

The diploma thesis deals with ways of teaching combinatorics at a secondary school. Specifically, I analyzed selected mathematics textbooks for secondary schools in terms of introducing concepts and operations of combinatorics and in terms of types of tasks used. I carried out interviews with six secondary school mathematics teachers and observations of their lessons in order to describe their method of teaching combinatorics. Using results of tests written by these teachers' pupils, I examined whether and how their solving strategies and errors might be influenced by their teachers' approach to teaching combinatorics. Finally, I compared my results with the existing results of mathematics education research on pupils' combinatorial reasoning.

The work is divided into four chapters; the first three are theoretical (curricular documents for selected schools, analysis of textbooks on combinatorics in terms of the implementation of combinatorial concepts and operations, selected research about pupils' solving strategies and errors for combinatorial problems, methods of checking the correctness of their solutions. and the impact of ways of teaching combinatorics on pupils' performance). Chapter 4 focuses on my own research which consists of interviews with teachers, observations of lessons on combinatorics, the analysis and evaluation of the diagnostic test for the interviewed teachers' pupils.

It turned out that pupils make several types of errors which they do not find as they do not check the correctness of their results. The research also showed that if the teacher presents pupils with the formula too soon, at the beginning of the subject matter, the pupils try to use them for all problems. However, if the pupils are first presented with a sufficient number of tasks on the topic and asked to solve them without formulas and only then they learn about formulas, they try to solve the problems in the test without the formulas first and are more successful.