GEOLOCATED LEARNING ENVIRONMENTS AND CAPACITY BUILDING FOR TAILORED SUPPORT IN THE CONTEXT OF AN OPEN WEB INDEX

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# Learning Environments & Capacity Building

Capacity Building

- Building of local capacities in form of technical, organizational, advocacy skills on individual and community levels (United Nations, 2006) to guarantee active involvement in decision making processes
- includes the use of a **local- and target group specific learning environment** that can strongly be supported by the use of an OWI

Learning Environment

extension of the usual term task, essentially a work situation as a whole, which should enable and support active discovery and social learning (Wollring, 2008)

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5 Examples
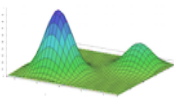
1 – Celestial Bodies – Learning Environment – Mutfried Hartmann

2 – Real-World Laboratory: Queichland – Marc B. Rieger & Björn Risch

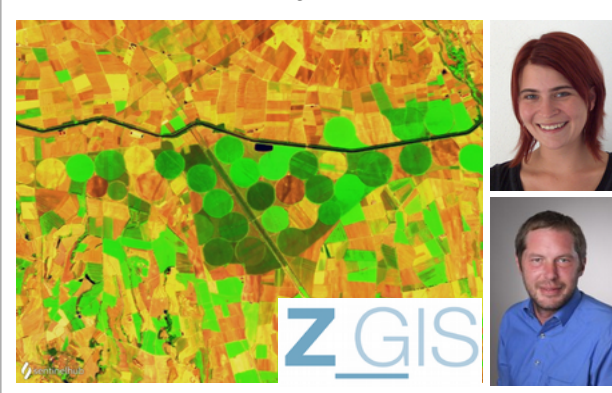Reallabor Queichland
WasErforschen

3 – Geocaching-Project – M. Platz

4 – Mathematical Environmental Lab – Jörg Rapp & Melanie Platz

$$\int^x |f|^p \, d\mu$$

Students of mathematics for teaching profession: **multiplicators in school**

Pupils highly talented in mathematics: **students in future**

Modelling of a regionalized problem

Students of environmental sciences: **thesis and interdisciplinary work**
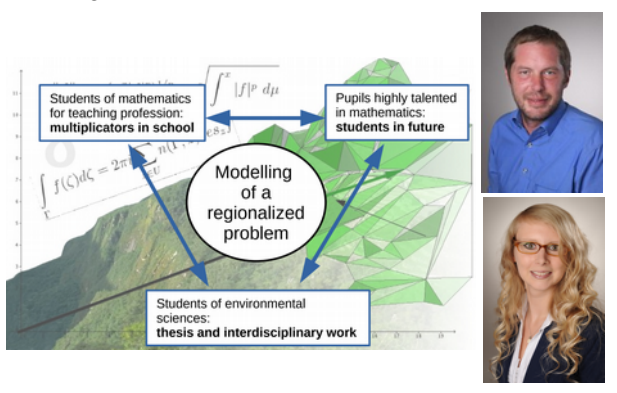
5 – Geolocation & Health Issues – Barbara Riedler & Jörg Rapp
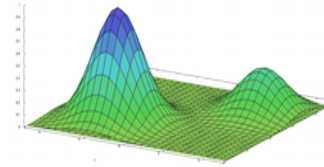
Z_GIS

Think Globally

–

Act Locally

Kefalas, 1998

Geolocation for Web Content - SDSL

Open Web Index (OWI)

Spatial Decision Support Layer (SDSL)

tailored spatial support through locally or regionally relevant search results

e.g. **SAL1 (e.g. water)** and **SAL2 (e.g. sanitation)**

Spatial Assignment Layers (SALs)

generalized approach of assigning spatial keywords (e.g. Europe, Switzerland, Berlin or 48°14′05″N 16°25′01″E) to a web content

Spatial Quality of Information (SAL 1)

SAL1 (e.g. water)

Dynamically maintained and digitally signed by scientific group

Spatial Quality of Information (SAL 2)

SAL2 (e.g. sanitation)

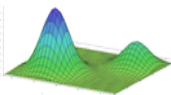Dynamically maintained and digitally signed by scientific group

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Requirements & Constraints of SDSLS: Example

Real World Lab Queichland ~8 acres

Legende
- 🖼 360° Posts
- ⬛ Blue Classroom
- 🔴 Open-air Mobile
- 🟡 SDG Hotels
- ⭐ Succession area
- 🟢 Urban Gardening

SDGs

„CO₂ - fishing rod"

Experiment-Café

Urban Gardening

Badge-System

Open-air mobile

SDG-Hotels

Environmental course

Requirements & Constraints of SDSLS: Example

What can educational institutions contribute to an open web index?

Online learning materials and resources like:

- Location-based learning content for environmental phenomena
- Open educational resources for global capacity building
- Educational virtual and augmented reality content to immediately interact with and learn from your local environment
- […]
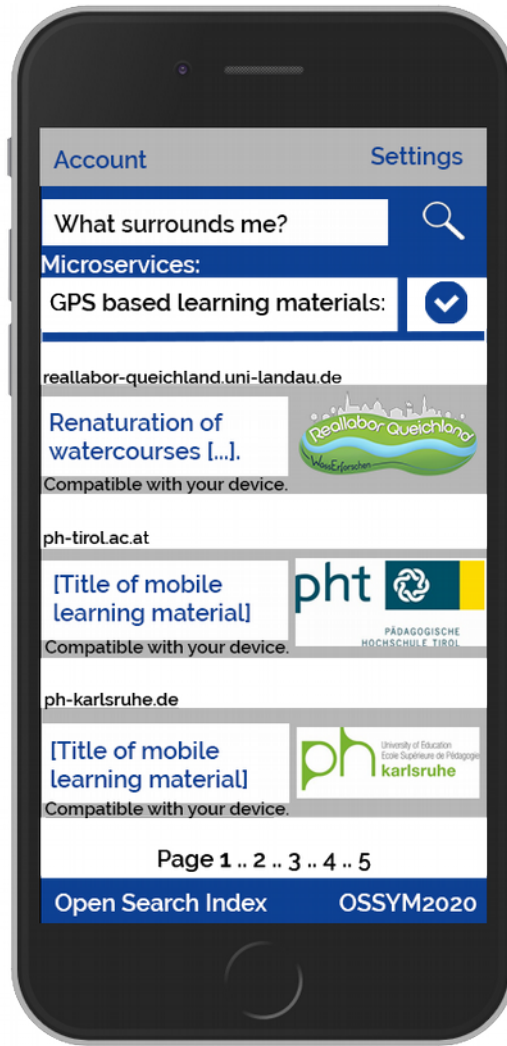
| Retrieve Information | Populate with Information |
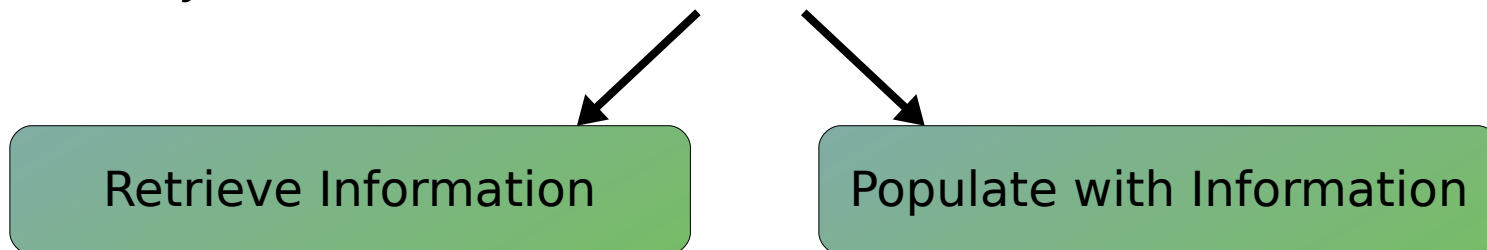
Requirements & Constraints of SDSLS: Example

- What is this?
- How is it caused?
- Where can I find Information despite the fact that I have no clue what it is?

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Requirements & Constraints of SDSLS: Example

Settings for additional options like microservices and profile control

Search field

Activated GPS-based microservice with spatial decision support layer (SDSL)

Search results and validated learning resources
- Manually managed by a scientific group
- Indexed according to relevance, state of the art research/ technology/ development/ etc. and geolocation
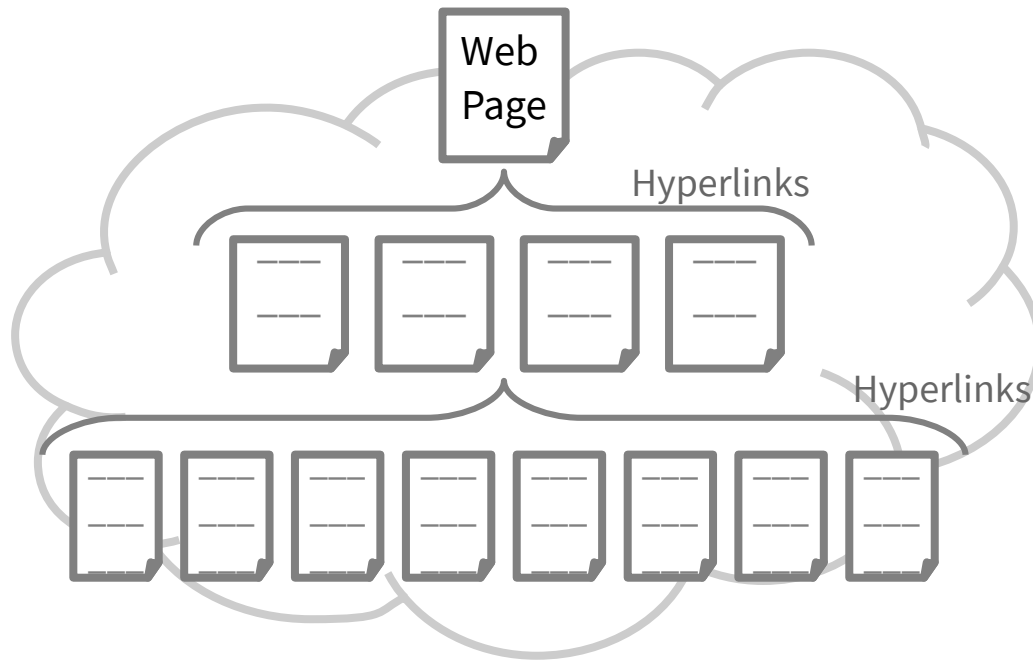- Equipped with a digital signature
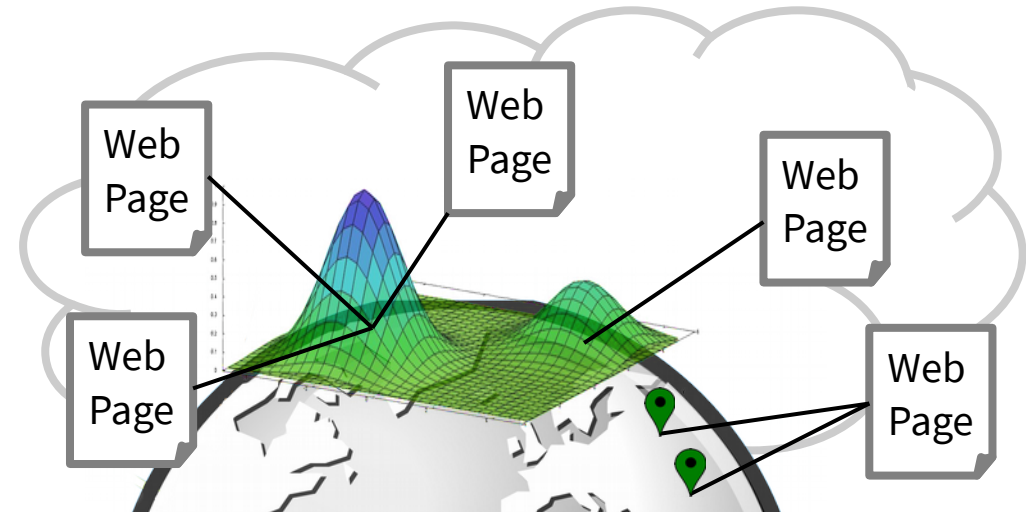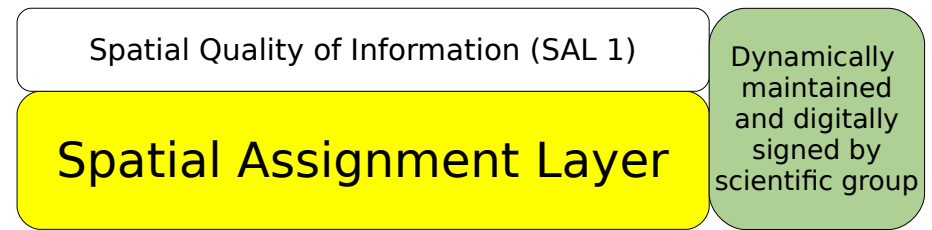
Footer

Conclusions

Traditional Web Crawler

Automated Script

Scientifically Managed Approach

Scientific group;
Criteria: relevance, quality, state of the art research/
technology/development/etc., geolocation

Spatial Quality of Information (SAL 1)

Spatial Assignment Layer

Dynamically maintained and digitally signed by scientific group

Contact Details

Thank you very much for your attention!

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Images:

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