

Abstract

Title: Working with numerical and algebraic expressions in the compulsory education

Author: Bc. Lenka Pantůčková

Department: Department of Mathematics and Mathematical Education

Supervisor: Prof. RNDr. Jarmila Novotná, CSc.

This Diploma Thesis deals with numerical and algebraic expressions in elementary school. The theoretical part deals with the framework educational programme for elementary education and grammar schools. It further mentions the propaedeutic of algebraic expressions at the first and second levels. It also introduces the most frequent mistakes done in calculating algebraic expressions. Meanings for the variable are stated as well. The last pre-chapter of the theoretical part is focused on statistics, which is further used for the experiment result evaluation. The experimental part first states the aims and methods of the research. Selected elementary schools taking part in the experiment are further introduced. An analysis of mathematics text books for the eighth grade (mainly chapters concerning the algebraic expressions), the selected schools use in their lessons, is also carried out. The experimental part also introduces the test presented to 128 pupils. Further pre-chapters are devoted to hypotheses and expected mistakes in single subtasks. In the conclusion of the experimental part results consequent upon the test evaluation are stated.

Keywords: numerical and algebraic expressions, didactic test, mistakes when modifying algebraic expressions