Linked Open Data

- the raw material of tomorrow’s digital learning resources?
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A project called:

Linked and Open Data for Schools
(+Wild + GLID)
The objective

To increase the use and access to (Linked) Open Data in schools.
Outcomes

Develop a “support package” for actors that want to publish data, or use data published by others to develop pedagogical content or services:

- Best Practice & Guidelines
- Relevant “domain” standards (e.g. EMIL, MLR mfl.)
- Tools & software
- Examples and demonstrators (three prototypes)
- Several LOD Data Sources
The project started in January 2013 and will end in December 2013.
Linked Open Data

*Why is it important for schools?*
But first...

... some definitions
Open data is the idea that certain data should be freely available to everyone to use and republish as they wish, without restrictions from copyright, patents or other mechanisms of control.

- The Open Knowledge Foundation
Linked Data (LD) is a method of publishing structured data so that it can be interlinked. Rather than to serve web pages for human readers, it’s about sharing information in a way that can be read automatically by computers.

- Wikipedia
Making data digitally available and digitally **useful**!

1. Data is made available in any data format.
2. Data is made available in a structured and machine readable data format.
3. As level 2, but in a non proprietary data format.
4. As in step 2-3, including open W3C-standards (RDF, SPARQL) to identify things in order for others to link to them.
5. As in step 1-4, and links to others data for context.

The four Linked Data principles

1. Use URIs to denote things.

2. Use HTTP URIs so that these things can be referred to and looked up ("dereferenced") by people and user agents.

3. Provide useful information about the thing when its URI is dereferenced, leveraging standards such as RDF, SPARQL.

4. Include links to other related things (using their URIs) when publishing data on the Web.

Constructing a Cloud Service for the curriculum (Styrdokument Online)
Steering documents for Swedish schools

The School law

Curriculum

Syllabus

Timetable

Local steering documents

PDP (IUP) Lesson Plans etc
Matematik

http://dbpedia.org/matematik

consist of

förmåga att använda matematik i olika sammanhang

http://styrdokumentonline.se/8847

Counting and Cardinality

http://purl.org/ASN/resources/S1143409

is similar to

positionssystemet

http://dbpedia.org/positionssystemet

has a definition

Hur positionssystemet kan användas för att beskriva naturliga tal...

http://styrdokumentonline.se/67867

Del av helhet och del av antal...

http://styrdokumentonline.se/7584

S1143409
Styrdokument som ”molntjänst”

Styrdokument Online

Linked Open Data (LOD)
- Accessible via API:s and RDF

Find all learning resources that matches Learning Objective x and Mark Criteria y for Math 9th grade.

All Knowledge Demands in Math for 5th grade that matches Learning Resource x

Connect work task x and Knowledge Demands y for nursing course Y for gymnasiets’ apprentice training.

The Spider

Educational Publisher

Other Web Service (e.g. GLID)

API (RESTful)

2- Search for Learning Resources as in scenario 1
Why do schools need Linked Open Data?
Open Linked Data as raw material

There is a lot of useful data out there, but it needs to be made available and digitally useful!!
Educational publishers

What will be in their future?

Do they have a future?
What is a digital Learning Resource?

Where is the border between, software, Web Service, system, content etc...??
Pedagogical Packaging!

Contextualization of existing data and resources!
Mix, match and reuse!

- We recognize this...
Examples of data sources & resulting services from the project

- The school curriculum and syllabus
- Digital Learning Resource metadata (the Spider)
- Apprentice Training (GLID)
- Processes in School Administration (samordnad informationsarkitektur)
- The Media Web (Mediawebben)
Questions are guaranteed in life; Answers aren't.