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CT for informatics (computing) prospective teachers: specific features, approaches and practical solutions

This module offers teaching materials for prospective informatics teachers to understand computational thinking in various fields of computer science. Since CT does not only exist in computer science, but also influences many other disciplines and is part of everyday life, this module also highlights interdisciplinary aspects of CT. The computational thinking learning activities of this module are based on the informatics topics divide and conquer, codes, simulation and robotics.

Specific Features

Since prospective computer science teachers are often already familiar with computer science concepts and CT, the focus is on the connection and the occurrence of CT skills in various stages of the computer scientific problem-solving process.

Approaches

The main approach is problem-based learning. This involves both unplugged activities and tasks related to specific technologies. In order to gradually go deeper into the subject matter, the developed tasks are scaffolded.

Practical Solutions

In order to emphasize the relevance of CT for computer science and other disciplines, easy-to-use hands-on materials and interdisciplinary tasks with everyday relevance are used. CT skills are to be trained, identified and applied in group work and joint discussions.