

ABSTRACT

This thesis explores the use of educational robots in algorithmic thinking development on a high school student level.

In the first part of this thesis the foundational materials from various authors are examined. The approaches to the teaching of algorithmic thinking are analysed, current positions are defined, and possible future developments are proposed in accordance with the requirements of the curricular documents. The work first defines the general theoretic concepts and then moves on to specific technical solutions of the individual robotic systems. The aim is to identify the most effective robotic system for our specific teaching purposes.

The second part of the paper presents 8 teaching lessons employing the robotic system EDISON. These lessons were carried out in a high school in Usti nad Labem. The lessons were analysed, and the effectiveness was verified using the action research methodology. The summary of the methodological notes could be the necessary sources for another teacher using this educational tool.

KEYWORDS

algorithmic thinking, algorithmic structures, computer science, educational robotics, educational coding