

ABSTRACT

This thesis focuses on the tasks from the environment Vlázky, as one of the isolated environments in the first grade mathematics of primary schools taught according to the elaborated methodology of prof. RNDr. Milan Hejný, CSc.. The theoretical part of the thesis explains the principles and concepts of Milan's methodology, the importance of isolated environments in the process of building the ideas of natural number in children in the 1st and 2nd year of primary school, highlights the environment Vlázky as a propaedeutic environment essential for further education according to this method and introduces the manipulative aid necessary for this environment, the Cuisenaire prisms. The theoretical part explains which tasks are used to introduce the environment into the classroom, explains the important concepts of this environment, describes the different types of tasks and their gradations, the relation of this environment to the 3rd to 5th year of primary school, and last but not least, similar tasks from different workbooks that do not deal with the above methodology are collected here. The goal of the practical part was to check the clarity of the formulations in the assignment, to investigate the students' solving strategies and the difficulties that may occur when solving the problems. The practical part of the thesis also includes a description of selected types of problems, an analysis of students' solving strategies, and an attempt to clarify difficulties and ambiguities encountered in solving the problems, all of which documented by photographs. There are also attachments attached to the theoretical part, which contain worksheets presented to the children. The first work sheet was assigned as a part of a pre-experiment, two more work sheets were assigned as a part of the realization of the experiment, after a few adjustments. This thesis could be one of many types of materials that help teachers in realizations of their mathematics lessons, regardless of the method they use. Even if their method differs from the one described in this thesis, individual tasks can be used to make the lessons more varied or to help students learn faster.

KEYWORDS

environment Vlázky, Cuisenaire prisms, graded tasks, problém solving strategies, isomorphic environment.