Open Education – the GITTA journey

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• GITTA – sharing the experience

• Open… – terms & meanings

• Focus on **Content** – incl. GITTA content development initiative
Overview of available modules

If no links are shown on this page, you have to subscribe to the GITTA newsletter to get full access.

The GITTA teaching material on the website is continuously updated from the CVS repository and corresponds to the latest version. This means that content may change at any time if it is updated. If you need stable content, e.g. to teach classes, you are strongly advised to download the module(s) as SCORM / IMS package and import it into a learning environment such as Moodle or OLAT. Please contact the GITTA coordinator if you need an older version.

The GITTA modules

The CartouChe modules

Gi-Systems Module

The module offers a basic introduction to Geographic Information Systems Technology (GIST), and provides information about existing commercial products and their areas of application. The module is also intended to explain the most commonly followed software architectures of Geographic Information Systems (GIS) and their impact on system usage.

Basic Level (in English)

1. What is a GIS?
   - 1MB
   - IMS (.zip)
   - SCORM (.zip)
   - [all versions]

2. What do we need to work with a GIS?
   - 1MB
   - IMS (.zip)
   - SCORM (.zip)
   - [all versions]

3. Into the GIS market
   - 0.5MB
   - IMS (.zip)
   - SCORM (.zip)
   - [all versions]
The SVC at a glance

The Swiss Virtual Campus (SVC) promotes learning over the Internet at the Swiss Institutions of Higher Education (Universities, Universities of Applied Sciences, Swiss Federal Institutes of Technology). Students are no longer tied to a programme of lectures with set times and locations; they can acquire knowledge whenever and wherever they choose.

Subject specialists as well as experts on education and didactic methods ensure high course quality outside the framework of conventional lectures. Multilingual modules and cooperation between institutions of higher education take account of the special conditions in Switzerland. Competence Centres are set up to support project development.

A total of 112 online courses, covering a wide spectrum of disciplines, were developed in the two phases of the program.

> SVC Program Contents
Internet

Obviously, students must have the necessary hardware available if they are to do the SVC courses. Doesn’t this imply the risk of a financial numerus clausus? Can all students afford their own computer? Actually, ownership of or access to a computer (for example, at home or in lodgings) can be taken for granted nowadays. But there are nevertheless a limited number of computers available at universities as well.

- The Swiss Virtual Campus (SVC) project has been well received in academia.
- Good press both inside and outside educational establishments.
- Teachers are more aware of the potential of online education.
- Communication between project partners is much better than expected.
- Various institutions of higher education are willing to work together.
- Occasionally there are difficulties in reaching agreement on content and content structure.
- The professionalism of some ad-hoc development teams could be improved.
- Recruitment of qualified personnel is a serious problem.
- Implementation costs seem rather high.
- There is a general lack of an online education culture.

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1.1.3. Lessons

BSM
1. Overview of modeling process (FR)
2. Spatial Perception and Modeling (FR)
3. Fundamental Spatial Concepts (FR)
4. Spatial Information and its Propagation (FR)
5. Digital Models (FR)
6. Conceptual Modeling (FR)

BDM
1. Introduction to Database Systems (DE) - (EN) - (FR)
2. Database system concepts and architecture (DE) - (EN) - (FR)
3. Logical modeling: the relational data model (DE) - (EN) - (FR)
4. Relational Query Language (DE) - (EN)

Implementation structure


www.elml.ch
The GITTA Association

On November 16th, 2006 the association for promoting GITTA (in German "Förderverein") was founded at the Institute of Geography of the University of Bern. This new GITTA Association is open to every active member or sponsor interested in using, updating and/or promoting GITTA materials. The statutes, membership fee, contact person etc. can be found on this page.

The bylaws of the GITTA Association can be downloaded in German or in English. Consider that the English version is just a translation. Legal standard remains the German original. The minutes of the founders meeting are available in German only.

Steering committee

The steering committee consists of up to 7 persons elected by the general assembly for two years. The current committee consists of:

Goal: attract interested members to use and update content - sustainability

www.gitta.info
Open Content

Attribution-NonCommercial-ShareAlike
2.5 Generic (CC BY-NC-SA 2.5)

You are free to:
Share — copy and redistribute the material in any medium or format
Adapt — remix, transform, and build upon the material
The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:
Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

NonCommercial — You may not use the material for commercial purposes.

ShareAlike — If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original.

https://creativecommons.org/licenses/by-nc-sa/2.5/deed.en
Wikipedia:

«Open education is education without academic admission requirements and is typically offered online.

Open education broadens access to the learning and training traditionally offered through formal education systems. The qualifier "open" refers to the elimination of barriers that can preclude both opportunities and recognition for participation in institution-based learning. One aspect of openness or "opening up" education is the development and adoption of open educational resources.»

web-based / digital

Open Education

MIT OpenCourseWare

Open educational resources OER

Massive Open Online Courses (MOOCs)
web-based / digital

Open Education

MIT OpenCourseWare

Open educational resources OER

Massive Open Online Courses (MOOCs)

MOOCs

https://en.wikipedia.org/wiki/Massive_open_online_course
Focus on Content
developing interactive ‘goodies’ for learning and teaching defined theoretical aspects

> apply for funding (short proposal to the GITTA Association Steering Committee)
ThemCarto Tool

Data
Choose data...

Standardisation
Choose standardisation...

Classification
Choose classification...

Spatial Units
Choose spatial units...

Classes

Legend

Data sources: swisstopo, GEOSTAT, OpenStreetMap

http://geovis.ch/themCarto/
A potential lesson from visualization

Hans Rosling’s ‘The Joy of Stats’

«…I know having the data is not enough. I have to show it in ways people both enjoy and understand.»

https://www.youtube.com/watch?v=jbkSRLYSojo
Five story telling strategies

- Keep It Real With Real-Life Stories
- Make Learning Fun With Illustrated Stories
- Boost Interactivity With Game-Based Stories
- Engage Learners With Animated Stories
- Deliver Inspirational Training With Open-Ended Stories

Story I - MAUP

The modifiable area unit problem (MAUP) describes how the aggregation of point-based data in areal units is influenced by the shape and size of the chosen areal units. To illustrate the problem try the following using the drop-down boxes in the interface below.

1. Data: Select „Uniform data grid 1“ It shows you an evenly distributed grid of data points.
2. Standardisation: Select „None“
3. Classification: Select „Equal Intervals“
4. Areal units: Select „50km Grid“

Alternatively, do all above steps together by clicking here.

The result is a homogeneously coloured array of 50km grid cells. Each of the grid cells contains 25 data points. Thus the regular arrangement of data points, where the same number of data points falls in each grid cell, is reflected in the homogeneous colouring of the grid cells.

Let's play with different areal units to illustrate the MAUP (modifiable area unit problem).

What happens when you change the areal units to „25km Grid“ (without changing any of the other options)? [change]  [show answer]

What happens when you change the areal units to „Cantons“ and class number to 5? (Note: Cantons are administrative units of different sizes in Switzerland.) [change]  [show answer]

Data is often provided in administrative units and it is not possible to access the underlying data points to experiment with different aggregations. Which type of administrative unit (in terms of size and shape) would be most useful in displaying those data? [change]  [show answer]
Modifiable Area Unit Problem
Story telling for self-guided learning

http://geovis.ch/themCarto/
Modifiable Area Unit Problem
Story telling for self-guided learning

Story II - Standardisation

Data standardisation adjusts absolute data values to account for varying sizes of the spatial units employed (see also Story I – MAUP). Generally, choropleth maps are best when showing categorical data. Such data is often the same across the whole area of a spatial unit, e.g. the currency of a country. However, choropleth maps are frequently also used to show quantitative data, such as counts of things, e.g. museums. To illustrate the problems that can arise from mapping quantitative data try the following using the drop-down boxes in the interface below.

1. Data: Select „Museums“
2. Standardisation: Select „None“. We will explore the options for standardisation later.
3. Classification: Select „Equal Intervals“
4. Areal units: Select „Cantons“ (Note: Cantons are administrative units of different sizes in Switzerland.)

Alternatively, do all above steps together by clicking here.

This results in differently coloured cantons depending on the number of museums in each canton. However, the size and shape of a canton may influence how many museums are aggregated. Let’s explore different ways to remove this influence.

What happens when you change the spatial units to “25km Grid” (without changing any of the other options)? [change] [show answer]

Choosing similarly sized and shaped spatial units and aggregate the underlying data is not always possible. Sometimes the data is only available as counts per administrative units. Then there is the option of standardising. What happens if you switch back to the spatial units “Cantons“ and choose Standardisation “Area (km2)“? [change] [hide answer]

There is one very small canton to the north that, in relation to its size, has most museums. There the museum density per km2 is highest.

http://geovis.ch/themCarto/
Modifiable Area Unit Problem
Story telling for self-guided learning

http://geovis.ch/themCarto/
Summary & Conclusions

- GITTA and its journey – one example of eLearning/open content in Switzerland
- Swiss Virtual Campus Initiative!

- Collaboration – talk about content as well as ways of teaching and learning!
- Contents for **self-guided learning**
  - at my own pace – videos?
  - story telling and ‘hands-on’ / exploration

Unsolved?
- Cost of implementation or who does the implementation?
- Culture of teaching and learning
- Benefits of Open Education & Co?