Preservice teachers, geometry and proof

Lina Fonseca

Escola Superior de Educação

Instituto Politécnico de Viana do Castelo, Portugal

Some preservice mathematics teachers reveal difficulties and negative attitudes when they study geometrical concepts and relations. Some years from now I´ m having a problem: what can I do in the classroom to foster understanding and performance of students when they face proof in geometry? I need more knowledge about proof and teaching of proof. I have access to papers from Gila Hanna, Michael de Villiers, Tommy Dreyfus, P. Goldenberg, ... After that, I start designing environments where students play active roles in trying to develop geometrical *habits of mind.* The goal is to develop in preservice teachers reasoning processes, meaning that the variety of actions that students take in order to explain to themselves, to others, what they see, what they do, what they conjecture and why they do it. I decided to use *The Geometer´s Sketchpad* (GSP) with the students to contribute to experimentation, to conjecture, to convince of the truth of the conjecture and to help them come to see proof as a form of explanation and understanding why, rather than convincing. One aim of the study is to analyse the performance of preservice teachers in proving, in order to answer to the question: what level of performance reveal preservice teachers in doing proofs? The participants in this qualitative case study are a whole class of preservice teachers in the second year of the maths and science course in a School of Higher Education, during a whole year. Data has been collected through geometric problem solving tasks and observation. To solve the tasks the participants need to use GSP, to make conjectures, to examine and to reformulate those conjectures and to answer why they are true. We are in the beginning of data analysis, that is holistic, descriptive and interpretative. This presentation will try to answer the question and to draw some conclusions.

References

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