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Analysis of the Discursive Dynamics of Preservice Physics Teachers in a Context of Curricular Innovation

Authors : M. A. Barros, M. V. Barros

Abstract : The aim of this work is to analyze the discursive dynamics of preservice teachers during the implementation of a didactic sequence on topics of Quantum Mechanics for High School. Our research methodology was qualitative, case study type, in which we selected two prospective teachers on the Physics Teacher Training Course of the Sao Carlos Institute of Physics, at the University of Sao Paulo/Brazil. The set of modes of communication analyzed were the intentions and interventions of the teachers, the established communicative approach, the patterns and the contents of the interactions between teachers and students. Data were collected through video recording, interviews and questionnaires conducted before and after an 8 hour mini-course, which was offered to a group of 20 secondary students. As teaching strategy we used an active learning methodology, called: Peer Instruction. The episodes pointed out that both future teachers used interactive dialogic and authoritative communicative approaches to mediate the discussion between peers. In the interactive dialogic dimension the communication pattern was predominantly I-R-F (initiation-response-feedback), in which the future teachers assisted the students in the discussion by providing feedback to their initiations and contributing to the progress of the discussions between peers. Although the interactive dialogic dimension has been preferential during the use of the Peer Instruction method the authoritative communicative approach was also employed. In the authoritative dimension, future teachers used predominantly the type I-R-E (initiation-response-evaluation) communication pattern by asking the students several questions and leading them to the correct answer. Among the main implications the work contributes to the improvement of the practices of future teachers involved in applying active learning methodologies in classroom by identifying the types of communicative approaches and communication patterns used, as well as researches on curriculum innovation in physics in high school.

Keywords : curricular innovation, high school, physics teaching, discursive dynamics
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