

## ABSTRACT

The subject of this thesis is the identification of strategies, which are used by lower-secondary school students when solving problem tasks in chemistry. The strategies were identified during talks with ninth-grade students. The talks conducted by using the Think-aloud method were connected with solution of selected problem tasks. The ascertained strategies were classified as expansive strategies (such strategy can be used to solve more types of problems) and limiting strategies (such strategy can be used to solve easy task, but they can fail when solving more difficult tasks). Furthermore, reader's strategies, which help students to understand the tasks were separately identified. Also, other problems that students had to face when solving the tasks were identified. To identify problematic elements a collection of problem tasks named *Metodické komentáře a úlohy ke standardům pro základní vzdělávání – chemie* (Methodical comments and tasks for educational standards for elementary education – chemistry) were used. The results showed that when students solved the tasks, which were larger and more difficult, they often used reading strategies, which consist in multiple reading and reading aloud. Some of the expansive strategies the students used consisted in analogous deducing and logical reasoning. On the other hand, from the limiting strategies the students used the strategy of tipping and forecasting the answer on the basis of task structure. The identification of strategies used by students together with the identification of tasks solving process with use of the Think-aloud method allowed to compare the way students are contemplating with point rating of tasks solving in the case of use of the tasks. It was therefore possible to compare the point rating of tasks with the knowledge and abilities required to solve the problems.