

GNU Edu: Educational metadata, languages, cultures, freedom

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- 1 Educational metadata and their modelling
 - Models and standards
- 2 Internationalization
 - Language .. and culture !
 - GNU Edu system
- 3 Freedom



Outline

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A few figures

- Google
 - about 52,900,000 for *triangle*
 - about 113,000 for *pythagora* + about 765,000 for *pythagore*
- Educational resource servers
 - Sésamath : 2738 resources, just for mathematics @high school <http://mathadoc.sesamath.net/site.php?site=1>



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Educational Subjects

- Just a topic ?



Educational Subjects

- Just a topic ?
- Subject & Institution
 - state decision
 - country, school system



Educational Subjects

- Just a topic ?
- Subject & Institution
 - state decision
 - country, school system
- Subjects Hierarchy
 - Science
 - Mathematics
 - Algebra
 - Linear Algebra
 - Matrix Theory
 - Singular value decomposition



The variety of (educational) metadata

- Multi-purpose
 - General : title, description ..
 - Technical : format, required software
 - Legal : author(s), rights ..
 - Cataloging : URL, identifier, ..
- Specialized
 - subject
 - audience
 - learning resource type (course/exercise/assessment)
 - difficulty level
 - educational context and use



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Introduction to vocabularies

What to say vs How to say

- **Controlled vocabulary**
 - limited list
 - specified synonyms
- **Taxonomy**
 - Parent relationships (specialize/generalize)
 - Exple : linnean classification for living things (genus+specie), cf <http://en.wikipedia.org/wiki/Bird>
- **Thesaurus**
 - More relationships (ex : uses, requires, ..)



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Dublin Core

- wide consensus, Dublin (Ohio), 1995
- 15 base elements
 - title, language, subject, coverage, description,
 - creator, contributor, date
 - format, type
 - publisher, rights, source
 - identifier, relation
- for vocabularies, refers to applicable pre-existing standards (RFC 3066, MIME)
- 40 other elements or element refinements
- <http://dublincore.org/documents/dcmi-terms/>



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LOM

- IEEE LTSC, 2002
- a good, complete description
- not many vocabularies
 - ex. “interactivity” : active/expositive/mixed
 - Learning Resource Type ? Subject ?
- [http ://ltsc.ieee.org/wg12/materials.html](http://ltsc.ieee.org/wg12/materials.html)



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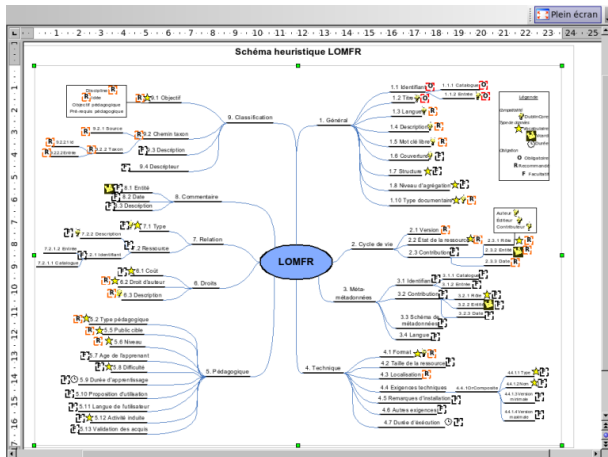


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LOM (2)



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Language

- Translate resources ?
- Keyword search
- Curriculum search



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Levels & curricula

- A variety of school systems
 - depends on the country
 - depends on the kind of school
- Exple : elementary theory of probability
 - @12 yrs old in Germany
 - @16 yrs old in France



GNU Edu system & standards

- complies with Dublin Core
- complies with LOM
- cf <http://www.ofset.org/gnuedulom>



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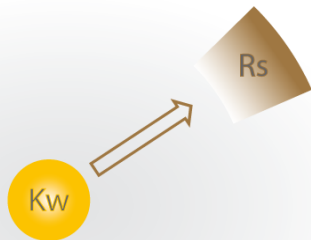
GNU Edu metadata

- keyword “draw”, “bisector”
- skill “draw a angle bisector with ruler and compass”
- curriculum “Le programme de latin du cycle central”



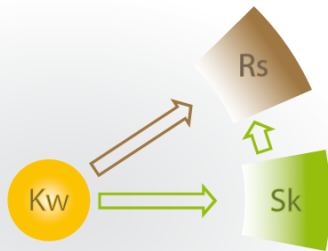
GNU Edu : searching (1)

Keywords



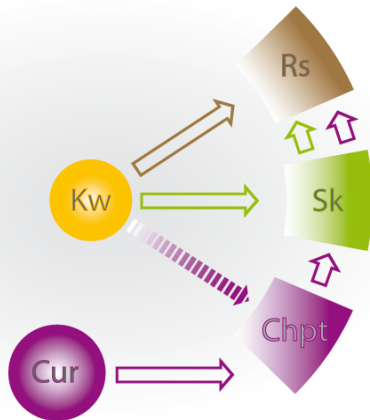
GNU Edu : searching (2)

Skills



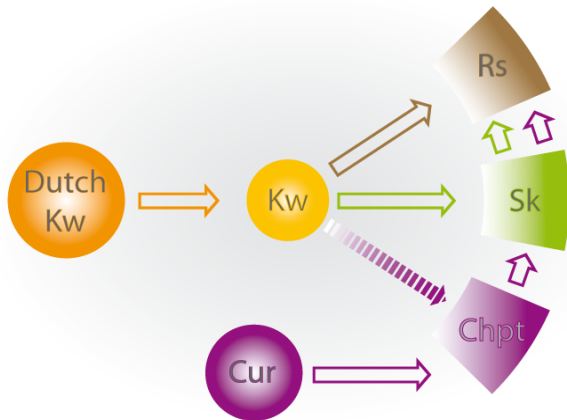
GNU Edu : searching (3)

Curricula



GNU Edu : searching (4)

I18N



GNU Edu : keyword translation

- Translation vs Equivalent
- Default vs Contextual Translation



GNU Edu : importing free dictionaries

- freedict.org
- vortaro
- pydict



Inversion, triangulation

- Inversion
- Triangulation
- 8000 keywords, 10 languages, 12000 translations



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Release or not ?

Some projects

- use free software but do not release anything
- release their code but keep proprietary rights on all data
- release resources with no license (= proprietary)
- release resources and change licenses (!)
- release “free” resources with closed formats
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Free Software Philosophy

4 FREEDOMS

- run
- study
- redistribute
- improve



Share the data !

- (Code)
- Documents
 - License
 - Format
- Metadata
 - Vocabularies
 - Thesaurus (keywords, skills ..)
 - Resource metadata file



Let's stay connected !

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