

ABSTRACT:

This thesis focuses on errors and difficulties that students face when solving problems with algebraic expressions in mathematics at secondary school. Its aim was to describe the factors that affect pupils' achievement while dealing with algebraic expressions, classify them on the basis of a classification of pupils' errors used in mathematics and identify the biggest pupils' difficulties. The thesis consists of theoretical and experimental parts.

The theoretical part focuses on the factors that influence the success of pupils in their learning process. I present their summary based on information gained from literature and I complete them with my own teaching experience of mathematics at secondary school. Next I deal with the concept of error, error classification and one of the most important phases of learning process, which is a description of teacher's work with pupil's error (again on the basis of information gained from the literature). The theoretical part ends with definitions of basic concepts from specialized literature on algebraic expressions at the end of the theoretical part.

In the experimental part I deal with my own experiment during teaching of mathematics at secondary school, which is based on individual written work of students in the first year of their study and on the questionnaire investigation of the same students and teachers of mathematics. I analyzed qualitatively all obtained data from pupils independent written work and I wrote them up in tables. The data obtained from questionnaires are summarized in the form of bar charts.

At the end of the thesis I have described my own observations in the experiment and I have suggested various modifications in teaching materials concerning work with algebraic expressions.