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ARITHMETICAL CONCEPTS IN MATHEMATICS TEXTBOOKS FOR TEACHER TRAINING AT THE BEGINNING OF THE NORMAL SCHOOL IN COSTA RICA (1914-1970)

Abstract :

In 1914 Normal School of Costa Rica was founded, it was considered the specialized center for teacher training at the time. Along the time, the research on this institution has highlighted general elements of its creation without analyze in depth the mathematical and didactic training received by teachers. Barrantes & Ruiz (1995) briefly describe some of the textbooks used to train teachers in this Normal School. Also, Montero (2010) refers to its founding and organization as an essential institution of the history of Costa Rican education. This contribution highlights the training of teachers during the first years of the Normal School. In particular, we study the arithmetical training that teachers received to teach these mathematical concepts in primary education institutions. Arithmetic was the fundamental mathematical area to children education at the time. Theoretically, this study establishes its bases in the field of historical research in mathematics education based on the analysis of curricular documents, such as teacher training plans, and historical textbooks, which detail into their content most of particularities of school mathematical content. As a background, we highlight the studies by Carrillo (2005), which focuses on the training of teachers in arithmetic since the creation of the Normal Schools in Spain (in the second third of the 19th century), and Picado (2012) who emphasizes the teacher training in these

Spanish institutions accentuating curricular changes occurred with the incorporation of the Metric System (in the second half of the nineteenth century). These researches have established precedents from the origins of teacher training in Spain, on particular themes and concepts. They constitute a theoretical and methodological basis for the study that is presented. We have selected two mathematics textbooks used in teacher training in Normal School at the beginning of 20th century. These textbooks are available in the National Library of Costa Rica. The analysis of these sources takes into account the principles of didactic analysis as a technique for the study of textbooks. The information shown in the textbooks allows us to establish particularities about the arithmetical concepts in which teacher training was framed, also on ways in which these concepts were represented and their usefulness in several daily activities of the time.

References Barrantes, H., Ruiz, A. (1995). History of Mathematics in Costa Rica: An introduction. San José, Costa Rica: EUCR & EUNA. Carrillo, D. (2005). Arithmetic methodology in the beginning of the Normal Schools (1838-1868) and its antecedents. Murcia, Spain: University of Murcia. Montero, C. (2010). The Normal School of Costa Rica. Retrieved from <http://carlosmontero.blogia.com/2010/081401-la-escuela-normal-de-costa-rica.php> Picado, M. (2012). Metric System in mathematics textbooks in Spain in second half of Nineteenth Century. Doctoral dissertation, University of Granada, Spain. This contribution is the first study that highlights teacher training in Normal School in Costa Rica from the research in History of Mathematics Education, focusing the analysis of arithmetical concepts in mathematics textbooks used for training of primary school teachers.