

ABSTRACT

The aim of this diploma thesis is to observe and describe the use of the trial-and-error strategy in two didactic environments from the Hejné method among pupils in the second and third year of primary school, who are educated using the usual method of teaching mathematics. The theoretical part deals with the definition of heuristic strategies, their classification and a closer description of some selected heuristic strategies. The key chapter is devoted to the description of the trial-and-error strategy and its inclusion among the solving strategies. It also deals with the problematic attitude of teachers and the wider public towards this strategy. At the end of the chapter, the advantages of its use in solving mathematical problems are included. The next chapters deal with work with mistakes, the child's experiment not only in teaching, and thus follow on from chapter 1.3. Chapter 1.7 describes Hejné's method of teaching mathematics and the didactic environments with which this method works and which are important for the practical part. At the end of the theoretical part, I define the distribution of the curriculum in the second and third years, which influence the students' approaches to solving. In the practical part, the research methods of unstructured observation and the method of verbal statements are used, which together best followed the research goal. In the practical part, two pilot studies and one final study were carried out. First, a set of tasks from the Spiders and Exhibitions environment was compiled, which was supplemented with questions that were supposed to help the pupils understand the rules of the environment and arouse their interest in solving the task. The problem solving strategies of 19 students from second and third year were analyzed and described in the thesis. The results of the research showed that pupils can use the trial and error strategy much better and more willingly in tasks from the Exhibition Sites than in the Spiders environment. At the same time, students in the second year needed more support in experimenting when solving problems from the Spider web environment.

KEYWORDS

Trial and error method, Spider web, Exhibition grounds, primary school pupils , experiments in mathematics, solving problems, structural environment, solving strategy