GEOGAMES – A fun-based concept to interest grammar school students in Spatial Sciences

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THE PROJECT

This paper presents the concept of a gaming event, the so called *GEOGAMES*, focusing on the application of different geospatial technologies in order to interest grammar school students in spatial sciences. This spatial gaming event is part of the initiative *GIS in EDUCATION*. In this initiative founded in 2004 the Department of Education of the Provincial Government of Carinthia, the Carinthian Geographic Information System KAGIS and the School of Geoinformation at Carinthia Tech Institute formed a network with the goal to promote the use of Geographic Information Systems (GIS) in schools. We focus on the application of GIS one the one hand in the subjects geography and information technology and on the other hand in interdisciplinary projects using GIS primarily as a tool for data integration and visualizing project results. The activities of the network range from "*Train the Teacher*"- programs, project-based learning with GIS at schools in university-school partnership projects, the development of learning materials for different age groups (primary school – grammar school), provision of various local thematic GIS data sets, the handling of the organization of educational GIS software licenses to providing expert contact for specific questions concerning the implementation of individual GIS- projects. Furthermore, every school in Carinthia was given a comprehensive GIS starter package, the so called GIS BOX (Scheriau 2006).
The GEOGAMES were held the first time in June 2006 with more than 120 students between 14 and 16 years old participating. The idea was to present a fun- based approach to the students to explore the exciting world of geospatial technology interactively. 4 different thematic stops were developed and organized by experts of the network. These stops were:

GIS online - Web Mapping with Carinthia Atlas

The students used the online GIS of the local government of Carinthia, the so called Carinthia Atlas, to explore their local environment and solved questions like "Where do I live?" or "Which fish species lives in Lake Ossiachersee?" Furthermore, they got an overview about the functionality and the rich available thematic data sets and how they could use them in their daily school work.

Google Earth – We are watching you

This platform was used to present and discuss through hands-on examples different aspects of satellite images and remote sensing like availability, resolution, up-to-dateness and privacy issues. Furthermore, the students took a virtual trip around the world to the most famous tourist sites and to all the venues of the world soccer championships in Germany.

RFID – Digital Spatial Riddle Quiz

In this team game we used RFID (Radio Frequency Identification) technology and mobile PDA's (Personal Digital Assistant) to set up a riddle route within the building where the students had first to find several hidden RFID tags and then to answer a question at every tag found.

Geocaching – Find the treasure with GPS

GEOCACHING and GPS are becoming more and more interesting to the public. Here GPS is used to find a treasure whose location is given by geographic coordinates and a textual description.

CONCLUSION

We found the GEOGAMES concept an interesting alternative approach to present the broad areas of application of geospatial technology to young non-experts compared to traditional presentations and class-room lectures. The location-based games "Geocaching" and "RFID – Spatial Riddle Quiz" introduced the locomotion of players and thus the physical effort characteristic of sportive activities in contrast to the stationary web-based stops in the computer labs where the element of motion is missing similar to traditional joy-stick based interactive console games (Schlieder et al. 2006). We received a very good feedback from the pupils and accompanying teachers as well, which encouraged us to repeat this event in 2007.

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