ACTIVE AND SELF-CONTROLLED WEB BASED EDUCATION IN GIS-TECHNOLOGY AND CARTOGRAPHY: THE 'GITTA' PROJECT

Marion Werner, Boris Stern

Institute of Cartography
Swiss Federal Institute of Technology (ETH)
ETH Hoenggerberg
CH-8093 Zurich, Switzerland
phone: +41-1-6333033
fax: +41-1-6331153
werner@karto.baug.ethz.ch
stern@karto.baug.ethz.ch

Due to the increasing demand for spatial information for solving problems in private and public life, GIST [Geographic Information Systems & Technology] is a trans- and multidisciplinary field of global interest. In times of guidance by visual attraction, contemporary GIS-education has the additionally need to impart professional techniques in mapping. This includes aesthetic design principles founded on human perception to guarantee high-end map products that meet the claim of public and scientific requirements.

The 'GITTA-project' [Geographic Information Technology Training Alliance] was initiated by the 'Swiss Virtual Campus' program in 2001, unifying 11 partners nation-wide. It focuses on supplying an interactively programmed and IT-based, multilingual learning environment to reach students of all disciplines interested in handling spatial difficulties. The course is designed to cope with increasing numbers of students for all levels and types of academic curricula. It attempts to create substitutes for ex-cathedra teaching in order to free up valuable time for coaching and tutoring tasks.

To transfer the learning process, in accordance with classic didactics, into an e-learning version, a consistent educational structure is most important not only for orientation but also for a positive result in course completion. Content creation, e.g., principles of cartographic design, thematic cartography and visualisation of spatial data, has to be organised infinitely more beforehand to avoid confusion afterwards. Online class material - for either class accompanying use or for preparation preliminary to lectures - provides students with a virtual mobility that enables them to play an active role in the learning process. Those reasons, and the need for flexibility to re-arrange 'learning blocks' due to different end-user requirements, call for an entirely modular system with course units adapted to the ECLASSS-structure [Entry, Clarify, Look, Act, Share, Self-Assessment, Summary].

Studies in cartography and GIST with GITTA are no longer static-, reactive- or text-based learning but a multimedia-enriched course. Interactions, animations, as well as self-assessments open students the opportunity for self-exploration. Whiteboard group discussion and testing is now possible via new web technologies. By accomplishing those tests at the end of each unit, immediate feedback can be given to the student.

An adapted instructional design leads into the course environment, divided into 3 major modules accompanied by real-world case studies. Communicating and integrating this cartographic content, bridges the gap between technical understanding of GIS and the creative design process in cartography.

This innovative concept for teaching cartography and GIS allows students to guide themselves through continually updated content whenever they have time and on which continent they are, in their own speed and without redundancy.