

Abstract

This master thesis is focused on fractions as a problematic area of mathematics education. The goal of the thesis is to find out which mistakes students make and which wrong strategies they adopt in dealing with fractions. Another aim is to study how the historical ways of dealing with fractions could help the students nowadays. The thesis consists of a theoretical part introduces the mathematical thinking of the Ancient Mesopotamia and Egypt periods, as well as present day teaching of fractions, using analysis of the textbooks and a brief glimpse into Czech as well as international researches. The practical part is based on an investigation in three different seventh grade classes in two primary schools and one high school class of the prima grade. In total 73 students participated in the research which contains a diagnostic test, a series of individual interviews and an educational experiment with historical tasks. The result of this thesis is the finding that most of the mistaken strategies are not connected with only one particular school, because they appear in all of the schools and the Ancient Egyptian methods could be helpful in teaching fractions today as well. For this reason I recommend to spend more time in the educational process with unit fractions (fractions of the form $\frac{1}{n}$), which are a basic step for the development of further fraction knowledge.