

Investigating Pedagogical Practice as a Key Element in Teacher Educators' Work at the Federal Institutes: From Existing Actions to Desired Actions

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Abstract

This article is the result of post doctoral research, whose objectives were to discuss the contributions of the investigation of pedagogical practice, as a possibility to improve the quality of teaching-learning and Teacher Professional Development (TPD) of teachers educators's (TEs) in undergraduate courses, and to analyze the current conditions for the promotion of TPD, questioning them in the light of the experience of other contexts, with emphasis on the European experiences of the University of Minho, Portugal and the Häme University of Applied Sciences (HAMK), in Finland. In the current case, we will present a cutout, whose objective was to identify the possibilities and challenges for the development of research on pedagogical practice by the trainers, in order to reflect on the actions we have and the ones we want. In this qualitative research, (auto)bio-graphical narrative was used as a research approach, and was collected from teachers who work with teacher education, five of whom were Brazilian teachers. The multiplicity of actions in the tripod, research, and extension in verticalized teaching from high school to graduate school, along with the absence of training, weakens the materiality of educational research. The implementation of study groups can ease the challenges.

Keywords

Pedagogical Research, Teacher Educator, Federal Institute, Teacher Training

1. Introduction

This research has as locus the scenario of a Federal Institute of Education, an institution that is part of the Federal Network of Professional, Scientific and Technological Education (RFEPCT), whose origin lies in the early twentieth century and is focused on the development of Professional and Technological Education (PTE).

In the late 2000s, the Law 11.892/2008 provoked a turnaround in the administrative and pedagogical organization of these institutions, since they were transformed from Federal Centers of Technological Education (CEFETs) into Federal Institutes of Professional, Scientific and Technological Education (IFs), with university status, however, with a unique educational feature in Brazil, because they are the only ones to offer the three levels of education provided by the Law of Directives and Bases (LDB/1996). Thus, the IFs offer professional technical high school education, undergraduate and graduate courses, including initial teacher training courses and special pedagogical training programs, challenging teachers to work with verticalized teaching, developed at all these levels.

In previous studies (Paniago, 2016; Paniago et al., 2018), whose object was the approach to teacher learning and training in and for research in initial teacher education in IFs, we identified the importance of research in the training and teaching practice of future teachers, as well as the influence and marks of teachers educators (TEs) in the learning of future teachers. In the present research, our restlessness is linked to the research practice of the TE of future teachers, believing it is essential to know them, to know about their professional development, their look on the research of pedagogical practice and the challenges faced in their operationalization. According to Flores (2014, 2017), the second author, if we want to understand the contributions of training to the professional learning of the trainees, it is important to ask: “Who are the teacher trainers? How do they see themselves as teachers and how do they see their role as teachers educators? What importance do they attach to teaching and to research on their teaching? [...] (Flores, 2014: p. 226).

In the scenario that involves this object of study, we emphasize that the discussions that defend the need for basic education teachers to develop research on their own practice are neither original nor new, being even well discussed in Brazil since the 1990s, and have relevance in the teacher training process. However, we consider it important to reinforce and extend them to the IFs’ training context, as there are no studies that discuss this issue in their scope; moreover, the teachers of these institutions, for acting in several levels, face, as already announced, a unique situation in the educational processes in Brazil.

Thus, this article is the result of post doctoral research, whose objectives were to discuss the contributions of the research of pedagogical practice, as a possibility to improve the quality of teaching-learning and the Teaching Professional Development (TPD) of the TEs in undergraduate courses, and analyze the current conditions for the promotion of DPD, questioning them in the light of the expe-

rience of other contexts, with emphasis on the European experiences of the University of Minho, Portugal and the Häme University of Applied Sciences (HAMK), in Finland.

By proposing to seek subsidies in the practices of the University of Minho and Faculty of Professional Training for Teachers, HAMK, Finland, our motivation is linked to the work that the TEs develops, both in Portugal and in Finland, with research in training, since, in this discussion, we will emphasize the importance and the need to carry out research that focuses on the teacher's teaching, that is, pedagogical research. In fact, our intention was not to make comparisons between the training practices of the TEs, the IF, locus of research and the teachers from Finland and Portugal, on the contrary, the foreign experiences served as subsidies to (re)think and reflect on ours in order to (re)signify them. For the purposes of this text, we will present only a section of the study carried out, whose objective was to identify the possibilities and challenges for the development of research on pedagogical practice by the TEs, in order to reflect on the actions we have and the ones we want. To this end, the research was conducted by the question: what are the possibilities and challenges for the materiality of the pedagogical research in the praxis of the TEs?

Finally, in the organization of the text, we will initially present our understanding about educational research, from the elucidation of some theoretical contributions; then, we will present the research methodology; and we will finish with the findings, highlighting the possibilities and challenges for the materiality of educational research.

2. The Research of Teaching Practice: Theoretical Contributions

In this brief reflection, we will highlight some theoretical and epistemological contributions about the reflective teacher and researcher movement, as well as signal our understanding of pedagogical research.

We will use theorists that defend the need for basic education teachers to develop research on their own practice, but our idea is to extend it to higher education as well, considering that teachers in FIs, who work in vertical education, from high school, undergraduate and graduate level, including teacher training, need to continuously conduct research on the areas in which they have such a high formative responsibility. Our defense is that TEs also need to investigate their own practice for the qualification of the teaching-learning processes of initial training courses, working conditions and TPD.

According to [Vieira, Flores, and Almeida \(2020: p. 245\)](#), one of the ways of professional development for TEs is to engage in investigative activities of training practices: "by making training the object of research in a mode of self-study, teachers become producers of critical knowledge, which raises their epistemological authority and their professional agency in the processes of understanding and improving the quality of training".

The importance of the research-based teaching profession, as well as the rela-

relationship between research and teaching practice, has grown significantly internationally. For Flores (2018), in several countries, such as France, the Netherlands, Portugal, Finland, and Brazil, it is possible to find a research orientation in training programs, as well as the involvement of future teachers in research projects. For the author, the most paradigmatic example of research-based teacher training is the Finnish model. Also Kansanen (2014) contributes by clarifying that the teacher education system in Finland is research-based, as all programs at different universities develop a process-based approach to integrate these two spheres—research and teaching.

La Velle and Flores (2018) cite the example of other research-based practices, such as Melbourne in Australia and the Social Publishers Foundation, Inc. (<https://www.socialpublishersfoundation.org/kb-browse/education/>), whose goal is to provide educational activities and funding opportunities for practical research and action-research projects to improve social welfare and educational practices in communities around the world. The authors propose a research-based teacher knowledge model for teachers to improve their practice by being both consumers and producers of knowledge. In the form of a cyclical spiral, teachers acquire knowledge from research and transform it through a process of preparation, instruction, evaluation, and reflection in order to improve their practice by re-signifying knowledge.

The theoretical movement advocating research-based training and teachers as reflective and researchers is not new. This movement is anchored mainly in three strands of theoretical sources: one is attributed to Schön (1983), by disseminating the idea of an epistemology of practice from the elements: reflection-on-action, reflection-about-action. For the author, for reflection to have epistemic and theoretical value, with the production of knowledge, this process needs to be accompanied by a systematizing meta-reflection of the learning that has occurred; in this case, the teacher who develops reflection also produces knowledge. Another epistemological strand is attributed to Stenhouse (1987), who defends teaching as an art, and the teacher as an artist, in whose property are deposited the conditions to improve teaching, his art, by experimenting and critically analyzing his actions. Finally, the third theoretical strand, which supports the reflective teacher ideology, is attributed to Dewey. The American educator John Dewey advocated a pragmatic pedagogy, focused on the process, on learning by doing. His ideas greatly influenced the works about the teacher as a reflective practitioner, especially those of Schön (1983).

In the 1990s, this movement, anchored in progressive ideas, such as those of Paulo Freire, whose goals focused on the role of education as a strategy for transformation and social justice, is gaining strength with the adhesion of theorists from various countries, in which we highlight Zeichner (2008a), from the United States; Alarcão (2011), Flores (2016, 2018), Vieira et al., (2013) and Vieira, Flores and Almeida (2020) from Portugal, Kansanen (2014) from Finland; Pimenta (2005), Pimenta and Lima (2017) and André (2006, 2016), Diniz-Pereira (2008), from Brazil.

Diniz-Pereira, along with Zeichner (2008a), organizes a work entitled “Research in Training and Teaching Work”, with the contribution of several authors from different countries, presenting significant contributions on the formative perspective in and for research and the exercise of this activity in the school everyday life. The authors defend the need for teachers to play a political role in their work and point to action research as an alternative, that is, a possibility of social and collective struggle in the school context.

Alarcão (2011), since the 1990s, has been advocating the importance of reflection and research on teachers’ practice and establishes a relationship between reflection, learning and action research: “Action research is a methodology of scientifically supported social intervention and unfolds according to cycles of planning, action, observation, reflection” (Ibid., p.52). In the development process, after understanding the problem, teachers resort first to intervention planning, then to observation; this will generate new concepts, problems, new planning and re-planning, in a spiral perspective of action research.

Also Flores (2016, 2018), Vieira, Flores and Almeida (2020) signal the importance of research in training and pedagogical practice, highlighting the contributions of the practices developed in the supervised curricular internship, after the Bologna ¹Process, for research at the service of practices. For Flores (2018), the new internship model is one of the most innovative in the post-Bologna context of his institution, for enabling future teachers to mobilize different types of knowledge to inform choices and foster the ability to produce new knowledge.

In the same direction, Kansanen (2014), while clarifying that the Finnish model of teacher education is research-based, emphasizes that the curriculum is integrated into practice, and that it takes place through university practice schools (university practice schools), where future teachers carry out teaching practice. For the author, the fact that every university with a teacher education department has university practice schools, where future teachers can familiarize themselves with everyday school life and practice teaching in a supervised way, is a fruitful alternative for the relationship between theory and practice, and research training.

In turn, the Brazilian André (2016) makes a defense about the importance of research for TPD practice. To this end, she problematizes the use of the term teacher researchers, the purposes of the proposal and warns about the importance of intentionality; after all, what is sought with this idea, so as not to run the risk of having only a slogan, a fad, devoid of meaning. Even if problematizing, André (2006, 2016) has been defending the idea of teachers as researchers, pointing out the initial training as a favorable moment to prepare for the exercise of this activity.

Pimenta (2005), since the 2000s, has been advocating the training of reflective teachers. He warns that beyond the fads, the perspective of reflective teachers

¹The Bologna Process stems from the signing of the Bologna Declaration, in 1999, by ministers from 29 European countries, with the primary objective of creating a European space for higher education, as well as providing student and teaching mobility.

and researchers should be configured as a policy to enhance the professional development of teachers and schools. In another work, [Pimenta \(2012\)](#) ensures the importance of research as a formative principle in teaching, which can occur through various studies on the reality of school systems. And, [Pimenta with Lima \(2017\)](#) insist on the importance of teachers developing research on practice and point out the need for theoretical and methodological preparation in training, being the Supervised Curricular Internship one of the training spaces suitable for this purpose.

Thus, based on the reported authors, regardless of the term assigned to the teachers' research activities, whether reflective practice ([Schön, 1983](#)) or action-research ([Alarcão, 2011](#); [Diniz-Pereira & Zeichner, 2008](#)), what we defend is the importance of teachers conducting research on their practice, so we use the term—Research of Pedagogical Practice—a type of research that focuses on the teaching-learning process and all the elements that interfere in this process. For this, we rely on [Vieira et al. \(2013\)](#) and [Vieira \(2015\)](#), when they explain that this type of research needs to be developed with clear objectives and should be at the service of pedagogy and TPD, as well as student development.

In this reflection, when we use the term “Pedagogical Research” or “Research of Pedagogical Praxis”, we are referring to a type of research that, besides having as an object of study the phenomena that involve the teaching-learning process and its intervenients, it is a type of research that can contribute for the IFs' teachers to problematize, analyze, reflect on their praxis, aiming to (re)mean it and articulate it collaboratively to fight for social justice, social, professional, and salary valorization, in order to enable their professional development and the improvement of the teaching-learning process.

3. Methodology

In this qualitative research, registered in the Ethics Committee through the Brazil platform, Opinion no. 3.956.526, the (auto)biographical narrative was the research approach. Narrative research has been widely used in research in the humanities and education. [Clandinin and Connelly \(2011\)](#) explain that this use is justified because, as human beings, we are storytellers, therefore, narratives signal the way we experience and feel the world. The world, in this understanding, is a construction of personal and social stories and teachers, in this context, are also storytellers of others, as well as of their own stories.

By adopting narratives as a research approach, we intend to focus on aspects of teachers' lives, with a view to understanding their practices, their way of knowing, being and teaching, the possibilities for conducting pedagogical research, in short, the way they develop professionally. Among the several possibilities of using narratives, we opted for the narrative interview with five Brazilian teachers, one from each of the undergraduate courses at IF, locus of the research—Biological Sciences, Mathematics, Chemistry and Pedagogy, chosen according to the following criteria: 1) to act as a trainer in undergraduate courses; 2) to have experience

with orientation of Supervised Curricular Internship, Initiation to Teaching Programs² (PIBID) or Pedagogical Residency Program, since, in the curricular component of the internship and in the above-mentioned programs, there is the possibility of developing research in training. Two teachers from the Biology course participated, due to the number of students in this course. The participating teachers will be identified by the T word for Teacher, followed by their training course, as presented in the chart below (**Table 1**).

Table 1. Teachers educators's (TEs) and training.

TP	TP she is 57 years old, has a degree in Pedagogy, and a master's and doctorate in education. Currently, besides working in secondary school and undergraduate courses, she also works on her master's degree in Professional and Technological Education.
TM	Aged 57, she has degrees in Mathematics and Pedagogy, and a Master's in Mathematics Education. She has significant experience in teacher education.
TB1	Aged 35 years, she has an undergraduate and graduate degree in her specific area—Biology. She coordinates and teaches a Master's program in Biology, therefore directing her research to this area.
TB2	He is 39 years old, has an undergraduate and graduate degree in his specific area—Biology. He is currently working as a teacher and coordinator of a Master's program in the area of teaching, which has led him to direct his research to this area.
TQ	At the age of 42, he has a Master's degree in Chemistry teaching. However, his doctorate was in a specific area of Chemistry and he is currently working on a Master's in this area, so his research focuses on the phenomena studied in his doctorate.

Source: researcher.

In light of the global pandemic of COVID-19³ and the resulting requirement for physical isolation, all narratives were collected via Google Meet videoconference interviews, taking one to two hours between dialogue, knowledge sharing, and data collection. All interviews were transcribed and sent to the participants for their review. We believe that collecting narratives face-to-face is valuable, as it enables the sharing of energies, affections, closer contact, and better apprehension of facial expressions, which can help to interpret the narrators' lines. However, the distance collection (online) was also relevant and did not disqualify the research, because it was possible to listen to the participants, analyze the

²Pibid and Residência Pedagógica are teaching initiation programs offered by Capes/Mec, which provide scholarships so that students can be at school to learn to be teachers. Students who are up to the 4th period/semester participate in Pibid, and in Residency, those who are studying from the 5th semester, being considered as an internship.

³In 2020, when we were developing the research, the world was hit overwhelmingly by the COVID-19 pandemic. According to the World Health Organization (WHO), COVID-19 is a disease caused by the SARS-CoV-2 coronavirus, whose clinical condition of patients can range from asymptomatic infections to severe respiratory conditions. The pandemic forced protective measures such as confinement at home, therefore, social isolation, which includes Brazil, Portugal and Finland, countries in which the narratives of teacher trainers were collected.

emotions reflected in their eyes as they talked about their concerns, experiences, and knowledge. In times of pandemic, we felt close to each other and, therefore, there were several shared concerns. One of them, at the end, declared: “gee, it was great talking to you! I felt good to talk to you” (TM); giving voice to the satisfaction of the meeting, breaking the barriers that the physical isolation forced.

4. The Research of the Pedagogic Practice of Ifs Trainers: What We Have and Where We Want to Go

By presenting a selection of this research, with the objective of identifying the possibilities and challenges for the development of research on pedagogical practice by the teachers, in order to reflect on the actions we have to the ones we want, we delineate the information collected as follows: 1) the importance and possibilities of research in the work context of Brazilian teachers; 2) the challenges for conducting research on pedagogical practice.

4.1. Possibilities of Research in the Work Context of Brazilian Trainers

In terms of possibilities, we will elucidate some spaces, formative moments recognized by the TEs that, in addition to providing training in and for research in Licenciatura, encourage them to seek new ways of working for the (re)signification of their praxis through research, namely, the Teaching Initiation Program, the Pedagogical Residency Program (PRP) and the supervised curricular internship guidance. According to the narratives, Pibid and PRP are programs that provide opportunities for the insertion of students from initial training courses into the universe of basic education for diverse learning about teaching. Pibid, as a space that provides research-based training, is recognized by several authors, such as André (2016), Gatti et al. (2019) and we, first author and third author, Paniago & Sarmiento (2017), and second author, Flores (2018), have also found in research that the program enables several possibilities for learning about teaching and training in and for research.

In general, the TEs affirmed the various possibilities of exercising research after participating as supervisors in these programs, as well as in the internship, as they narrated:

Pibid and PRP were moments of opportunity for research practice because we promoted several discussions and the students went to the schools to apply and experience these ideas and projects. In short, we thought, we studied and they applied; then, it was a research, practically, all the students had the opportunity in the Residency to apply new methodologies, evaluate and publish in events (TB).

In the same direction, the TP, elucidating the importance of teachers exercising the relationship between teaching and research, points out the internship and Pibid as moments that encourage TEs and students to research, “In the in-

ternship, in Pibid, there is this relationship between theory and practice. The students are constantly problematizing, trying to make the dialog between theory and practice. So, to orient, we need to research! To search for answers to tacit problems, problems that arise in the daily life of our classroom” (TP).

Teacher TB also recognizes that his participation as a supervisor in these training spaces contributed to his practice as a trainer: “in my case, because I am not from the pedagogical area, it was a limitation at the beginning, because I had never worked on anything related to internship, and nothing about teacher training. As it was a big challenge, I ended up learning a lot, especially in terms of having a more focused look at teacher training” (TB2).

Thus, in general, the narratives of the TEs indicate Pibid, PRP and internship as opportune moments to work with research in training and for them to seek to implement it in their own praxis. In this case, the TEs, who do not have training in the area and develop their applied research, also react and seek to learn more about the issues that involve their pedagogical practice. According to [Gatti et al. \(2014: p. 37\)](#), “many reconsider their own practices and feel stimulated to develop Didactic research. The production of research papers and their reports also bring greater possibilities of publications and participation in scientific events”.

4.2. The Challenges of Conducting Research on Pedagogical Practice

There are several challenges for the operationalization of research on pedagogical practice in the institution that range from the focus of activities, to the availability of time, to the training of the TEs.

To begin with, the TEs denounce that the dispersion of forces and energies in several work fronts, which range from management, research, extension, and teaching activities—from the professionalizing technical high school to graduate studies—causes socioemotional wear and weakens the performance in teaching practices in the undergraduate courses, and the accomplishment of pedagogical research.

As far as time is concerned, a teacher denounces that, due to the dispersion of energies to several different areas, she doesn’t have time to dedicate to the studies that support this kind of research,

Because today I can’t do it. If I stop leaving everything that I am doing, without the support that I have to enter, for me it is very difficult. It is this insecurity that I have. It is not that I don’t want to. What is missing, I don’t know, is institutional incentive? But what incentive? To provide opportunities. But what is the point of providing opportunities if my workload doesn’t allow me to develop them (TB1).

On the other hand, another teacher states that he does not usually investigate his own practice and that, during the courses, he focuses more on the content part, which, according to him, results from the need of more time to dedicate to this type of research, considering that he also works in a Master’s course in a

specific area. Regarding the orientation process, he elucidates that: “ I would need more time to devote to this type of research and help these students to interpret an article, to start understanding what a research methodology in education is and such; the difficulty is there, finally, to devote myself to this type of research” (TQ).

From the point of view of training, TB1 says that, even though she has already worked as a Pibid supervisor and is currently in the PRP, she also works in master’s programs in her specific area of training, which implies the orientation of topics linked to the program, such as the production of research to add to her lattes. Therefore, she is not able to develop research on pedagogical practice,

I don’t work with research on education or teaching. I am involved in another kind of research. I don’t have the training, I don’t have the knowledge to guide a project articulating research and teaching, even though I have a degree. I don’t feel safe. I will work in what I know, only in research in the specific area. I don’t have the background to work in this kind of research in teacher education (TB1).

It is evident that the focus of their research is not teacher education, nor teaching. In the same direction, Teacher TP affirms that, in the Pedagogy course, TEs who are graduated in the area of the course with a Postgraduate degree in education or teaching, besides researching issues involving teaching and education, work with classroom research, orient scientific initiation: “They explore the subject itself, raising questions through case studies, encouraging students to go into the field, to search, to research in order to solve the question proposed by the teacher”; however teachers of specific areas do not usually develop research in the area of education or teaching, nor do they guide internships or scientific initiation students, which may be due, according to her, to the lack of identity with the course and lack of training, considering that many TEs do not have knowledge about pedagogical research, “no one offers what they do not have, and many did their undergraduate studies, specializations, doctorates, in this perspective of researching only a certain subject of their area, giving the answer only there for their research problem, not as an educational practice” (TP).

What the teacher exposes well portrays the situation experienced by many IFs, in which teachers enter the teaching profession in PTE with training in specific areas and with a curriculum filled with bibliographic and technical productions. However, they have no experience with teaching or with pedagogical research, so the focus of their work is on master’s and doctoral programs that prioritize research in specific areas, to the detriment of teaching activities, which weakens the educational processes in undergraduate courses (Paniago & Sarmiento, 2017; Frigotto, 2018).

Now, it is really complex for a teacher educator to research his or her own pedagogical practice or to encourage undergraduate students if they do not have the training and experience to do so. Evidently, their focus will be their specific field of research, in which, besides having ownership of theoretical and metho-

dological knowledge about research, they will produce in the area in which they are working on their master's degree. In this scenario, we must take into account that there are many TEs in the IFs with this profile, which allows us to question the identity of the IFs' undergraduate courses. Are they courses masquerading as bachelor's degrees with training for laboratory research, applied to a specific area? Or courses that contribute to the formation of teachers to develop pedagogical research as a strategy to face complex and ambiguous situations that involve the teaching-learning process, including the pandemic process, such as the one triggered by SARS-CoV-2, in which teachers were forced to break with traditional classroom teaching practices and enter into new practices in the virtual world mediated by technologies?

The lack of training is, therefore, an obstacle to the materiality of pedagogical research by TEs, so we advocate the need to implement training processes. In this direction, the Finnish experience can contribute to us, since, according to [Kansanen \(2014\)](#), to provide research-based teacher education, it is necessary that teachers have specialized knowledge and experience in research.

We must take into account that some of the TEs interviewed already have long experience as Pibid, PRP and internship supervisors, and if they still do not develop pedagogical research, what about the others, who are bachelors with graduate degrees in specific areas and continue to develop their research in these areas? An issue raised by one of the interviewees who has this profile:

If I have no training, how will I help in the formative process, what contribution can I make to the students' internship? If I take some teachers who only have bachelor degrees, how are they going to help the students? If I have this difficulty with the experience of Pibid, Pedagogical Residency, imagine the others. First, they have to have a course, a training to then contribute (TB1).

Thus, in general, even TEs who have experience with teaching immersion programs, such as PRP and Pibid, and recognize these spaces as useful for the practice of pedagogical research, manifest difficulties in its operationalization due to the lack of training and other activities they develop at the various levels of education. This is the case of TEs TQ and TB1, because, despite their experience since 2011 with Pibid and PRP, they do not have a production in the area of teaching, nor do they have scientific initiation orientation that focuses on teaching issues, which deduces that they have, in fact, focused on research in their specific area in view of the master's degrees they work on. It is necessary, therefore, to make choices to maintain the quality of the research, as the teacher explains: "If I start to open up too much too, because I have to follow a profile so that I don't run over and lose the quality of my work" (TB1).

Thus, we could see that there is a diversity of research conceptions and practices on the part of the TEs. As we have already observed ([Paniago & Sarmiento, 2017](#)), this implies questioning what kind of conception of teaching and research underpins the activities guided by the instructors? What epistemological prin-

ciples support this view that can directly interfere in the practices of undergraduates? This poses a challenge for the development of pedagogical research by TEs, as well as for the implementation of research-based initial training processes. In this direction, Flores (2018: p. 632) contributes by alerting that the implementation of a new model of Internship Practice, based on research in his institution, has implied “[...] the coexistence of different conceptions by teachers educators, namely regarding the role of research in the internship.”

Besides the various fronts of teaching performance, the absence of a training that supports the development of pedagogical research, one of the narratives alerts to the complexity of the organization of study groups in the specific area of education and/or teaching: “We become multifunctional, we have to work on more things at the same time, and this ends up disfavoring the formation of groups. So, the profile of the institution does not offer incentive to teaching research” (TQ).

The fact is that the situation exposed is sometimes beyond the control of the TEs, since the central question can be put as follows: what is the time for study groups about issues involving teacher training and teaching action? This is what another trainer reports: “It’s not just resistance, no! It’s because of the organization of schedules, the demands of the work overload! We can’t get together and think about our disciplines in an interdisciplinary way, develop collaborative research! We are the fruit of a very disciplinary training, sometimes even positivist, each one there in his square, each one in his own house” (TP). This, according to TE, challenges the formation of groups:

Wow, how difficult it is for people to work collectively! We have problems that would be much easier to solve if we could work in a collective way. So, the work is very solitary, very individual. There is a lack of collectivity and language, sometimes it seems that we speak different languages, and this is bad both for us teachers and for our students (TP).

Therefore, although the teachers recognize the importance of researching one’s own practice, they warn that, in the current context of the institution’s organization, there is no favorable path for the “teacher to do research on his/her own practice; it should also be considered an important condition, therefore, what we have is perhaps a conceptual weakness [...]” (TQ). In the same direction, LB, while recognizing that it is important to encourage undergraduate students to do research, affirms the need for TEs to have support: “we have to encourage. To encourage, I have to have support. How can I encourage a student if I don’t even know how to conduct this process? What I am having of institutional incentive. I see that it is not having yet. If it is, it’s not much” (TB1, 2020).

Next, TB1 clarifies that his research focuses on his specific area and that a large part of the students under his supervision in undergraduate scientific initiation projects come from Bachelor’s courses.

Most of them have a bachelor’s degree. In this research, I have no way to link what I do with the students in the teacher education part. They are dif-

ferent researches. I don't have one. Only undergraduate. The undergraduate students have already told me this. What am I going to do an initiation course for? To waste my time. These are students that work all day and study at night. They don't have a research profile. They want to finish their degree and enter the classroom (TB1).

As it appears, TB1 accuses that the profile of undergraduate students is not favorable, considering that they lack time and interest in research. By saying that students question: "I will do scientific initiation for what? To waste time?", the ignorance of TE and future teachers about the importance of teaching through research and the importance of teachers researching their own practice is evident. Now, if most of the undergraduate students participate in Pibid and PRP, receiving a scholarship for such, and are immersed in the daily life of the school, then wouldn't it be possible to take advantage of these moments to encourage training in and for research, as already stated by other teachers educators's? This is what we have already observed in previous works (Paniago & Sarmiento, 2017).

Another teacher reports that, in the Biological Sciences course at his campus, several projects have been approved by research funding agencies, and several students participate in Scientific Initiation scholarships with research in the area of Biology; however, research in the area of teaching does not have much visibility. "However, research in the area of teaching does not have much visibility. We don't have much research, due to the history of the institution. In short, there are few people who have work in the area of teaching. Now we are starting to create this habit" (TB2).

The situation exposed allows us to infer that, in fact, the work routine and the absence of training are weakening the work with research in training, as well as the process of research development by the TEs; which means that it is not only the profile of the undergraduate student that contributes to this. We must take into account that the focus of the IFs has always been the training for professional education, and, in this sense, there is a risk of overvaluing teachers trained in these areas, as well as their productions, to the detriment of training for teaching, experience and production in the area of teaching.

This is evident in the voices of teachers, when they denounce that, at the time of hiring, teaching is not the main criterion of analysis, but rather production: "There are professors from the engineering area, from the computer science area who work in the undergraduate courses [...]. The Federal Institute, when hiring a teacher, does not always verify if the person has training" (TQ). The professor goes on to state the importance of, in the act of selection, valuing teachers with training for teaching, in order to strengthen research in this area. "In order to have a valorization of research in teaching, it is important to check this, in the act of hiring. Because, maybe, what is expected of that new enrollment is that it is a person who is going to add with some research, which, most of the time, are bench research, not the research in teacher education, maybe that is the difference" (TQ).

In this scenario, incoming teachers, with their resumes abundant in scientific production in their specific area, are too interested in pure research, to the detriment of teaching and research on teacher education,

The big problem is that most of the teachers who enter through the competitive examinations are not focused on working with a degree course, and often do not have training or experience in teaching. So, the undergraduate degree takes a back seat. The majority of them came in wanting to do their lab, to do their research, and the class comes later. Many are more concerned with the technical subjects, with research in Biology, and think that teaching, the formation of teachers should come second (TB2).

In fact, a teacher with good production, when joining the institution, will contribute to the verticalized teaching process; however, the risk is the overvaluation of one area at the expense of another, weakening, for sure, the teacher training courses, and, in this case, the courses, the vacancies for hiring teachers are a field of disputes, taking advantage of those who already have more time and consolidated graduate programs, as is the case of agrarian areas. When referring to the verticalized teaching process in the IFs, Frigotto (2018) warns that, besides implying an institutionality, it also implies in which modalities, courses, and levels are prioritized.

What we observed throughout the research is that the trends are the most diverse and are defined by the management groups within the political-institutional disputes, by the differences between the areas of the so-called hard sciences in relation to the social sciences and humanities, and by the entry of a large number of young doctors and masters without teaching experience and who wish and struggle to act in research and at the higher level (Frigotto, 2018: p. 139).

As can be seen, in this reasoning, the focus is on the line of research of graduate programs, instead of teaching, or even the experience to work in teaching and research with initial teacher education. Thus, the challenge is to build an identity in initial teacher education courses, which involves the institution's encouragement and motivation of students, as well as credit for research in education and/or teaching, as stated by another trainer:

To strengthen research in the teaching area, it is necessary to stimulate students and teachers. Many think that research in the area of teaching is not research; they think it is research if it is for the laboratory, for the field. So, research in the area of teaching comes in second place (TP2).

Undoubtedly, it is essential that teachers recognize the importance of researching pedagogical practice, both to improve their praxis, to develop professionally, and to encourage future teachers to do research, which implies focusing on this field of research and working collaboratively.

Now, the TEs, by devoting their efforts at various levels, especially to graduate

programs in their specific areas, are unable to focus on the issues of teacher education and teaching, nor are they able to meet for effective studies and discussions on this theme. This, in turn, besides causing professional dissatisfaction, influences the personal life of the teachers and the quality of the initial teacher education offered by the institution.

In this reflection, we have to consider that learning and teaching identity are not built only in the banks of universities and in graduate programs, since it is a process that occurs throughout life. Thus, TEs also need to improve their praxis through a reflective and investigative attitude, in collaboration, as a way to intervene and re(build) new practices. Pimenta (2012) corroborates this aspect, by announcing that the knowledge is reworked and reconstructed through the confrontation of experiences, in the collective process of sharing, so that teachers, from a reflection in practice and on the practice, can constitute their knowledge necessary for praxis.

The above allows us to advocate the importance of continuing the studies, by means of study groups on educational research methodologies and participation in research projects and/or reflection on practice.

5. Final Considerations

When aiming to identify the possibilities and challenges for the development of research on teaching practice by the TEs, in the scenario of a Federal Institute of Education, in order to reflect on the actions we have and the ones we want, we found several challenges and possibilities in the practice of the TEs. Among the possibilities, we highlight the participation of the TEs as supervisors in the Pibid and PRP programs and in the mandatory curricular internship, as spaces that stress and encourage them to study the theoretical and methodological principles of pedagogical research and develop it to qualify their supervision process.

Of the challenges, we highlight the lack of focus in view of the diversity of activities developed, which include acting in the tripod, research, extension and verticalized teaching—from middle school to graduate school—as well as management activities and participation in councils, along with the absence of training. Moreover, many teachers develop research in applied areas, disconnected from issues of teaching, because some of the participants, even though they have been working for decades in programs such as Pibid and, currently, in PRP, still do not develop research whose objects are the phenomena of the intrinsic relationships that involve teaching-learning and other elements of Educational Sciences. If they do not have this practice, what about the other teachers who are not linked to these programs and focus their research only in their specific areas? What contributions do they bring to initial teacher education? Questions that will certainly lead to future research.

In the general context of the research, we found that, in Portugal and Finland, research is carried out in initial training, a fact that, in addition to contributing to the training of research professors, encourages TEs to improve their praxis,

through pedagogical investigation and production of new knowledge about the various several elements that involve the teaching-learning process and professional development of teachers; actions that, of course, help us to reflect on our actions and design the actions we want. Differently, in Brazil, despite the defense of several theorists about the importance of pedagogical research, and the existence of useful spaces for this, such as the supervised internship, the Pibid and the Pedagogical Residence, this is not an action present in the practice of some TEs.

Therefore, when problematizing our situation in the light of other contexts, we can point out some actions to be implemented, so that teachers can develop the practice of research as a possibility to improve teaching-learning in initial training courses and for the TPD. To begin with, we consider that teachers can even work at different levels—from Technical High School to Post-graduation—however, it is fundamental that they are assisted in the formation of their professional identity and in the process of developing pedagogical research. To this end, we consider fundamental the implementation of institutional actions that encourage the awakening of the desire to carry out pedagogical research, as well as a process of ongoing training, both for teachers with training in the area, and for those who do not have knowledge, in order to provide the opportunity to learn about the theoretical, epistemological, and methodological aspects of the themes that involve the field of educational sciences, in short, the actors that involve the objects of study of pedagogical research—the processes of teaching-learning, the general and specific didactics of the different areas of knowledge.

We must take into account that the expansion of teaching tasks in the verticalized teaching process, besides causing excessive attributions to teachers, can compromise the quality of the initial teacher education process. On the contrary, the formation of study groups to share knowledge and implement pedagogical research will help teachers to focus their practices in the same area, which, besides strengthening the identity of the degrees, will avoid the wear and tear of working in several different areas and levels.

Finally, we consider it essential to include research in the curricular proposal of the initial training courses of the institution, in order to integrate the various disciplines and the professional context of future teachers, involving all the TEs. With this, the TEs will be stimulated to seek new knowledge and know-how about working with pedagogical research and will contribute to the training of teachers who use research in their pedagogical practice and as an educational principle.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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