

SCIENTIFIC RESEARCH AND REFLECTION AS BASIS FOR A SATISFACTORY
TEACHING PRACTICE

*A INVESTIGAÇÃO CIENTÍFICA E A REFLEXÃO COMO ALICERCES PARA UMA
PRÁTICA DE ENSINO SATISFATÓRIA*

*LA INVESTIGACIÓN CIENTÍFICA Y LA REFLEXIÓN COMO BASES PARA UNA
PRÁCTICA DOCENTE SATISFACTORIA*



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ABSTRACT: In this paper, we discuss some elements that can make a teaching practice satisfactory for learning, considering the relationship between scientific research and teacher education. The study was developed during a PhD in Education, from our participation in classes for students of the third semester of an undergraduate degree in Education (Licensure) at a Brazilian public university, where we conducted semi-structured interviews with 6 (six) of those students. The discursive textual analysis of the data showed that when teacher trainers, by inserting the problematization and reflection on facts of the educational experience, through scientific investigation, contribute, significantly, to a new attitude before knowledge, which tends to overcome the simple-mindedness observation, as well as the mechanical participation in the classroom and the idea of an only task-oriented teaching.

KEYWORDS: Research. Teachers' Knowledge. Theory and Practice. Reflection.

RESUMO: Neste texto, propomo-nos a discutir os elementos que podem tornar uma prática de ensino satisfatória à aprendizagem dos(as) estudantes, tomando como base a relação entre a pesquisa científica e a formação. O trabalho, no percurso de uma pesquisa de doutorado em Educação, foi desenvolvido na participação em uma disciplina do terceiro semestre do Curso de Licenciatura em Pedagogia de uma instituição pública de ensino superior, onde realizamos entrevistas semiestruturadas com 6 (seis) estudantes matriculados. A análise textual discursiva dos dados mostrou que os responsáveis pela formação, ao inserirem a problematização e a reflexão acerca de fatos da realidade educacional, por meio da investigação científica, contribuem significativamente para uma nova postura diante do conhecimento, a qual tende a superar a observação simplória, bem como a participação mecânica na sala de aula e a ideia de um ensino puramente tarefairo.

PALAVRAS-CHAVE: Pesquisa. Saberes docentes. Teoria e prática. Reflexão.

RESUMEN: En este artículo, discutimos algunos elementos que pueden hacer que una práctica docente sea satisfactoria para el aprendizaje, considerando la relación entre la investigación científica y la formación. El estudio se desarrolló durante un doctorado en Educación, a partir de nuestra participación en clases para estudiantes del tercer semestre de una Licenciatura en Pedagogía de una universidad pública brasileña, donde realizamos entrevistas semiestructuradas con 6 (seis) de esos estudiantes. El análisis textual discursivo de los datos mostró que cuando los formadores de docentes, al insertar la problematización y la reflexión sobre acontecimientos de la experiencia educativa, a través de la investigación científica, contribuyen, significativamente, a una nueva actitud ante el conocimiento, que tiende a superar la observación inexperta, así como la participación mecánica en la clase y la idea de una enseñanza meramente orientada a la tarea.

PALABRAS CLAVE: Pesquisa. Saberes docentes. Teoría y práctica. Reflexión.

Introduction

When reflecting on the challenges inherent to university teaching and initial teacher training, as well as the place of Didactics in this context, it is difficult not to wonder: what elements tend to better support the teaching practice and promote a satisfactory and meaningful learning among students? As a possible answer to this question, the thesis that guides us in this text is that the research activity brings together several elements that are essential to this learning, undoubtedly contributing to the training of future teachers. Among such elements, we can mention the innovation and creativity that guide the search for new knowledge, helping them to give meaning to the learning of the teaching profession. In this perspective, we imply that it is about the very meaning attributed to the act of teaching and to the knowledge that constitutes the teaching profession, which may allow the teacher to perform his instructional and educational action more productively.

Based on the question presented in the previous paragraph, this text is based on the reflections provided by the second author's participation in the courses Didactics of Higher Education and Teaching Internship, both in the Doctoral Course of the Graduate Program in Education of a public institution of higher education (IPES in the Portuguese acronym). The internship, however, was developed in the Degree in Pedagogy course of the aforementioned institution, under the supervision of the first author, who, in the year 2019, taught the subject "Educational Research I" to third semester students. With the use of semi-structured interviews, the goal we pursued here was to discuss the elements that can make a teaching practice satisfactory to the students' learning, based on the relationship between research and teacher training.

In this process, we initially resort to the relevant, and already widely accepted, considerations of Libâneo (1994), Tardif (2011), Pimenta (1999) and Pimenta and Lima (2019), about the performance of the teacher in the classroom and the process of constitution of his/her knowledge. We add to the debate with these authors the postulates of Charlot (2000, 2013), for whom this process is undeniably and inextricably linked to the mobilization of students in relation to the act of learning. Since Didactics is the main branch of studies of Pedagogy (LIBÂNEO, 1994), these theoretical choices are justified due to the fact that the act of teaching implies "[...] mobilizing a wide variety of knowledge, reusing it in the work to adapt and transform it by and for the work," as has been stated by Tardif (2011, p. 21, our translation) and will be better discussed in the following section.

The contribution of Didactics to the understanding of the meaning of the act of teaching and of teaching knowledge

For Libâneo (1994, p. 25, our translation), Didactics is configured as the main branch of studies of Pedagogy because "[...] it investigates the foundations, conditions and ways of accomplishment of instruction and teaching". In this sense, according to the author, Didactics has been concerned with establishing "what" and "how" to teach, trying, throughout time, to respond to the needs that teaching faces, based on the social context in which its main actors are inserted: teachers and students. It is through this movement of elucidation of the aforementioned aspects that, in the historical course of this area of knowledge, some pedagogical trends appeared, which are divided into two large groups: liberal pedagogy and progressive pedagogy (LIBÂNEO, 1994). They reflect, in a more analytical way, the ways of processing teaching, considering that each one of them has intrinsic foundations and characteristics.

The pedagogical tendencies of the Progressive Pedagogy group, with which we are in tune, consider that education is a political act (FREIRE, 1991) and, without a doubt, defend that such act can never be disconnected from the context in which it is developed. In this sense, we understand that the educational act is configured as a social practice that needs to take into account the wishes of those involved, who, in articulation, should think about a project of transformation of their personal and social realities. Thus, based on these tendencies, didactics becomes constituted in the coherence between the aforementioned transformation project and the classroom experience built by teachers and their students.

In other words: it is in the classroom (not limited to the physical space) that these actors should think about the problems of practical life and seek their solutions, thus effecting a contextualized and meaningful education. This is justified because didactics and teaching practice function as mediators both for the formative action of students, who may become future teachers, and for the work of the teacher who is already in full exercise. In this perspective, Charlot (2000, 2013) suggests that it is experience that allows us to attribute meaning to any human activity, including the act of teaching and learning. Thus, the act of educating implies the transformation of knowledge and not only its transmission.

On this issue, like Larrosa and Kohan (2016, p. 05, our translation), we argue that education is practiced "[...] to transform what we know, not to transmit what we already know". Since the meaning attributed to the act of teaching assumes its "contours" in the transformation of what we know, thinking about Didactics, and our performance as teachers, demands us

educational projects in which "theory and practice, school and society, content and form, technique and politics, teaching and research" are articulated; [which demands to consider] a didactics that conceives teachers as subjects who learn a profession and become professionals as they learn by teaching" (FARIAS; SALES; BRAGA; FRANÇA, 2011, p. 17, our translation). Similarly, it is necessary to think of teacher training as a key moment of their socialization and their professional teaching configuration, through which a didactic process must be carried out in which knowledge is contextualized with their personal and social life, and the relationship between them and their trainers takes place in a dialogical and respectful way (NÓVOA, 1995). Therefore, it is a process of insertion in the cultural and social space of teaching so that students can understand the elements that intervene in teaching practice.

In this perspective, whatever the teaching action, planned and executed, it needs to take into consideration the students' life trajectory, their previous knowledge and the material conditions through which the teaching and learning activities take place. In this way, we should always think of formative actions concerned with qualifying real teachers for real teaching situations, in which the expectations of personal and social transformation of both the trainee and the trained prevail. It is in this direction that the research activity assumes a relevant formative role insofar as the future teacher deepens the knowledge about the practice "[...] ceasing to be a simple performer and becoming a professional researcher and conceptualizer" (PEREZ, 1999, p. 274, our translation). After all, training demands actions that view teaching as "a complex professional activity, as it requires diversified knowledge. This means that the knowledge that supports teaching requires professional training from a theoretical and practical perspective" (VEIGA, 2009, p. 20, our translation).

Still on this issue, we learn from Tardif (2011) that teaching knowledge is a construction in the field of subjectivity and, therefore, it is related to the teacher's person, his/her experience, the relationship with his/her peers and, especially, with students. Thus, they are plural educations, constituted from knowledge derived from professional training, from various disciplinary fields, from curricular accommodations, and from situations that have been experienced by them. For this author,

[...] in his work, a teacher draws on his personal culture, which stems from his life history and previous school culture; he also draws on certain disciplinary knowledge acquired at university, as well as on certain didactic and pedagogical knowledge derived from his professional training; he also draws on what we can call the curricular knowledge conveyed by programs, guides and textbooks; he draws on his own knowledge linked to work experience, on

the experience of certain teachers, and on traditions peculiar to the teacher's craft (TARDIF, 2011, p. 262-263, our translation).

For all these reasons, teaching knowledge is, at the same time, considered unique and social, because it also receives external influences, such as family, workplace, and the many relationships and experiences that teachers had as students throughout their school careers.

In these trajectories, subjects develop beliefs and representations about "what" and "how" to teach, even before they enter the teaching profession, and carry them with them, constituting, in large part, a basis for the construction of their professional knowledge. About such elements, Campos (2013, p. 43, our translation) states that these beliefs and representations "[...] are personal, emotional, and articulate themselves as a hierarchical filtering system about what is true in teaching and learning, and are consolidated over time as experiences crystallize in a successful way". Campos (2013) also states that it is very difficult to change this belief system of teachers, because, most of the time, it is constituted through mirroring with the practice of former masters, of whom they were students in previous times, and becomes crystallized as being, sometimes, their primary reference point.

In this sense, we add to the ideas of Campos (2013) a problematizing element: what if the teachers who serve as reference to new teachers are based on outdated pedagogical trends and alien to the social context in which the latter are inserted? This anachronism can then cause some problems in their daily professional lives, because it is a repertoire of teaching models that no longer matches or corresponds to the current social and political demands. This can occur, moreover, both with regard to the relationship between student and teacher as in relation to the treatment of content, for which the use of more participatory and socially committed teaching methodologies is expected, as is the case of training based on research (DEMO, 2010). Based on these aspects, it is necessary to agree with Tardif (2011, p. 61, our translation) regarding the complexity around the knowledge of the teaching professional field, since they are built in a plural, composite and heterogeneous way, bringing "[...] to the surface, in the very exercise of the work, knowledge and manifestations of know-how and know-how-being quite diverse and coming from different sources, which we can also assume that they are of different nature".

Further elaborating on this idea, and defining his typology of sources from which teaching knowledge originates, Tardif (2011) states that teachers' knowledge is not exclusively made up of knowledge transmitted by the educational sciences during professional training. They are also influenced by pedagogical knowledge, which is understood by the author as

"doctrines or conceptions arising from reflections on educational practice in the broad sense of the term [...] and which provide, on the one hand, an ideological framework for the profession and, on the other, some forms of know-how and some techniques" (TARDIF, 2011, p. 37, our translation).

Disciplinary knowledge, in the author's view, consists of the various fields of human knowledge that are integrated in the form of disciplines. This knowledge emerges from the cultural tradition and social groups that produce knowledge, and is not produced by teachers, but is mobilized by them in the action of teaching. In addition, curriculum knowledge corresponds to "[...] the discourses, objectives, contents, and methods from which the school institution categorizes and presents the social knowledge defined and selected as models to the erudite culture and training for erudite culture" (TARDIF, 2011, p. 38, our translation). In other words, this is the knowledge that is presented in the form of teaching programs, through objectives, content and methods that the teacher must learn and mobilize in the teaching function. Finally, there is experiential knowledge, which comes from individual and collective experience as something practical and is validated and shared with peers in the course of the profession. Therefore, they do not come from the training institutions, nor from the curricula, since they manifest themselves in the form of a *habitus* and of skills that involve both know-how and know-how-to-be. (TARDIF, 2011).

Representing a complex web, the knowledge of experience is, in Therrien's (1995, p. 01) words, the result of the "transformation in the praxis of the various instituted knowledge (curricular, disciplinary, and professional training), as well as knowledge of social practice and culture". They are what define teaching professionalism and elevate the teacher to the status of a professional. In this same perspective, for Nunes (2001), the knowledge of experience is configured, in sum, as the original knowledge of teachers, in the sense of integrating their identity and constituting a fundamental element in their practices and pedagogical decisions. Synthesizing this discussion, we can say, therefore, that the "ideal teacher" would be the one who knows his subject, his discipline and his program, who has certain knowledge regarding Educational Sciences and Pedagogy, and who develops a practical knowledge, essentially based on the daily experience with the students (TARDIF, 2011).

In addition, the reflections of Charlot (2000, 2013), about the didactic situation, point to the fact that the learner subject only gets involved and/or develops an intellectual activity if before he mobilizes himself in relation to it. However, for him to be mobilized, the situation experienced, in which the activity is involved, must produce meaning, that is, it must awaken

in the subject a desire to mobilize and a will to learn. Therefore, we can infer that it is the knowledge of experience (TARDIF, 2011) that probably tend to best help the teacher as to the perception of the most appropriate way to lead their students to mobilize for the engagement in an intellectual activity.

This reflection is equally valid for the didactic situation in which we find ourselves: the training of future teachers, in which they are learning the contents of their profession. But what would "meaning" be in this perspective? Since activity is understood as an intellectual challenge that is presented to the subject, meaning, for Charlot (2000, 2013), transcends the immediate meaning that a subject constructs in relation to something, and implies, in turn, a value, an importance that this thing assumes in his life. Thus, when feeling the need to apprehend some activity, that is, to master it, the subject gets involved because he wants to construct himself as someone who knows how to exercise such activity in the world. This implies a dynamic that is internal to him and that allows him to know about something, corresponding to what Charlot (2000, 2013) defines as mobilization, distinguishing it from the process of motivation. Even though he recognizes differences between the two concepts, he says that they end up meeting, because if it is true that someone is mobilized to achieve a certain goal that motivates him to do something, it is also true that people are motivated by something that can mobilize them. Therefore, in order to learn, it is essential that the individual is mobilized, that is, invested in an activity making use of himself as a resource that was driven by a desire, a meaning and a value.

Such aspects are valid for both teaching and learning activities. Therefore, the pedagogical relationship tends to be more productive when the teacher finds meaning in what he teaches and the student finds meaning in what he has to learn. Thus, we can find in Veiga's (2009) proposition the corroboration of these ideas when the researcher states that it is necessary to have professional training in a theoretical and practical perspective for the construction of knowledge to support teaching. In other words, this implies that the theoretical knowledge should be presented to the trainees as elements loaded with meaning, that is, with a subjective value, once it integrates the daily experience of these subjects and also establishes a relationship with practical characteristics (CHARLOT, 2000, 2013).

Given this finding, we consider that this is what probably happened in the didactics undertaken during the classes in the discipline "Educational Research I": they represented an opportunity for teacher training along the lines outlined by Veiga (2009), articulated within a research activity. This is justified because all the elements that make up the planning of teaching

were articulated during the mentioned subject, aiming to achieve, throughout the research exercise, the relationship between theory and practice, as we will see below.

From now on, then, we will analyze how these reflections were elaborated in the course of the teaching activity exposed here.

The construction of meaning for teaching and learning in the classroom experience

For Pimenta and Lima (2019), didactics as an epistemological field, i.e., the construction of knowledge about teaching and teaching practice, cannot do without reflection and research. In this perspective, Pimenta and Lima understand the internship experience also as a research field, and that it can greatly contribute to the construction of the teacher's professional identity. For this reason, it is through the internship that teachers, both those in the process of training and those who work as trainers, will access significant elements for the understanding and the theoretical and practical deepening in relation to pedagogical knowledge and teaching practice, especially, according to Pimenta and Lima, when it is linked to public institutions. This is justified because, on a large scale, educational problems are even more prominent in the public sphere, which requires an even greater reflexive engagement.

Based on this reality, Pimenta and Lima (2019) suggest that the teacher trainer should configure himself as a critical-reflective professional and, above all, a researcher of his praxis and of the educational praxis that are carried out in his work environment. Taking this perspective as a theoretical support, it is necessary to explain that the teaching action analyzed here is not configured as an internship as a curricular component of the undergraduate courses, but as a formative experience demanded by a graduate course in education *stricto sensu*, in which both the educational researcher and the teacher are in professional development, continuing their initial training, now at a higher level. It is, therefore, a discipline in this post-graduation course called Teaching Internship, which allows the post-graduate student, either at the master's or doctoral level, to have a teaching experience in a Pedagogy undergraduate class.

The reflection undertaken here took place in the third-semester Pedagogy class of the School of Education of an IPES. The discipline attended by that class, in the first semester of 2019, was "Educational Research I", whose menu expresses as objectives: "a) develop the scientific spirit; b) present the main types of research; c) develop the ability to read texts and scientific reports; and d) exercise the student in the preparation and execution of a research".

To reach these objectives, we sought to develop a teaching methodology that integrated the

theoretical discussions about the activity of scientific research to its practical content, relating them especially to the research know-how.

The emphasis on learning research in a Pedagogy course is justified insofar as this activity, along with teaching and educational management, makes up the dimensions of the education of the pedagogue: to be a scientist in the field of education and an investigator of the phenomena and problems that concern the pedagogical work. Thus, at the beginning of the activities, the teachers (teacher and trainee) dialogued the key concepts of scientific research, as well as the main characteristics of this activity in the Social Sciences until it reached educational research, the subject's central interest. Through this methodology, the students had the opportunity to confront their previous knowledge about the theme, through dialog and interventions during the exposition of the contents. It was also necessary to present the main genres of scientific writing experienced in the academic environment and their characteristics, with emphasis on the scientific article genre, which would be produced by them at the end of the first semester of 2019.

After the initial meetings dedicated to the theoretical exposition, the class, formed by 46 (forty-six) students, was divided into 8 (eight) groups. Each of these groups was asked to plan a 4h/y seminar with the objective of presenting, to the whole class, a certain theme related to the activity of scientific research. The seminar themes were selected in a chained way, so that the students could understand the complexity of this academic and scientific practice. They were: 1) Science and the construction process of scientific knowledge; 2) The importance of writing for the education of the researcher; 3) Characteristics and purposes of research in the Human and Social Sciences; 4) Characteristics and purposes of research in Education; 5) Qualitative Data Construction and Analysis Methods in Education; 6) Ethnography, Case Study, and Ethnographic Case Study; 7) Autobiographical Research and Collaborative Research; 8) Participatory Research and Action Research. To support the seminars, the teachers (the course director and the trainee) acted as "born-members" in all the groups, informing the students that they would give their contributions during the dialogical exposition.

The professors also provided reference texts about the themes and a guiding script (lesson plan) for the systematization of the presentation of the referred seminars. In parallel, throughout the months of the semester, the members of each team had to think of a concrete problem in the educational universe of their surroundings in order to carry out scientific research about it and, later on, write a report about this research in the form of a scientific article. All these activities were done in a collective way due to the operational aspects,

especially the guidance and the follow-up of the written productions, since it was impossible to do it in a singular way. It is important to emphasize that, in these activities, the students were accompanied by the teacher responsible for the subject and the intern, who gave them all the necessary feedback for the consolidation of the expected learning. At the end of the course, in the format of an oral communication presentation at academic events, all the articles were presented with the results of the research.

When reflecting on the activities carried out, we recall the ideas of Fischer (2009), who, when analyzing the dimensions on which teaching and learning are effectively processed in the university, asks: how can there be growth of the students if they are provided with activities that limit them to hear and see, see and hear and then reproduce? For this researcher, "[...] one of the main reasons for teaching practice at university is to make students think, seek solutions to new problems, discover original alternatives to theoretical and practical challenges" (FISCHER, 2009, p. 311, our translation).

In this sense, the training experienced in the course in question enabled the understanding alluded to by the researcher, since not only those students, as future pedagogues/teachers in the process of initial training, but also the intern who followed the activities, were faced with theoretical and practical confrontations raised by the area of Education as a field of action and production of knowledge. However, to go a little further in these reflections, we believe it would be necessary to hear the opinions of the students themselves about how the activities experienced in the course would be impacting their training and/or making sense to them. As a trainee and teacher-supervisor, we thought that the understanding about some aspects emerging from these feedbacks would make the teaching experience more significant in formative and professional terms for all the social actors involved.

As to the methodological aspect, to access these opinions, we carried out, besides the usual observations, a semi-structured interview with the students. Our objective was to get to know the aspects, among those experienced in the course taken, that would be highlighted by the students as being relevant for their training as teacher/pedagogue, considering, also, the methodological proposal developed by the professors of the course and the elements that made their learning more satisfactory and significant. Near the end of the semester activities, we invited the class and 6 (six) students (2 males and 4 females) volunteered to participate in the interviews, which were held at times agreed upon with them due to the lack of time available.

It is worth mentioning that, following the ethical procedures of research with human beings, all the participating students signed a Free and Informed Consent Form (FICF), on the occasion of the data construction that resulted in the present text. In the mentioned FICF, we emphasized the objectives of the study and the guarantees of non-disclosure of their identities. Therefore, as agreed, all the names presented here are fictitious, to preserve the students' anonymity.

Relevant aspects highlighted by students

After transcribing the interviews, we performed an exercise of textual discourse analysis, which can be described as a process of unitarization of texts with their respective sets of meanings (MORAES, 2003). This is justified because, in this perspective of analysis, the texts are divided into units of meaning, which can also function as generating sources of other sets of units emerging from the relationship between the empirical interlocution, the theoretical interlocution and the interpretations that are performed by the researcher. Following this unitarization, we proceed to the articulation between the similar meanings, whose process is called categorization, in parallel with the replacement of the students' names by fictitious names. This being so, from the set of data built by means of the interviews, three categories of relevant aspects emerged that were pointed out by the students as being significant as to the manner in which the activities experienced in the course had an impact on their learning and, consequently, their training: 1) Articulation between theory and practice in the training of a teacher-researcher; 2) Learning in collective contexts; and 3) Teaching follow-up as support for learning.

Regarding the first aspect (articulation between theory and practice in the training of the teacher-researcher), all interviewees reported that the course made it possible for them to realize that the training of the teacher/pedagogue also includes processes that enable them to do research. Here is a sample of the statements of two subjects.

In my opinion, the discipline of educational research was of great relevance to my training as an educator, because it leads the Pedagogy student to go beyond the theoretical competencies that are seen in the university classroom. When we went out into the field as researchers, it was possible to travel through different environments and interact with people from different social contexts. This is very enriching, as it allowed us to acquire a knowledge of the world, as well as new knowledge acquired from the research results. This new knowledge will help us to act more appropriately, when we graduate, in the classroom or in other sectors as educators. (Josenira).

When I enrolled in the course, I imagined that I would see a lot of methods, writing formats, scientific writing, all that stuff. But the teacher and you [referring to the trainee], when you decided to approach research in Education, promoting a space for research, for reflection and discussion in the classroom, awakened in me the importance that I already had a notion of, but that, after this course, was brought to the surface: it is the idea of the teacher-researcher. (Adrezza).

Given these reports and the theoretical contribution brought in this writing, we saw that the process of knowledge production of future teachers really needs to be not only diversified, but essentially connected to the institutional realities of the school and its surroundings. Having the school as the main field of reflection for these subjects, we saw how much the future teachers advanced in the understanding of a training that does not dissociate the theoretical from the practical (VEIGA, 2009). For this reason, in the opinion of 04 (four) of the interviewees, training should not be dichotomous, because teaching and research activities gain a lot when they go together, as an excerpt presented here by André.

In my opinion, the main aspect that I would place as relevant was that being a teacher, for me, presupposes that it is necessary to constantly and systematically research your own practice, right? You can't just stop your training when you receive a diploma and think that, with that, you have authority and, there, you don't need to improve yourself any more. (André).

The students reported that it is not only possible, but also desirable and very profitable a teacher training that enables them to be researchers of their own practice. As we can see, the students, still in the process of initial training, are already aware that, in learning to teach, it is necessary to think about concrete situations from day to day, in which there will always be an expectation of personal and social transformation. In this sense, the understanding about the importance of research becomes even more notorious, even for us who were conducting the contents and guiding them in this activity, according to Yasmin's report.

One of the fundamental aspects of the discipline "Educational Research I" was in the formation of the identity of the pedagogue as a researcher in the area of Education. Particularly, I didn't even know that research was an area of possible action as a pedagogue; and today, I find myself delighted, seeing educational research as an instrument of social transformation. (Yasmim).

Analyzing these excerpts, the student's speech authorizes us to say that bringing the reality of her social context to the classroom in college, so that it can be discussed and reflected upon, is extremely relevant, since it allows the construction of knowledge that goes beyond theoretical competences. From this perspective, such competences tend to be used by the

students themselves as an element of training, reminding us of Tardif's bet (2011) when he suggests an epistemology of classroom practice, which is also referenced by authors such as Pimenta and Lima (2019). About this, one of the interviewed students expressed herself thus: *"The discipline is dense, but was masterfully applied by the teachers. In organizing the seminars, we were able to learn in order to teach, to build this knowledge together, which was a very pleasant experience."* (Yasmim).

Indeed, learning about what it is to be a teacher should be built in the same way as learning about doing-science, that is, in the collectivity, always impregnated with doubts, questions and the complexity of the real. After all, "scientific knowledge, while collective practice, is the result of a complex articulation [...] of possible relationships" (REIS; FROTA, 2012, p. 73, our translation). It is about a formation, therefore, that has as a basis reflection and not the perceptions of common sense and its certainties, from which it would be up to the students only the simple task of reproducing models.

As to learning in collective contexts, which is the second aspect highlighted by the students, three of those interviewed emphasized the importance of teamwork in the performance of the activities of the course. For them, these were extremely important learning experiences, highlighting: the organization of seminars to present to the class a certain type of research; the choice of a problem to be researched; the selection of the adequate methods and techniques to investigate the chosen problem and, finally, the collective writing of the article and its later socialization in the format of presentation of oral communication in scientific events, as the students highlighted:

We began the course already being informed that the result would be an article produced in group. This encourages the student to research, because he knows that he will present a product of his activities to the whole class at the end of the semester. And this stimulates teamwork, which is an essential aspect for the pedagogue, because at school he/she will work with other teachers in thematic projects, political-pedagogical projects, inclusion projects, among others. Thus, he needs to develop empathy, patience, resilience, perseverance, dialogue, respect, and orality (Ian).

This part was also very difficult and formative: searching for a question that pleased everyone, agreeing on the execution of the work, and managing to present a good work. This was of great enrichment as an educator (Ileana).

These excerpts allow us, in a way, to infer the mobilizations that made the students engage in the proposed activities (CHARLOT, 2000). Certainly, the collective work is what stands out, making it necessary to point out, in Ian's speech, the association made between the

collective work in carrying out the discipline's activities and the work to be developed by the pedagogue in the school space.

This demonstrates that the subject, still in formation, already projects his professional performance when formed, which signals the fact that it should be and be based on the interaction with other co-workers. As mentioned by Tardif (2011), we found in this study that the interaction between and with peers is also relevant in the construction of teaching knowledge. Therefore, Ileana's speech was also relevant for us to understand how important it is to have Didactics that propose collective activities even in the process of initial training for teaching.

The same aspect is valid for any other professional area that has as its focus the interaction with humans, especially in times marked by individualism and the absence of collaboration, so harmful to teamwork. This being so, we reaffirm the need that, since the beginning of their training, students should have the opportunity to organize the strategies that will help them the most in group work, which is something complex, but of high formative value, as pointed out by Ileana. From this point of view, our reflection leads us to the third and last aspect highlighted by the students as relevant to their education as teachers/pedagogues.

This aspect also takes into consideration the methodological proposal developed by the teacher-trainers in the course: the teaching follow-up as a support for learning, as reported by Ian.

The continuous monitoring of the professors and their readiness to provide feedback for the students to improve their work. [...] In the seminars, the students presented the researched contents and the professors ratified, demystified and expanded the exposed concepts, always applying them to the research practice (Ian).

As we can see in this report, the students considered the continuous monitoring by the teachers as impacting in relation to their learning. They refer, more specifically, to the feedbacks made by the teacher-trainers, which, in the didactic situations created, optimized not only their understanding about the theoretical contents, associated with the activity of scientific research, but also the appropriation and use of literacy instruments in a dialectic and dialogic perspective. One of these instruments, in particular, was the writing of the scientific article genre.

The text of the article was produced from a communicative need, which was mediated to meet one of the most significant academic practices of written language use: the dissemination of research results. As Andreza states:

The support of the professors in the production of the research and the article was incredible! Both by removing doubts, which were always solved very quickly, and by the attention in always being willing to contribute to the improvement of our work, even with many teams (Andreza).

It is exactly for this reason that the learning and use of writing, as proposed to the students, needed a greater support from the teacher-trainers. This is justified because the one who assumes the role of trainer must be committed, without a doubt, to the individuals he or she proposed to train, considering that he or she is more experienced and, for this reason, be able to mobilize the knowledge of this experience to accompany them in their learning process (TARDIF, 2011). Let's see Ileana's note:

I think that, besides clearing up doubts and making it easier for us to conduct future educational research, the professors' guidance also opened my eyes about the importance of doing research; it opened my eyes to understand that it was not as difficult or "impossible" as it seemed to be, because I think that most people, who come from public school, enter university with a lock on writing, an insecurity. At the end of the course, I felt better able to write and with a lot more confidence. (Ileana).

In the context under analysis, for the students to appropriate the writing of the scientific article genre, the teachers of the discipline needed to activate and create the most varied resources in the teaching of this social practice. Among these resources was the dialogical feedback of the written productions, which was, without a doubt, one of the most productive mechanisms, especially because the teachers used contemporary resources of digital communication, being well synchronized with the reality of the students. The creation of an event for the presentation and discussion of the results of the research, by means of oral communications, represented, at the end of it all, the culmination of the work carried out, since the mobilization undertaken by the participants of this process was directed towards one goal: the significant learning of the students, that is, the production of meanings and experiences in teaching, their future field of work.

Final remarks

As evidenced throughout the writing of this text, the understanding about the importance of research in the classroom configures itself as a great contribution to the quality of the training. Without a doubt, the reflections made by the students about the educational processes and their complex dynamics inspired them to undertake a revision of their own conceptions about how to learn and how to teach. In this sense, we consider that we made good use of the space of that classroom, giving us, also, a moment of investigation of our own practice, which, as Pimenta and Lima (2019) state, went beyond the simple observation, the mechanical participation and the task-oriented regency in the classroom.

In this perspective, we learn with Pimenta (1999) that the process of construction of a professional identity, such as the identity of a teacher, for example, is configured in the very construction of his/her subjectivity, which is intrinsic to the social and historical context in which the subjects are. Therefore, as teachers (and teacher trainers), when we attribute a meaning to the act of teaching, making use of scientific research, we also end up producing a meaning to the students in relation to the act of learning. Our didactic actions, therefore, took into consideration both the identity construction and the social insertion of those subjects when they engaged in an intellectual activity even more relevant, as was the case of the writing of the academic discourse genre scientific article.

Proof of this is that the students who participated in the course, and helped in this research, pointed out that the problematization and reflection about the educational reality in which they are inserted were configured as very valuable aspects for their professional teaching training. This perception is in line with the perspective of Pimenta and Lima (2019), for whom didactics and teaching methodologies (or specific practices) need to be constantly redefined, with teaching as the focus, that is, as the object of study and the basis for reflection on praxis. Therefore, what we saw was a set of formative actions, with scientific research and reflection as foundations, through which it became evident that the meaning of the act of teaching, and its “raison d'être” in the field of Didactics, is strengthened when it emphasizes the activity of the learners (CHARLOT, 2000, 2013), that is, when it provides opportunities for dialogical and engaging pedagogical situations, constituting the learners as co-participants in the educational process.

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