

DEVELOPING PROSPECTIVE TEACHERS' MATHEMATICAL KNOWLEDGE TO TEACH PROPORTIONALITY

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During the last decades, there has been a growing interest in the research of the knowledge needed to teach mathematics (Ball, Bass, Sleep & Thames, 2005). In this paper, we inform on the application of a methodological tool that helps to develop prospective teacher's mathematical knowledge to teach. The search for tools and strategies to promote such a development is a task of great importance in the field of mathematics education (Lo, 2004). Following this line, we report about a formative process of prospective teachers that pretends to develop mathematics knowledge needed to teach through an activity that involves the resolution of a mathematical problem about proportionality as well as the *epistemic analysis* of its resolution. The epistemic analysis is carried out through the "Guide for Recognizing Objects and Meanings" (GROM) which is a table where mathematical objects (linguistic elements, concepts, procedures, properties and arguments) are put on correspondence to meanings. The use of this tool (Godino, Rivas, Castro & Konic, 2008) has allowed identifying mathematic elements of didactic interest, potentially useful and necessary for teaching. The results show that prospective teachers have trouble to recognize not only the rate concept but also properties and arguments implied in the resolution. This analysis activity, supported in the use of GROM, fosters to develop the specialized content knowledge for teaching.

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