ABSTRACT

The main objective of this thesis is to analyze computational thinking in terms of the key concepts and specific target group, 5th grade pupils, and based on the findings to produce a set of interrelated activities and tasks with increasing difficulty in the Scratch programming environment that respect and develop the basic concepts of computational thinking.

The theoretical part is dedicated to both the analysis of computational thinking in terms of the key concepts and the analysis of educational materials for the field of Computer Science for 5th grade students. Furthermore, it inquires into the analysis of tools for teaching algoritmization and programming, in particular of Scratch programming environment.

As a part of the practical part, a set of tasks has been produced, which consists of 8 consecutive tasks with increasing difficulty, verified in practice by the method of action research. The result of the investigation is the production of a comprehensive set of tasks, including supplementary material (sample solutions, presentations and a worksheet) and methodological instructions. Another result of this thesis is a website for pupils on which the tasks and other materials are published.