

Abstract:

The thesis focuses on mistakes and problems in manipulations with the algebraic expressions occurring to pupils at the second level of Elementary school. The thesis is divided into a theoretical and experimental part.

The theoretical part contains description of manipulations with algebraic expressions, selected results of international comparative surveys, and an analysis of related foreign research. Analysis of three series of textbooks, according to which pupils involved in the experimental project are taught, is essential for understanding of possible origins of their mistakes. The classification of mistakes in manipulations with algebraic expressions is included.

At the core of the work is the experimental part aiming to identify problems and mistakes of pupils when manipulating and working with algebraic expressions. The participants of the research consisted of six third-grade pupils of an eight-year Grammar school (13–14 years old) and eight ninth-grade pupils of an Elementary school (14–15 years old). Test used for my experiment came from the GA ĀR project Critical parts of mathematics in primary school. The investigation was carried out individually with each pupil by the method of monitoring clinical interviews over the solution of the test tasks. The obtained data was qualitatively processed by each task. Identified mistakes were classified and the most frequent mistakes were illustrated by specific incorrect solutions of the pupils. In the final summary of my findings, possible causes of the most frequent mistakes are linked to the way algebraic expressions are taught by used textbooks. Insights from the course of the project are provided.