

An undergraduate course and the construction of the Physics teacher profession

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Abstract. The research general purpose is to investigate the practices of an undergraduate degree in Physics from a successful university in training a high number of students. In this work, we bring the vision of the alumni, through narrative-based interviews, addressing the curriculum of the course and its relationship with the knowledge and the teaching practices. Using a Content Analysis methodology, there were identified 3 recurring themes in the interviews: the professor-student interactions, the professors political dimension and the knowledge of professors in the area of training, those being some of the aspects valued by the subjects.

1 Introduction

In the face of new roles that teachers have to assume in the modern society, the initial formation of those professionals should converge to models that stop to esteem the professional activity as an instrumental practice and the conception of teaching guided by the paradigm of technical rationality [1].

The supremacy of the technical rationality in the “pedagogies” culminates in initial training courses that revitalize teaching paths that are predominantly transmissive [2]. The critique of this conception has its bases on the epistemological assumption, in which the transmissive pedagogies are settled, that all the knowledge exist outside of us and they are passed on by the teacher to the student. In this way, the idea that the learner is a mere spectator - of the rhetoric and conclusions uttered by the teacher through unilateral and vertical communication - undermine any attempt of the learner to connect to knowledge and stifle the investigative character of education.

The new models, brought by researching in teaching and learning, agree that an overcoming of the transmissive teaching is urgent. However, the teacher training institutions are still based on conservative and traditional pedagogies with idealized models of applicationist principles [1] and the majority of the pedagogical practices are influenced by rationalization, fragmentation and a linear view of the education [3].

The problem is even more pronounced when it comes to teacher training in Physics. It turns out the pedagogical knowledge has been crystallized as "recipes" of teaching, suggesting a disjointed practice with other knowledges. In addition, the frameworks of undergraduate degrees in Physics in Brazil have other problems, such as: the need to change curricular design, high levels of dropout; courses in which places are not filled; the failure of academic performance; the low satisfaction rate in relation to the training itself.

Diverging from the scenario above, the locus of this research seems to go in another direction. In addition to being the oldest training center in Brazil, it can be considered as the most successful in the State of São Paulo, at least in terms of the number of graduates per year¹ (about 65 per year versus the average of 24 in the rest of the country's) and it also underwent restructurings, according to official documents, aimed at making a curriculum more consilient with what is expected of the teachers.

Thus, within a larger work, we seek to understand how the formation of the curriculum of the course, the disciplines, the institutional actions, or of the professors themselves, influence the

¹Political pedagogical project of the licentiate course in physics by USP - 2009

formation of the profession of the Physics teacher, according to the perspective of the former students who act as teachers in Basic Education. With this we can raise positive parameters of practices and training that may inspire other courses here in Brazil. In this paper we present some of the preliminary results of the work that has been carried out.

2 Analysis methodology

This work has, as empirical field, the degree course in Physics by the Institute of Physics of USP - São Paulo and its alumni, They being a case study. The information was provided by the subjects through narrative-based interviews focused on the subjects' initial training. To collect the topics that were emerging from the interviews, we used the Content Analysis methodology [4]. The theoretical resource of the research is based on authors who study the epistemological issues of training and professional practice [1], [3], [5] and theoretical discussions on university teaching formation [6].

In this work, our efforts were focused on the information brought by the content expressed in the narratives, making possible the acknowledgement of some formative practices that our subjects pointed out as positive in the course of their initial formation. Among them, our subjects pointed out the focus on the university professor as the main agent of the formative process and considered the practices focused on the learning processes as the most fruitful.

The interviews revealed some professors values and attitudes that the subjects considered substantial, one of them being the interactions between professors and students, favorable to mutual respect and trust, so that the classes allow the students to overcome the difficulties to reach the objectives proposed by the course and the discipline. The reports also revealed that the subjects value the political dimension of professors when they used it as a way to promote positive thinking and discussions on social issues. The interviewed mention that it would be preferable if the university professors had the knowledge of the training area in a way that undergraduate classes could establish relationships between the realities of the classroom in basic education and the "theories" learned in the initial training.

3 Conclusion

Among the positive training parameters that our research subjects provided us, we point out 3: professor-student interactions, the professors political dimension valued by the subject and the teacher knowledge in the area of formation. We must emphasize that the parameters pointed out in this work are part of a larger research carried out within the scope of the Graduate Program. We hope, with this paper, to bring up a few topics that were recurrent in the interviews. Our intention is that, at the end of the research process, it will be possible to understand, through the point of view of students and alumni, how the university contribute to a good formation.

References

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