

Abstract

This thesis is focused on the use of geospatial tools in secondary schools in Czech republic. Subject of study are mainly Geographic information systems (GIS) and Remote sensing and their implementation into secondary school curricula. Application a research in this area is in the centre of interest of IGU. Previous works showed, that GIS has great potential to contribute to effective learning of geographic concepts, knowledge and GIS can be a tool for display, inquiry and analysis in problem based learning.

The main goal is to explore the current state of geoinformatics involvement in teaching in secondary schools and to identify how to develop this condition at all levels of the curriculum (intended, implemented and attained). In order to achieve this general objective in thesis are chosen for each level of curriculum following goals:

- 1) At the level of intended curriculum we are dealing with two questions: At first, how is geoinformatic's topic presented in national's curriculum of a selected countries. At second, which geoinformatic skills should be acquired by secondary school's students. The main method is content analysis of documents.
- 2) At the level of implemented curriculum we try to provide findings regarding the current state of proliferation of the GIS software at Czech grammar schools and also the barriers, which determine of further expansion of its use. The main method is quantitative analyze of questionnaire to determine implementation profile.
- 3) At the level of attained curriculum we solve on the example of geographical project utilizing mobile GIS technology quality of student's outputs, strategy of mapping and student's attitudes towards these technologies. Also we are dealing with student's attitudes towards geoinformatics and their experiences with these technologies. Data was gathered while case studies.

At the level of intended curriculum the results of the document's comparsion shows, that according to selected criteria exceeds qualitatively American documentary GESP (2012) other reporting documents from Canada, Czechia, England, Finland and Germany. Czech RVP G can be in terms of quantity and quality of representation of geoinformatics topics identified as one of the weakest of the group studied documents. For part of the implemented curriculum we can say, that the majority of Czech grammar schools is in the implementation of GIS into teaching in the development stage. Technical factors are no longer the limiting factor for expansion. Very important is awareness of teachers about the possibilities of GIS applications in education, available data and software. In part of attained curriculum results shows, that the quality of teaching using GIS is influenced by many factors, especially a characteristics of teacher, technical support, time allocation and attitudes of students.

Key words: Geoinformatics, GIS, curriculum, geography education, didactics