Abstract

The dissertation thesis is focused on museum didactics and its optional use in teaching chemistry from the point of view of chemistry teachers and museum pedagogues. The chief goal of this project is to analyse possibilities and limits of museum expositions' use in teaching chemistry as a generally educational subject at lower-secondary schools and grammar schools.

Hereby presented work determines basic terminology and evaluates the use of museums nowadays. The thesis includes also literary recherche directed at museum didactics with targeting natural sciences, particularly education in the field of chemistry. The recherche is aimed at expert publications written by Czech and foreign authors published between 1999 and 2019.

The research part of the thesis explains the research design, it describes research exploration strategy and the means of collecting the data, i.e. half-structured interviews, and content analysis. The research specimen comprises of 10 lower-secondary and grammar-school chemistry teachers based in Olomouc Region and 12 museum pedagogues from Olomouc and Moravian-Silesian Region. Based on the results of the research, methodology materials intended for implementation of museum expositions in chemistry classes were made. Specifically, they cover detailed suggestions for museum excursions that support the fact that museums may play an important and meaningful role in teaching chemistry. The methodology materials were evaluated by carefully chosen teachers and tried out under real educational conditions.

The results suggest that teachers perceive museum excursions as a specific organizational form of teaching and its impact depends to a certain extent on the teacher and their being acquainted with museum didactics. The teacher's own initiative to extend their knowledge regarding this area of expertise and to actually use the museums with their students is crucial. School Educational Programmes include excursions only in a very general sense and that's why the teachers can plan the excursions in their own way without having to follow a strict handbook. The excursion can reach high quality thanks to the contribution of museum pedagogues who may take over the role of a teacher for a short period of time. Museums usually present their educational programmes, but those chemistry-related are but few. A possible solution to that problem is to use

the cross-curricular (also known as intersubject) learning which the enclosed methodology materials are based on.

By testing the suggested methodology materials for the excursions in real educational environment the need for their variability was detected, meaning the possibilities of their modification not only according to specific local conditions, but also in agreement to the teacher's approach to implementation of teaching in a museum. Based on the carried-out excursions then can be stated that the presented materials live up to these requirements and can be used as templates for other educational topics as well as for the currently available expositions.