving away from understanding the formative process as a task/obligation disconnected from their reality (Bonilaure & Resende, 2014; Nunes et al., 2014; Pena, 2018). In this scenario, the authors add:

The exercise of analyzing practices ended up developing a spirit of professional cooperation and integration within the group [...]. Project proposals involving teachers from different areas began to emerge, and the limits of subjects and the isolated performance of teachers became paradigms to be questioned (Bonilaure & Resende, 2014, p. 37).

The activities were based on problem situations presented to the group, almost always arising from questions from the group itself. Examples: How do we handle assessment by criteria so the student understands and participates?

How do we make the student the protagonist of the educational process? [...] Dialogue and interaction were established around such issues (Bonilaure & Resende, 2014, p. 37).

The Programa Saberes [Knowledge Program] is an ongoing formative process to subsidize and contribute significantly to the professional development of newly hired teachers [...] It is a policy of continuing and systematic education, which relies on the involvement and support of course coordinators, teacher educators, and general coordination, articulating all face-to-face and virtual education activities (Nunes et al., 2014, p. 64).

[...] the Programa Diálogos: desenvolvimento profissional docente [Dialogues Program: teacher vocational development] was conceived and created aimed at the institution's teachers. This program offers lectures, pedagogical workshops, and discussion panels based on the formative needs of teachers in a dialogical and collaborative process (Pena, 2018, p. 16).

Understandably, attention is given to new teachers so that the institution assists their professional development. It is fair to say that the search for a dialogue between formative needs and institutional demands (on campuses or broader ones) seems to be a concern of these proposals highlighted in the literature.

In addition to the above, Bonilaure and Resende (2014) defend the importance of moments of discussion about curriculum, the concept of work and its relationship with the PSTE, proposals for integration between courses, measures to combat dropout, instruments for recording continuous assessment of students, heterogeneity of classes and profile of (new) students, difficulties of students in the classroom, teaching perception regarding student involvement in learning situations, and methodological options in the classroom, among other subjects. The experience shared in the work of Bonilaure and Resende (2014) impacted the valorization of the school space through the exercise of collective reflective practice on the situations experienced by teachers. As the authors explain,

The discourses that generally tend to blame others for school failure have been modified, making self-assessment and consequent change possible. [...] Through reflective action, identity and understanding of the meaning of 'being a teacher' are achieved. When they do this together, they understand each other's importance (Bonilaure & Resende, 2014, p. 36, authors' emphasis).

Thus, Bonilaure and Resende (2014) point out a way to promote formative processes. Pena (2018) highlights that teachers with or without theoretically based pedagogical education may be unaware of the purposes of the pedagogical foundations related to PSTE, which makes the participation of these professionals in formative processes of this nature opportune.

According to the mapping of works developed in this study, such experiences indicate a rapprochement between the role of mentor/tutor of beginning teachers (Garcia, 2010; Garcia & Vaillant, 2017) and the role played by teacher educators from the pedagogical coordination of PSTE institutions. In the works examined, there are relatively successful cases in their purposes regarding proposals for professional insertion mediated by teacher educators from the pedagogical coordination sector of PSTE institutions, and some lack of characterization of the relationship between experienced and novice teachers in the mentoring/tutoring process (Cochran-Smith & Lytle, 1999). Valuing collective reflection stands out:

This scenario has led to institutional initiatives for continuing education through pedagogical advisors who, in turn, are also demanding education and support to fulfill their functions. The understanding of education in these spaces has sought to get close to the idea of professional development that values individuals' knowledge and collective reflection to achieve the objectives of teaching professionalism (Pryjma et al., 2014, p. 6).

The social nature of the reflection necessary for teaching has been highlighted in the literature on teacher education. For example, Zeichner (2008) goes beyond the discussion about the social dimension of reflection as a collective and not purely solitary process by indicating that this reflection can contemplate social and political aspects of educational practices and not simply those of a technical nature, which also characterize teaching and learning processes.

In short, such formative experiences aimed at the period of professional insertion in PSTE have a pedagogical basis associated with facing the characterized problems. The formative experiences were characterized as those in small groups and of a broad institutional nature. From the above, we infer that it is necessary to reflect on the scope of these processes and their theoretical-methodological foundations and possible contributions arising from their development. There is extensive literature on teacher education and teachers' professional integration of teachers that can support these formative processes and help interpret and transform them. Particularly in relation to the literature on the professional integration of teachers, this

still seems to have its contributions, paradoxically, being modestly considered in the planning and development of formative processes aimed at teachers entering the PSTE.

Final considerations

The silencing of professional teaching insertion in PSTE (Cunha et al., 2015; Wiebusch, 2016; Almeida et al., 2020) contrasts with what is exposed in the present study. The number of works that constitute the corpus of this study and the nature of its research problems show that the theme of teacher insertion in PSTE has received some attention from researchers. In this sense, there is a contribution to the general theme of professional teaching insertion since it delved into discussions more specific to the context of the PSTE.

The theoretical contributions in the literature about beginning and novice teachers may be little explored in the discussion about new teachers in the PSTE because, in general, entrants are not characterized by what the literature exposes as a period of professional insertion and/or beginning teachers (Cruz et al., 2020) and the formative proposals, when offered, end up apart from these references.

In Brazil, the percentage of unlicensed teachers hired for PSTE is considerable —as already highlighted, approximately 35% of teachers are in this situation. The percentage of non-licensed teachers with *stricto sensu* postgraduate education is also high —currently, around 28% of teachers have a master's or a PhD degree (Instituto Nacional de Estudos e Pesquisa Educacionais Anísio Teixeira [INEP], 2021). Therefore, it is not surprising that there is a certain similarity between the profile of teachers entering PSTE and higher education. Therefore, the results discussed here, in part, resemble those of references on the professional development of higher education teachers (Pimenta & Anastasiou, 2014). This approach may be related to the thesis defended by Moraes (2016) that some PSTEFN institutions live in the confrontation of an identity of “technical school” with a desire to be a university.

This study contributes to the reflection on the need for a permanent and broad process of pedagogical education aimed at supporting and welcoming new teachers in PSTE. Some studies present a diagnosis of specific formative needs that corroborate challenges already highlighted by the literature on teacher education in other contexts, such as pedagogical negligence, overvaluation of experience, and technical knowledge. However, incorporating academic research knowledge and experiences as technical knowledge is noteworthy, given the high number of unlicensed professionals entering teaching with a master's and/or a PhD degree.

The discussion about the lack of pedagogical education and/or education to teach at PSTE is not intended to disqualify how teachers are hired at these institutions. Nor does it aim to discredit teaching degree courses, which mostly do not pay attention to the specificities of a given context —in this case, the PSTE. However, it helps us discuss and justify formative practices for the insertion of new teachers who enter the institution to promote conditions for professional development based on personal, professional, and institutional particularities, that is, to take contextual situations as a guideline. Respect for this context can guide the institution's autonomy, focusing on the purposes and goals of the PSTE. Attention to teachers' individual and collective formative needs does not exclude or detract from broader institutional formative proposals at the time of admission. Thus, there is a need to implement more defined institutional policies in order to combat the challenges arising from this professional stage (André, 2012).

The nature of formative proposals presented in the analyzed literature expresses progress regarding the prevalence of moments of collective discussions for dialogue between formative needs and institutional demands. It is possible to see similarities with the mentor figure (Roldão & Leite, 2012). However, in the context of the PSTE, this role has been played by members of the pedagogical support sector who, collectively with teachers, seem to distort the hierarchical relationship between the new teacher and the one who has been at the institution for longer (Cochran-Smith & Lytle, 1999). In this sense, in part of these formative proposals, it is possible to express a specific relationship with what Pimenta and Anastasiou (2014) call institutional organization, which is absent in the context of university teaching. Nevertheless, it is worth highlighting: “Productions that focus on the potential of support, education, and monitoring actions promoted by managers, pedagogical coordinators, and education networks are still incipient” (Almeida et al., 2020, p. 14).

New teachers resist mandatory formative experiences, especially those who do not have pedagogical education and who may consider them merely a ‘bureaucratic task.’ According to Pimenta and Anastasiou (2014, p. 110), such proposals could work with voluntary adherence since “[...] changes are not made by decrees.” The results indicated that, to some extent, formative experiences that start from local realities and

the daily teaching activities of those entering the profession can generate outcomes that contribute to teachers' professional development.

These experiences, which favor collective and theoretically based reflection on teaching activity (Bonilaure & Resende, 2014; Nunes et al., 2014; Barboza & Trevisan, 2014; Pena, 2018), suggest the possibility of professional teaching development that can mitigate the effects of both the lack of pedagogical education and the lack of knowledge of the context of PSTE on the part of new teachers, even the licensed ones. In a recent study, Barreto and Anecleto (2021) highlight the excellence of this type of formative experience, whose genesis lies in local educational realities, for the "[...] redefinition of the teacher's work to enable a collaborative understanding of their educational work [...]" (Barreto & Trevisan, 2014, p. 1701).

The discussions held in the first category regarding performance at different levels and modalities suggest that it may be promising to carry out research that seeks to investigate this issue, which is still little explored. Vieira et al. (2021, p. 1621) corroborate the need for a better understanding of this specific PSTE issue by stating that "[...] diversity of courses and student profiles, the demands of professional education, and the purposes of the subjects in the courses [...]" are specificities of teaching in PSTE linked to the verticalization of teaching.

About the "[...] few opportunities for advancement to positions of responsibility, or even transfer to other levels of education [...]" (Garcia, 2010, p. 19) found in the broader literature and which lead to the abandonment of teaching, especially in the initial years of the profession, there is, in the context of the PSTE, an opposite situation in which working at different levels of education and occupying positions of responsibility in the first years of entry do not imply abandonment of teaching. Thus, even if remaining in the profession is also related to a career in public service, it is promising to investigate how these opportunities contribute to professional development in teaching in PSTE.

The inexpressive discussion about the sociopolitical dimension of the PSTE in the analyzed works is worthy of consideration, especially concerning PSTEFN in Brazil, which expanded, undergoing a significant increase in new teachers, and transformed, reformulating its guiding and normative documents (Machado, 2008; Silva, 2009; Pacheco, 2010; Brasil, 2010a; Ramos, 2014). We consider Paiva's (2017) complaint timely regarding the lack of concern for this dimension during professional insertion based on new teachers' narratives and/or interviews. However, given the perception of pedagogical negligence, everything indicates that a significant fraction of new entrants do not seem to see this sociopolitical importance in the training of PSTE students and, above all, as an ethical and political foundation on which teaching is based. This understanding has already been identified by Pimenta and Anastasiou (2014) in the context of university teaching and makes the adoption of competency-based pedagogy in PSTE structures apparent. According to the authors, "[...] competence can mean immediate action, refinement of the individual, and absence of the political, unlike the valorization of knowledge in a situation, through which the teacher constructs knowledge" (Pimenta & Anastasiou, 2014, p. 134).

This absence of a political dimension refers to the new teachers who are the research subjects and not necessarily the authors of the analyzed academic publications. An essential factor in the lack of in-depth analysis of sociopolitical issues related to the PSTE is the lower presence of sociological/philosophical discussions in the curricula of the new teachers' professional education areas than in pedagogy-based courses. It is worth noting that understanding this sociopolitical dimension is a condition *sine qua non* for the perception of teaching as a professional activity of a progressive and democratic nature, which is in line with the guiding documents of the curriculum proposals of some Brazilian PSTE institutions.

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INFORMATION ABOUT THE AUTHORS

Talles Viana Demos: Holds a teaching degree and a bachelor's degree in chemistry from the Federal University of Santa Catarina (UFSC), holds a master's degree, and is a doctoral student in the Scientific and Technological Education Program (PPGECT) at UFSC and a professor at the Federal Institute of Education, Science, and Technology of Santa Catarina — São José Campus.

ORCID: <https://orcid.org/0000-0001-5362-2848>

E-mail: talles.demos@ifsc.edu.br

Fabio Peres Goncalves: Graduated in chemistry from the Federal University of Rio Grande, holds a master's degree and a PhD from PPGECT-UFSC. Associate professor at the Chemistry Department of UFSC.

ORCID: <https://orcid.org/0000-0003-0172-2411>

E-mail: fabio.pg@ufsc.br

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The authors were responsible for data conception, analysis, and interpretation; writing and critical review of the content of the first draft; and approval of the final version to be published.

Editor-Associado responsável:

Maria Terezinha Bellanda Galuch (UEM)

ORCID: <http://> <https://orcid.org/0000-0001-5154-9819>

E-mail: mtbgaluch@uem.br

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Adriana Curti Cantadori de Camargo

Vanêssa Vianna Doveinis