

Abstract for the AutoCarto 2014 in Pittsburgh, Pennsylvania, October 6 – 8 2014:

The Potential of Web-based School Atlases in GIS education

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Keywords: Geoprocessing, Web-Atlas, Education, Usability

During the last years curricula in geography for secondary school levels have changed fundamentally in many countries. The use of Geographical Information Systems (GIS) for teaching purposes is getting more and more common. Hence, various teaching material covering this topic has been published. Often, these existing schoolbooks focus on teaching GIS fundamentals by the use of professional GIS software, which overburdens both students and teachers. However, map use has been an important issue in curricula for many years and well-established school atlases are widespread. Many editors of such school atlases published interactive atlas applications, such as the well-established "Swiss World Atlas" with its digital complement, the "Swiss World Atlas interactive". Regrettably, the GIS functionality in these applications is often limited to e.g. zooming and panning maps or querying map contents.

This paper presents ideas how to bridge professional GIS software and digital school atlas applications by implementing geoprocessing tools for the latter. Thus, an overview on existing interactive (school) atlas applications is given, which analyzes the software architecture, compares the different solutions for different hardware devices and lists the GIS functionality in these interactive atlas systems. This analysis then leads to a catalogue with geoprocessing functions that will help to fulfill the curricular demands. This includes feature editing, density analysis, measuring distances and more. In next generation "Swiss World Atlas interactive" prototype, several geoprocessing functions are implemented as user-friendly tools in a web application. It will be shown how such an interactive web-based school atlas can be used as a platform for an innovative, didactically sound GIS and how both students and teachers benefit from this coherent teaching aid. Furthermore, it will be presented how the curricular requirements can be achieved.

Considered conference topics:

Web-based Cartography, National and Regional Paper and Digital Atlases, Map Use and Design