Supervised Internship as A Locus for Constructing Teaching Knowledge

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Abstract: The main objective of this article is to analyze whether the supervised internship has contributed to the construction of the teaching identity of future teachers. The objective of this analysis was to analyze the narratives written by a student of the undergraduate course in Physics, at the Universidade Estadual Paulista (UNESP), Ilha Solteira campus, SP, during the supervised internship II, in order to answer the following research question: has the internship of the undergraduate course in Physics contributed to the construction of the teaching knowledge of future teachers? To answer the research question, the case study methodology was used and a qualitative analysis of the narratives of a student was carried out. Through data analysis, we can conclude that the supervised internship really contributes to the construction of the teaching identity of the future teacher.

Keywords: supervised internship; physics teaching; undergraduate course; qualitative analysis.

I. Introduction

In recent years, we have seen an increase in research on teacher training, which encompasses both initial and continuing education (SLONGO; DELIZOICOV; ROSSET, 2010). During initial training, graduates have their first contact with their future workplace, that is, the school. This occurs during initial training when students begin their internship. In most universities, the internship is divided into two parts: the first part involves undergraduates observing students in the classroom and the second part involves them teaching classes. These classes are always supervised by a university professor and a school teacher.

According to Pimenta and Lima (2004), the internship is a time for future teachers to get closer to reality, but this reality only makes sense when,

> [...] it has a connotation of involvement, of intentionality, since most bureaucratic internships, loaded with observation sheets, have a short-sighted view of approaching reality. This points to the need for a conceptual deepening of the internship and the activities that take place in it. It is necessary for teachers supervising internships to collectively, together with their peers and students, carry out this appropriation of reality, to analyze and question it critically, in the light of theories (PIMENTA; LIMA, p.14, 2004).

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Therefore, in order to carry out the internship, it is important to combine theory and practice, because theory will only be valid when combined with practice. “Theoretical activity is what makes it possible to understand reality and establish goals for its transformation in an inseparable way” (PIMENTA 2005, p. 92). In order to achieve transformation, theory alone is not enough. It is necessary to put it into practice, because it is not enough to just know the theory, “[...] it is necessary to transform it”. (PIMENTA, 2005, p. 92). Therefore, the internship cannot be seen only as a practical part of the course, because we see many people saying that the practical part of a degree course is when students go on internships. This is because many curricula are focused on training scientists and not citizens. We also observe that the disciplines are presented in isolation, that is, they do not relate to the reality of the students. According to Pimenta and Lima (2004), these curricula are concerned with constituting only disciplinary knowledge.

In this way, the internship is also a time for future teachers to learn to reflect on their practice. However, on the other hand, it is necessary to take care when reflecting on one's own practice, as these can be conducted inappropriately, fostering a distance between the university reality and schools. According to Gatti (2013/2014, p.40), "these internships end up not constituting effective practices and a source of reflection on pedagogical actions for interns". Internships are merely a bureaucratic fulfillment and do not contribute to the construction of students' teaching identity.

In addition to the internship, initial teacher training involves various perspectives that guide the process of constructing the teacher's practice, of which there are three basic perspectives, each of which implies the conception of teaching (LORENCI JR, 2009). According to Pérez Gómes (1992) cited by Lorenci Jr (2009), they are: academic perspective, technical perspective and practical perspective.

In this sense, this article will address the internship in undergraduate courses, teaching knowledge and the perspectives that guide the construction of teaching practice. After presenting these themes, we will analyze the narratives written by a student of an undergraduate course, to see whether or not the internship contributed to the construction of teaching knowledge. Based on the theoretical assumptions, we intend to answer the following question*: Has the internship in the undergraduate course in Physics contributed to the construction of teaching knowledge of future teachers?*

We believe that through this investigation it will be possible to point out paths and actions that aim to improve the initial training of teachers, thus offering important contributions to teacher training.

II. Perspectives for the construction of teaching practice

In this topic, we will show the three perspectives that guide the construction of the teacher's practice, in each of these perspectives a different teaching concept is presented.

In the **academic perspective**, teaching is by transmission, where the student is passive and knowledge is acquired in a cumulative way. According to Lorenci Jr (2009), in this perspective the teacher is considered an expert, because the more knowledge he/she has, the better his/her transmission will be. Therefore, this perspective does not emphasize the importance of pedagogical training for the teacher. It is important to highlight that the curriculum in this perspective is rigid, fixed, that is, it does not allow changes and the evaluation of students is carried out in an eliminatory and classificatory way.

According to Schön (1991), the **technical perspective** is reproductive and incomplete, and the teacher's action consists of solving problems by applying theories or techniques. In this perspective, teaching is carried out through techniques and rules, therefore, here we also find students being passive in which knowledge is cumulative and the evaluations have an eliminatory character. In this model, the teacher has a limited degree of autonomy and during his/her training he/she did not learn to reflect critically. Therefore, reflection on his/her own practice makes no sense, since for him/her it is simply applying theory to his/her practice. Therefore, he/she ends up adopting a passive stance towards theories and becoming mere reproducers of knowledge.

In this **practical perspective**, the teacher is an investigator, mediator, reflective and critical, that is, he reflects on his own practice, but this reflection must be carried out in a way that transforms his practice, because

according to Zeichenner (2003), all teachers are reflective, but the difference lies in the way they reflect. According to Schön (2000), reflection on one's own practice is characterized by three moments, namely: reflection in action, reflection on action and reflection on reflection in action. Still according to this author, before reflection it is necessary to have knowledge in action, this is a moment of reflection with oneself.

The methodology used by the teacher in this practical perspective is diverse, in which there is methodological pluralism. The participation of the students in this process is active, and the knowledge is constructed together with the students and not imposed by the teacher.

III. Supervised internship

As mentioned in the introduction, the internship is a time for students to come into contact with reality and also with the difficulties they will face when teaching. The internship can be considered a time when the future teacher is certain whether or not this is the path they want to follow. Many undergraduate students, when they arrive at the internship, are certain that this is the profession they want to pursue, while others become disillusioned and realize that this is not the path they want to follow in their lives.

According to Pimenta and Gonçalves (1990), the internship, in addition to this approach to reality, is an opportunity for students to reflect and analyze the environment of their future workplace, thus contradicting the view that many have that the internship is just a bureaucratic exercise. It is important to highlight that during the internship, students will unfortunately encounter professionals who are frustrated with their profession and have no expectations of change. Therefore, it is necessary to be careful so that these professionals do not influence the future teacher's decision-making.

> The intern will come across many dissatisfied teachers, worn out by the life they lead, the work they do and the loss of historically acquired rights, in addition to the problems of the socio-economic context that affect them. Thus, it is common for interns to be welcomed at school with appeals: "Give up while there is still time!" and "What are you doing here, so young?" (PIMENTA, 2002, p.104).

It is sad to know that in many schools future teachers are welcomed this way, but this cannot affect these students, who must show that they are there because they really like what they do and because they believe in quality education.

In addition to these points that we have highlighted, the internship, on the other hand, favors the construction of the teacher's identity, because from its practice, the contact with other professionals, with the school and with the students, all of this contributes to the construction of their identity, as well as the importance of teaching knowledge.

When teaching classes, future teachers put into practice the theories that were studied and discussed at university, and this makes them realize that theory and practice are inseparable. According to Pimenta (2005), theory alone is not enough to transform reality; it is necessary to put it into practice. This is the only way to transform theory, and practice alone cannot be used as truth. A theory is always needed to reflect. Therefore, we see that theory and practice always go hand in hand, which is why Pimenta (2005) coined the term *praxis*. Therefore, *praxis* only happens when there is a transformation.

In view of this, we see the importance of teachers' reflection, because it is through their reflection on their actions and on the entire school environment that praxis can occur. In this way, during their teaching activity, teachers are always connecting with their teaching knowledge, thus creating their own teaching identity.

IV. Teacher Identity

In recent times, we have seen that people are having access to information more quickly and easily. In view of this, it is possible to see people saying that students can learn more using the internet than at school. So, why are we still so concerned about the initial and continuing education of teachers, when we will soon no longer need

them? It is at this point that Pimenta (1990) counters by saying that the teacher is becoming increasingly necessary, since he or she is the one who will mediate all the information that students are finding on the internet. Therefore, it is necessary to (re)think the initial education of teachers, since students are increasingly arriving in classrooms with a lot of accumulated information.

In many initial education courses, the internship that should be a time for future teachers to deal with these situations ends up distancing themselves from reality and ending up being just a bureaucratic fulfillment, therefore not contributing to the construction of a teacher identity (PIMENTA, 1990).

The teaching identity is not fixed, it is always under construction, this construction will depend on the life trajectory of each subject, thus, the teaching identity is something idiosyncratic, that is, it is something particular. According to Guimarães (2004), the teaching identity is constructed throughout life, even before starting to teach, that is, the experiences of the teacher as a child, adolescent, their beliefs and their culture. Therefore, every aspect that occurs throughout life contributes and continues to contribute to the construction of the teaching identity.

In summary, the teaching identity is constructed throughout one's life trajectory, as well as throughout the years that one will be teaching. Being a teacher involves having a great deal of knowledge that is necessary for the performance of one's duties, and this knowledge is what ultimately differentiates one professional from another.

V. Teaching Knowledge

There are several researchers who discuss teaching knowledge, such as: Maurice Tardif, David Gauthier, Lee Shulman, Selma Garrido Pimenta, Philippe Perrenoud, Antônio Nóvoa and Keneth Zeichnner, all of whom discuss the importance of teaching knowledge for teaching performance (Albieri de Almeida; Biajone, 2007). In this article, we will address teaching knowledge from the perspective of Pimenta (1999).

It is in practice that knowledge is tested and discussed; it is in practice that the teacher will seek new ways and means of teaching. Through reflection on their own practice, the teacher will improve or overcome the difficulties encountered throughout the classes. According to Pimenta (1999), the term teaching knowledge is defined in three categories: knowledge from experience, knowledge from knowledge and pedagogical knowledge.

Knowledge from experience indicates that students already arrive at university with experiential knowledge, this experience comes from when they were students, and they ended up judging their teachers, some for having better teaching methods than others. Therefore, Pimenta (p. 20, 1999) comments that "[...] the challenge, then, posed to initial training courses is to collaborate in the process of students' transition from seeing the teacher as a student to seeing themselves as a teacher. That is, to build their identity as a teacher". Still on this author, she comments that knowledge from experience also comes from the daily life as a teacher, this being a process of constant reflection on one's own practice.

Knowledge of knowledge is linked to the specific knowledge of each subject, which the teacher will teach. This is essential to be able to teach a good class. For Pimenta (2000), teachers must acquire theoretical, technological and cultural knowledge, thus aiming at the process of human development. As for pedagogical knowledge, it is no use for the teacher to know only the knowledge of knowledge and experience; it is necessary to know the pedagogical concepts.

Pimenta (1996) comments that many students in training courses have an illusion about pedagogical knowledge, in which they believe that knowing the subject matter consequently means knowing the didactics, creating an illusion. Therefore, "knowledge about education and pedagogy does not generate pedagogical knowledge. This knowledge is only formed through practice, which confronts and reworks it" (PIMENTA, p. 26, 1999). It is through action that pedagogical knowledge is produced, hence the importance of the teacher being reflective, that is, always reflecting and questioning his/her own practice.

VI. Methodology

This research has a qualitative nature. According to Lima; Guba (1985), cited by Mezzotti and Gewandsznajder (2001), the research is structured through the articulation of theoretical studies and contact with reality. From this perspective, the researcher will have a vision based on theories and, from contact with his/her research environment, a reinterpretation of the theory will occur, aiming to illuminate the object studied. Therefore, the researched theme must make sense to the researcher, which shows a problem or dissatisfaction, or even a curiosity about some fact experienced by him/her in the world.

The research method used for this article is the case study. For Yin (2001), the case study can be by a single individual or a group of individuals.

Therefore, the research proposal of this research has as its theme whether the supervised internship has contributed to the construction of teaching knowledge. In light of this theme, we will analyze the narratives of just one student in the Physics Degree course at the São Paulo State University (UNESP), Ilha Solteira campus, São Paulo. It is important to highlight that during the supervised internship II (this internship is the time when the student teaches classes, with the supervision of the school teacher), at the end of each class taught, the students had to write a narrative. These narratives are like a diary, where the student tells everything that happened in his class, exposing his anxieties and achievements. The name of the student investigated was not mentioned in order to protect his identity. Therefore, for this article, the narratives of one student will be analyzed. During the analysis, we hope to find elements that will allow us to answer the guiding question of this work: *has the internship of the Physics Degree course contributed to the construction of teaching knowledge of future teachers?*

Data Analysis

The analysis of the student's narratives is presented below. First, an excerpt from his narrative is presented, followed by the analysis of this excerpt.

> *At that moment, I was a little scared, because I didn't know why he was giving those answers. So the only explanation I have is that the students only looked at the values, so they don't know or understand the meaning of the concept of average speed. So I thought of another way to explain the concept of speed. I related this concept to their daily lives and made comparisons between the speeds of cars [...].*

In this excerpt, the teacher realizes that the students are having difficulty understanding a concept. So, he quickly thinks of another way to teach the students. We realize that at this moment, there was a reflection on the action. In addition to this reflection, we highlight the importance of knowledge of the content that the teacher needs to have, because if he doesn't have knowledge of the subject he teaches, he won't know how to teach the students using different methodologies.

> *My goal with this group activity was to get everyone to discuss, but unfortunately that didn't happen. I tried to mediate this conversation between the students, but when I went through the groups, I noticed that only one or two from each group discussed the concept.*

We see that the teacher tried a different methodology in the classroom, putting the students in groups to discuss a concept. Given this narrative, we realize that the students are not used to this type of class. This may be one of the reasons why the students were unable to complete the activity, as they are not used to leaving their comfort zones. In this excerpt, we realize the importance of pedagogical knowledge. This knowledge is built through practice, in which the teacher will learn through practice the best way to teach their classes.

> *[...] today I remembered my physics classes in high school, the teacher would just write the equations on the board and substitute the values [...] in my classes I don't want to do that, I want to teach the students the concept, I want them to understand the reason for things and not for them to memorize formulas [...]*

In this excerpt, we understand the importance of knowledge from experience, because at this moment the teacher remembers his physics classes in high school and realizes that he does not want to act like this teacher. Since his Physics classes ended up not making sense to his reality, as a future teacher he intends to change this view of Physics teaching. Experienced knowledge is necessary because it is based on your interactions with other teachers, who may want to do the same as them or simply want to be completely different from some professionals with whom you have already had contact.

> *When I arrived at the classroom, I asked who made the list of exercises, I asked them to give them to me, at that moment I was scared, because all the students started shouting, teacher I did it, teacher here is mine, teacher..., at the time I couldn't believe they did it, even the main teacher of the classroom was shocked, she told me that the students never do anything at home. I was happy with this situation, because I didn't believe they would do it, I heard so many older teachers telling me that the students never do anything at home, that the students are lazy, that they have no interest in anything. I'm glad I tried and got an answer that was the opposite of what the other teachers told me.*

In this excerpt, we realize that the future teacher has already come across professionals who are frustrated in their fields, as we observed that the teachers were already talking badly about the students to the future teacher, it is understood that the teacher was not supposed to even try to ask the students to do activities at home, which they would not do. But the teacher was persistent and made his proposal in class, and in the end he obtained good results. Unfortunately, many interns will encounter disillusioned professionals, however, they cannot let these professionals influence their decision-making.

> *[...] I realized that the students were not understanding what I was saying, I tried to explain it in another way, but they still did not understand. Soon after, they said that they had understood the concept. However, I realized that they said this just so I would stop explaining, but in fact they had not understood it yet. Next time, I need to try to explain it again using another way [...]*

We understand that at this point there was a reflection on the action, in which the teacher realized that the students did not understand the concept, and therefore, he needs to review the way he was teaching, that is, he needs to go back to theory to look for other methodologies and then apply them in his practice. Therefore, we see the importance of praxis in which the teacher needs to be in constant reflection between theory and practice, based on theory, he needs to transform his practice. Furthermore, in this excerpt we also see that knowledge of the content is not enough; one must know how to teach, thus, we highlight the importance of pedagogical knowledge.

Final Considerations

Based on the analyses of the narratives of the future Physics teacher, it is possible to see that the internship contributes to the construction of this teacher's teaching identity.

It is during the supervised internship that the future teacher will have his/her first contact with his/her workplace. Furthermore, it is at this time that he/she will meet other professionals in the field, plan classes, and teach classes. This is the time for reflection on his/her future professional career, for confronting theory. In addition, this is the time when the future teacher can discuss his/her concerns with other colleagues and university professors and share his/her learning throughout the internship.

It was possible to see that during the internship, the teacher came across the importance of various types of knowledge, such as pedagogical knowledge, in which it is not enough to just know the content; one must know how to teach this content to students. Knowledge of the subject, how important it is to master the content in order to be able to carry out differentiated activities in the classroom, making the student active in the teaching and learning process, because a teacher who does not master the content ends up being a "transmitter of knowledge", in which only the teacher speaks and the student becomes passive in this process.

Another element that stood out during the analysis was the reflection on one's own practice. During the teaching, the teacher reflected on several moments about his practice, and based on this reflection he tried to find new ways to teach content in theory. In this reflection, we see the importance of praxis, in which the teacher needs to constantly carry out this movement between theory and practice, in order to be able to transform his practice in the classroom.

Therefore, the supervised internship contributes to the construction of the teaching identity, this is one of the moments when students will begin to realize the importance of the knowledge acquired throughout their life trajectory. Remember that each subject will have a different identity, because the construction of the teaching identity is directly linked to the life story of each subject.

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