

Title: Development of Competencies in Scientific Education through the Active Work of Pupils
(Focused On Field Trips)

Abstract

The overall concept and strategy of science education is undergoing significant changes, the basic starting curricula are designed to develop key competences necessary for personal development and success of each member of society. Therefore, in addition to traditional, perhaps best methods and forms come into the forefront more participatory and inquiry- based approaches that encourage creative approach to teaching and emphasize their own initiative pupils.

Unique role of a comprehensive scientific excursion channeled to various locations in order to accomplish a pre- assigned tasks and sophisticated science and social character. A new look in this direction provide natural areas or nature trails where students can explore, understand and assess phenomena in a broader context with regard to their natural, economic or social importance. This direct and indirect nature study research methods, practical activities, especially experimental enables pupils to create complex scientific skills and competencies. It helps students develop the intellectual gradual transition from a predominantly illustrative exploring the world around to explore the rational, abstract. The issue is also discussed in the research part of the thesis , which at the same time using descriptive and comparative questionnaire survey, the general and specific aspects of science excursions and their application to different degrees and types of schools in the Czech Republic. The percentage results pointed to some shifts, stagnation, or trends that occurred during the years 2006-2011.

The operational objective of the survey was to find out the specific problems and needs of the respondents on the basis of them make a variety of educational documents and materials for teachers and their students, which should serve to develop activation methods and forms with elements of research work not only in natural environments. For this purpose, the complex processing of two nature trails with a focus purely chemical in the Plzeňsku. Each trail has been created educational materials for interactive work in nature and in the laboratory, serving teachers and their pupils, which are often part of this work and its annexes. This issue is still further processed and developed to further the nature trail to serve the development of chemical education.

Key words: the development of competencies in scientific education, activating methods, survey, field trips, nature trails

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