

## **ABSTRACT**

This thesis is focused on the idea of an additive triad in the 1st year of elementary school. Specifically, it addresses the problems of additive operations, their reading and writing, the commutative law, and the transition to an inverse additive operation.

The objectives of the diploma thesis are two:

- to find and to characterize the cognitive phenomena that occur in solving the tasks of addition and subtraction of small natural numbers, thus contributing to mapping the area of the pupil mental scheme of the additive triad.
- to describe my own development in the field of research and experimentation.

The content of the theoretical part is the research of professional literature, the commentary on the tasks in textbooks for the 1st year of three publishing houses and the description of the new didactic environment in Hejný's Method - Abaku.

The practical part is devoted to the recording and description of cognitive phenomena, which appear in solving problems focused on additive operations in the work of pupils from the first years of three different elementary schools, and to a description of my mistakes that occurred during experimentation.

The result of this diploma thesis are denominated and commented cognitive phenomena, which appeared in the solving strategies when solving the problems of additive operations. Specifically, they include, e.g.: mistaken reading of equality, wrong application of commutative law, work with zero, transition to inverse operation. The work is concluded by my self-reflection and by my goals in the future, such as deeper mapping the multiplicative triad and additive quadriad, and creating tasks for higher grades of elementary school in the Abaku environment.