

IN-SERVICE CALCULUS COURSE: WHAT DO STUDENTS AND TEACHERS WISH?¹

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Mathematics has penetrated into several areas of knowledge, seeking to comply the demands of professional formation and technical assistance. However, students and teachers of these technical areas complain that mathematics courses do not generally offer them what they need. According to Howson et al (1988) the problems arising from the so-called “courses in service” have been poorly understood and insufficiently analyzed by mathematics educators and researchers.

During 1999, we used a questionnaire and semi-structured interviews in order to determine the profile of the students’ expectations in a freshmen calculus course for a Geology Program. Our leading question was: *what do they wish?* It turned out that their basic complain, as well as of other teachers in the Program, was the lack of applied problems whose importance for the subsequent professional courses could be recognized as relevant. We designed and carried out a freshmen calculus course for geologists attempting to fulfil this demand. Here we shall report on the outcomes of such attempt.

As soon as the applied exercises were introduced into the classroom, the students started complaining about their “complexity”, about their unfamiliarity with the concepts involved, about the length of the problem statements. Some asked us to go back to the routine exercises in the textbook. A polemical situation was installed in the classroom. From this point on, our research focused on what was happening. We expected to appease the students’ complaints, but our action only made them worse. Based on the psychoanalytical theoretical framework of Slavoj Žižek [3] and Tânia Cabral [1] we identified the students’ contradictory behavior as apparently hysterical: *this is what we ask you but it is not that we want you to give us*. The theoretical framework led us to consider two concepts, the symbolic and the imaginary identifications that frame one’s desire. We inquired the social models that the institution (university) offers to teachers and students of in-service calculus courses: to which gaze do the actors play their roles? From what point of view do they look at themselves?

In trying to answer these questions we finally discovered that our own speech had also been contradictory. With the applied exercises we expected that the students would recognize the importance of the operations of differentiation and integration that we were trying to teach them, but we failed to stimulate the discussion about the meaning of these problems for their future courses and profession.

References.

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- [2] Howson, A. G. et al. (1988). Mathematics as a Service Subject. In: *Selected Papers on the Teaching of Mathematics as a Service Subject*, Edited by R.R. Clements et al. Springer – Verçag: Wien – New York, p.1 – 6.
- [3] Žižek, S. (1990). *Ils ne savent pas ce qu’ils font: le sinthome idéologique*. Paris: Point Hors Ligne – France.

¹ This study is part of M.Sc. dissertation, initially supervised by Altair Polettini and, after her tragic death, by Miriam Penteadó, Roberto Baldino and Tânia Cabral.