

THE ROLE OF LEARNING COMMUNITIES IN MATHEMATICS IN THE INTRODUCTION OF ALTERNATIVE WAYS OF TEACHING ALGEBRA

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The purpose of this article is to address the main themes of my planned PhD thesis. It focuses on the roles of teachers in the teaching and learning of algebra. A five-levels developmental and analytical model is described with different layers of teachers' reflections emerging from this model. It is suggested that engaging teachers in this developmental model may increase awareness concerning the complexity of the teaching situation.

THE MAIN THEMES OF MY STUDY

The main focus of my thesis is the teaching and learning of algebra. This subject has turned out to be difficult for students and they develop mathematical skills without necessarily exploring the full power of mathematics: reaching a relational understanding of mathematical concepts and seeing the need for the use of symbols. My study involves two or several teachers with development and analysis taking place at five levels. I propose mathematical tasks (related to algebra) for the teachers and study the way they cooperate in solving these (level 1) and the kind of reflections emerging from this process (level 2). The next step is to observe how teachers plan what kind of tasks they can offer to their pupils in their respective classes in order to foster the same kind of reflections that they experienced in level 2 (level 3 and 4). The last level addresses teachers' evaluations of and reflections on the teaching period (level 5). This developmental model evolves as a spiral with teachers' reflections as the main focus. This perspective may offer a powerful conceptual framework for research on the interacting development of teachers engaging themselves and with pupils in problems related to algebraic thinking.

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