

**Special issue - Didactics of mathematics, teacher education and teaching practices.**

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The mathematics education journal *Educação Matemática Pesquisa* publishes a new issue! For over 20 years we have shared with our readers the results of scientific research in the field of mathematics education, more specifically, the didactics of mathematics. This special issue presents the works presented at the second Latin American Symposium on Didactics of Mathematics (II LADIMA) held in 2018. LADIMA's aim is to establish an academic space for study and discussion on theoretical and methodological questions of the didactics of mathematics. This Symposium is intended to bring together the community of Latin American researchers, including young researchers, in a space that privileges the theoretical-methodological debate and the deepening of research training. In addition to strengthening the WG14 - Didactics of Mathematics of the Brazilian Society of Mathematics Education (SBEM), this event is expected to foster dialogue between researchers in didactics of mathematics in Latin America.

The theme of this second symposium was: **A Didática da Matemática, formação de professores e práticas docentes (The didactics of mathematics, teacher education and teaching practices)**. It had four courses, with the objective of deepening aspects related to the theme of the symposium and four workshops linked to the different courses. The first course, entitled **Les décisions didactiques de l'enseignant: un modèle pour tenter de les comprendre (Teachers' teaching decisions: a model to try to understand them)**, was delivered by Annie Bessot of Team MeTAH, Laboratory LIG, Grenoble Alpes University, France. This author called "didactic decisions", among all the decisions that a teacher must make in their professional practice, those that are intended to allow

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students to study a knowledge to teach. Bessot starts from the following question: What model should be used to understand those decisions? She presents a model she built by articulating two theoretical frameworks, the theory of didactic situations (TDS) and the structuring of the environment, on the one hand, and the anthropological theory of the didactic (ATD) and the scale of the codetermination levels, on the other. Bessot incorporated into this model the categories of teacher knowledge by Shulman (1986) and Ball et al. (2008), and presented a methodology to test it.

The second course was given by Maria Trigueiros, from the Department of Mathematics - ITAM - Mexico. The theme of this course was: **Diálogo entre las teorías APOE y TAD (A dialogue between APOS and ATD theories)**. The author presents some critical considerations on the use of two or more theories, and discusses a way of conducting a dialogue between two theories, in this case the action, process, object and scheme theory (APOS) and the anthropological theory of the didactic (ATD), which considers the distinctions between the different components of a praxeology and thus reshapes the principles of a theory without violating its basic postulates in terms of the elements of another theory. Trigueiros presents the results of the dialogue between APOS theory and the ATD, considered as research praxeologies, and illustrates their use in approaching and developing research on a topic of linear algebra.

The third course was proposed by Dilma Fregona, from the National University of Cordoba, Faculty of Mathematics, Astronomy, Physics and Computation, of the Argentine Republic. Fregona addressed the following theme: **Reflexiones teóricas para el estudio de la actividad matemática en las aulas (Theoretical reflections for the study of mathematical activity in class)**. For Fregona, the reflection on some notions of mathematics didactics opens questions, denaturalizes certain practices and promotes knowledge about the dissemination of mathematical knowledge. It is about problematizing the mathematical activity in the classroom, from the perspective of different teaching models, especially those that come from French didactics, among them the Brousseau's and Chevallard's models.

The fourth course, entitled **Praxéologies de formation, praxéologies pour la formation et leur écologie - La justification des pratiques comme condition et comme contrainte (Praxeologies for education, praxeologies for training and their ecology - The justification of the practices as a condition and a constraint)**, was delivered by Michèle Artaud (ADEF, Aix-Marseille University, France). Considering the anthropological theory of the didactics, and taking as support the notion of praxeology (a

set of know-how and knowledges that allow justifying, producing, making this know-how intelligible), the author discusses some elements of the praxeologies of teacher training and their ecological viability. In particular, we highlight the influence of the knowledge as a condition/restriction of the existence of praxeologies, as well as the existence or not of certain praxeologies for the training.

In addition to these courses, this special issue also contains communications texts resulting from ongoing and / or finalized research, and whose theoretical references are essentially from the didactics of mathematics. The articles deal with the state-of-the-art, mental calculus, teacher education, inclusion, assessment, textbook analysis, probability, technologies, instrumental orchestration, documentary genesis, problem solving, professional identity and curriculum materials, among other topics.