

ABSTRACT

Fractions are a dreaded topic not only for students but also for teachers. The reason is that it is a breakthrough subject in primary schools, without which one cannot successfully continue in further studies. Therefore, in the first chapter of this thesis we will focus on understanding fractions through visual models (discrete and continuous - chocolate, circle, line segment, rectangle) that can be commonly found in textbooks aimed at teaching fractions. In the second chapter, using action research tools, we investigated how students' understanding changed over time following the interventions. The research consisted of two pilot tests and three iterations of the test over a two-month period in three seventh grade classes in a Prague elementary school. Specifically, the test focused on part-from-whole and whole-from-part search for the following three models: the discrete ordered model, the fraction-as-part-of-an-area model in a lattice network, and the number axis model. All results were graphically processed using tables, boxplots and we relied on statistical tests. In the third chapter, we summarized these results in detail and also pointed out the shortcomings of the research and how they can be addressed. It showed that there was a positive change in students' understanding of fraction models. This work can help other teachers in teaching fractions as inspiration for tasks and recommendations for including models also in operations with fractions.