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A New Elementary Mathematics Curriculum: Practice, Learning and Assessment Some Classroom Episodes

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Abstract

The aim of this paper is to present the new and innovative Mathematics Curriculum for elementary levels that is being implemented in the Portuguese basic education system (students from 1st to 9th grade) through an overview of an ongoing study of implementation/experimentation of this curriculum. A specific mechanism was implemented in the field to provide scientific and pedagogical support to the development of the new elementary mathematics curriculum (NPMEB) implementation at all grade levels and all over the country. In particular, the NPMEB is being experimented by a set of teachers that teach in their own classes and that have been trained and accompanied along the experience by the different authors of the program. We will focus on some classroom practices, sharing innovative and creative ideas of teachers and students, grounded on some of the tasks used by the teachers. The preliminary results suggest that some improvements are already visible, namely regarding students' attitudes and mathematical competences and teachers' practice.

Introduction

In the current Portuguese education system there is a new and innovative elementary mathematics curriculum (students from 1st to 9th grade), the NPMEB (ME, 2007) that includes a series of changes of the government's responsibility to improve the conditions of the teaching and learning of that discipline. To this have contributed the discontent with the results obtained by students in national external (e.g. standardized tests, examinations) and international assessments (e.g. Program for International Student Assessment - PISA). This curriculum was designed to gather some disperse curricular documents and substitute the current syllabus/curriculum/program, published in the early 90s, but mainly to provide the sustained development of students' mathematical learning focused on the more recent recommendations of mathematics teaching and learning.

A specific mechanism was implemented in the field to provide scientific and pedagogical support to the development of the NPMEB implementation through all the grade levels and all over the country. This approach was not generalized but applied to a sample of classrooms/teachers. In particular, the NPMEB is being experimented since 2008 by a set of teachers that teach in their own classes and whom have been trained and accompanied along the experience by the different authors of the program. At the same time the Ministry of Education named a team of mathematics educators for an evaluation study of the process of implementation/experimentation of the NPMEB for three years. The study was designed in three phases with the following purpose: to describe, analyze and interpret teaching practices and assessment developed by teachers of the experimentation and/or teachers to teach in the process of generalization; to describe, analyze and interpret the involvement and participation of students in developing their learning in the context of the classroom; and to evaluate such practices and other curricular materials applied. It was expected to have three