

Teaching GIS in Central Asia

Navigating the Future of Survey Education

Educational Network

26 – 28 February, 2009
Vienna - Austria



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- Supported by Austrian government
 - Scholarships
 - Projects
 - summer schools
- 113 member institutions
- Participation since 2008
- Events in Bishkek and Kathmandu
- Teaching
 - Applied GIS
 - Location Based Services
 - Visualization of geodata

Experiences Bishkek

- 2nd Central Asia GIS Conference
- GIS for the future of Central Asia
- Initiation of Austria-Central Asia Centre for GIScience

Experiences

- English language problems of Central Asian participants
- Lack of GI-knowledge and technology
- Barely financial background for scientific projects



Initiation: Head of Kyrgyz university and Austrian ambassador in Central Asia



Participants of 2nd GISCA'08

Experiences Kathmandu

- “Train-the-trainers” Workshop
 - *Geoinformatics for Mountain Environment Management (mountainGIS)*
 - organized by ICIMOD

- Topics covered by TUG:
 - Forest Growth Modelling
 - Forest inventory

} with GIS



- Experiences:
 - Commercial GIS do not have a sustainable learning effect – no license at home!
 - Maintain balance: theory ↔ practice

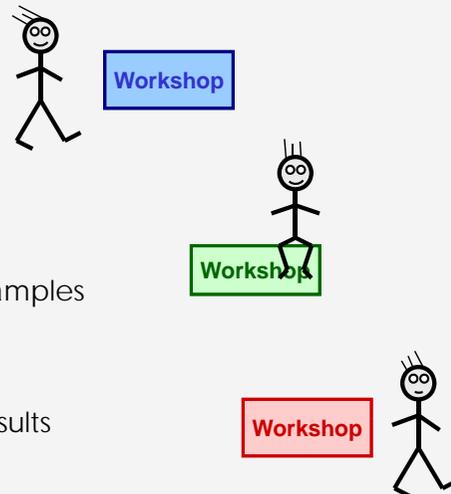
- Initiate “sustainable” learning
 - profound theoretical background
 - Know-how to apply theory to “real-world” problems
 - **Problem Based Learning (PBL)** (e.g. Kopp & Mandl 2002, Car 2004)

- Instructional vs. constructivist view
 - Learner has active position
 - Frontal lessons have a minor role
 - Process of learning is a social process
 - overcome the creation of inert knowledge

- The “perfect” PBL environment (Reinmann-Rothmeier and Mandl 2001)
 - Authenticity and reference to application
 - Multiple contexts and perspectives
 - Social learning arrangements
 - Work in groups
- PBL means a balanced combination of instructional and constructivist view

- Teaching GIS in CA:
 - Work on problems related to the region increases student’s interest
 - Focus on applying theory in projects and “learning by doing”

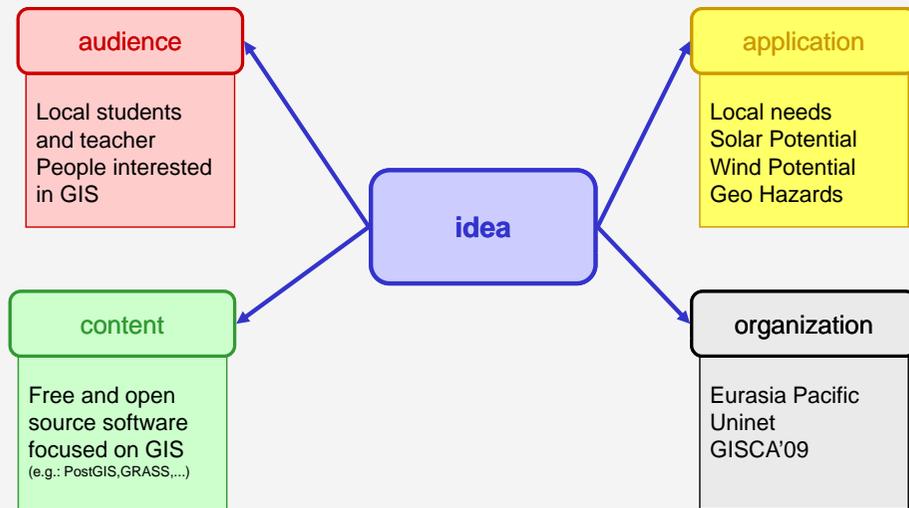
- Mentoring Phases
 - Pre-Workshop
 - Preparation
 - Communication
 - Workshop
 - Lecture notes
 - Lab introduction, data samples
 - Post-Workshop
 - Archive for documents
 - Documentation of lab results
 - Evaluation for certificate



- TeachCenter
 - Learning Platform
 - Administration
 - Communication
 - Data exchange for lecturer and participants
 - Evaluation function (e.g.: multiple choice test)

- LearnLand (TU Graz)
 - Web space for blogging
 - Documentation of lab and project work
 - Social networking





- Project Proposal *openSolarCA'09*
 - Satellite workshop to GISCA'09
 - Potential lecturers
 - ÖAW, TU Graz, TU Wien, Uni Graz, Uni Klagenfurt, BOKU, FH Joanneum, FH Kärnten, ...
 - Planned Modules (interdisciplinary)
 - FOSS GIS, power supply, solar energy, solar technologies, project work, ...
 - Possibly funded by *Eurasia Pacific Uninet*
(Proposal evaluation result: end of March 2009)

- Kyrgyzstan, Tajikistan → agricultural dominated
- Kazakhstan, Turkmenistan, Uzbekistan → raw materials (Oil & Gas, minerals)
- Russian-dominated history
- Nations tend today to Russia and Europe (Turkey)



<http://www.lib.utexas.edu>

Economic and ecologic potential

- Solar, wind and hydro potential
- Unaffected landscapes
- Tourism



Solar and wind potential



Hydro potential



Potential in tourism

Future initiatives

- Projects for social benefit
 - e.g. openSolarGIS
- Central Asians contacts to Western Europe
 - e.g. GISCA '09

Support of

- Sustainable development of Central Asian countries
- Protection and conservation of nature



Social benefit



Central Asian – European contacts



Conservation of nature

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