


Sharing and Linking Medical Educational Resources on the Semantic Web – The MetaMorphosis Network Experience



E. Kaldoudi, N. Dovrolis

School of Medicine

Democritus University of Thrace

Alexandroupolis, Greece

GASMA, September 2010

Semantic Web aka Web 3.0



- Semantic annotation of metadata using RDF
- Converting data into entities on the Web creating a graph with data for nodes and properties for edges
- Establishing a global naming scheme with URIs and Ontologies

Semantic Web aka Web 3.0



- Making data accessible and meaningful to machines and humans
- Existing knowledge can be easily semantified and repurposed
- New powerful tools for faster and wider searches – automation

Open Linked Data



- Sir Tim Burners Lee : “The semantic web done right”
- Not just linking pages but the actual data
- Data from various sources that share common semantics via URIs

learning content in medical education



- produced by a variety of sources:
 - basic research outcome
 - accepted scientific knowledge
 - clinical practice
- addresses a variety of learning/teaching approaches, e.g.
 - conventional teaching
 - active learning experiences:
case/problem/role/inquiry/... based learning
 - ...

medical learning content types



- conventional content
 - lecture notes, books, exam questions, practicals, scientific papers, graphs, images, videos, ...
- content types unique in medical education
 - teaching files, virtual patients, evidence based medicine forms, objective standard clinical examinations, anatomical atlases, ...
- alternative educational content types
 - reflecting active learning techniques and new technologies: didactic problems, wikis, forums, web traces, ...
- user generated content
 - reflecting user interaction with learning content

content repurposing and reuse



considering the state-of-the-art nature of medical educational content, and the overall cost to create it, it is imperative that such content can be:

- enriched
- repurposed
- re-used

so as to be embedded effectively in medical curricula, continuing medical education and public awareness

content repurposing



changing a learning object
initially created and used for a specific
educational purpose in a specific
educational context, in order to fit a
different purpose in the same or different
educational context

an educational content repurposing social network



basically 2 social networks intertwined

- one formed by actual people (authors, teachers, students, end users)
- one formed by content items

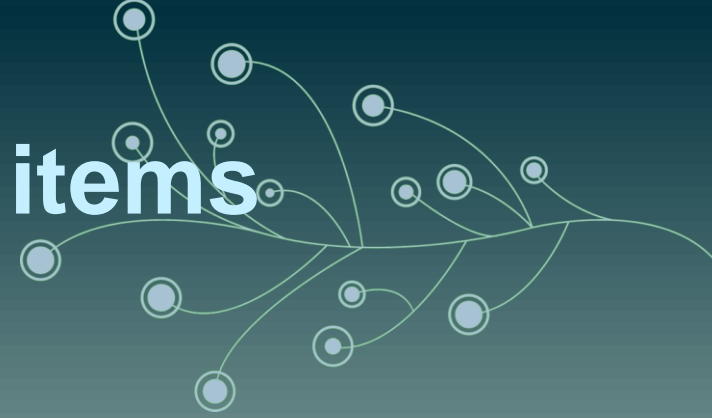
with rich interactions within each network
and across the two networks

interactivity for humans



- declaration of “friends”
- personal blogs
- personal content libraries
- creation of groups
- private and group messaging
- ...

interactivity for content items



- via (author defined) tags
- via comments and blogging
- via repurposing history

use the

“I am a friend of” and “my friend is”
relationships of a social network to describe
“repurposed from” and “repurposed to”

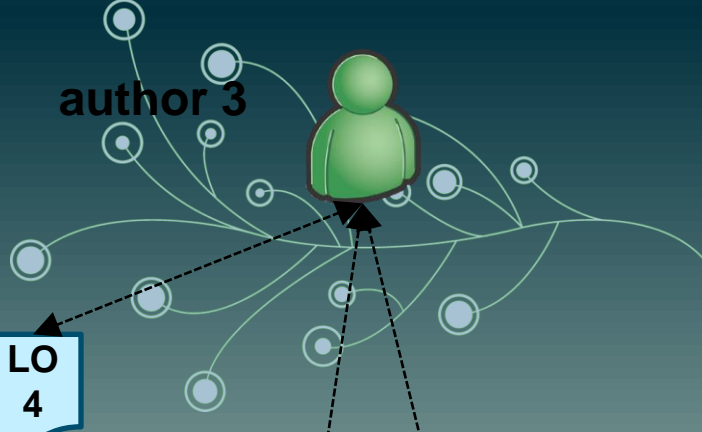
author 1



author 2



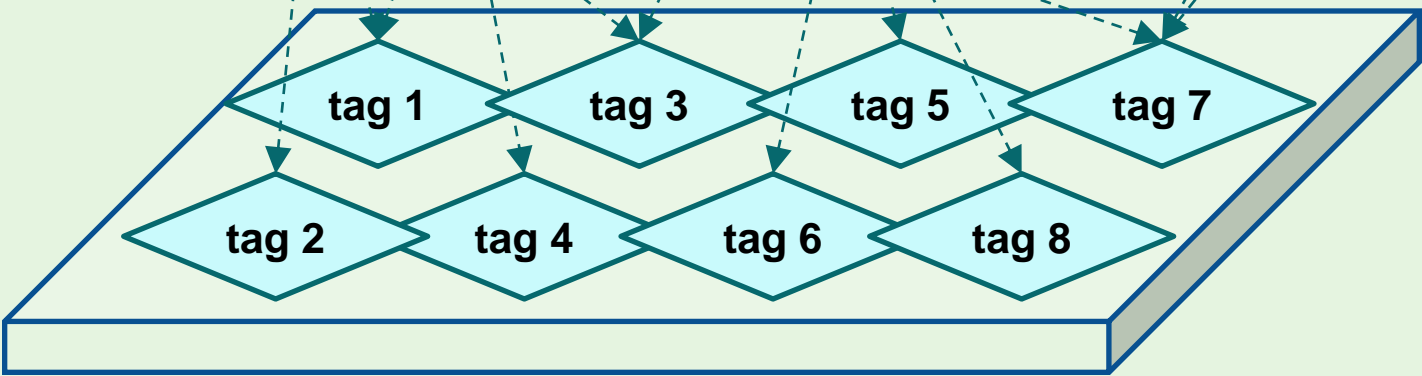
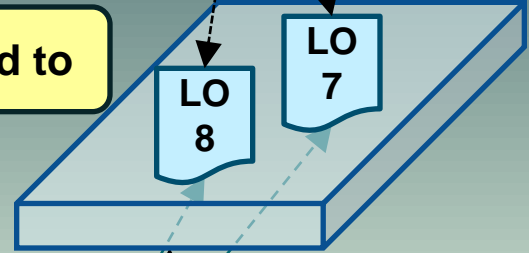
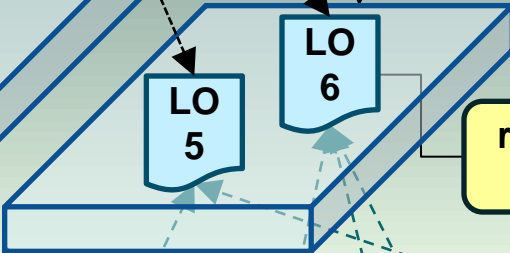
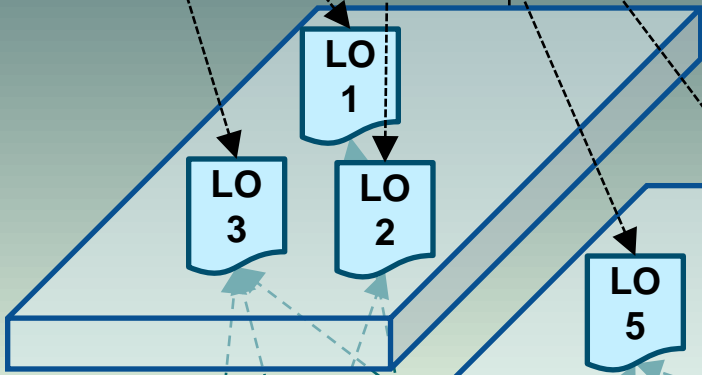
author 3



repurposed from

repurposed to

repurposed to



DUTH

the implementation



- based on the ELGG open source social network platform modified for the incorporation of the second network of learning objects
- Semantified metadata using RDFa and SPARQL endpoint for triples

MetaMorphosis - Windows Internet Explorer

http://metamorphosis.med.duth.gr/

File Edit View Favorites Tools Help

MetaMorphosis

Register | Lost password

metamorphosis | a social environment to share educational resources in health sciences

Video Tutorial

Introductory Presentation

Username

Password

Log in Remember me


ANNOUNCEMENTS

Welcome to MetaMorphosis

30 Latest Resources


There are currently 259 Educational Resources (44 repurposed)

1-10 11-20 21-30 [View all](#)

 **[Vaccination against HPV and cervical cancer brochure for Russia](#)**
Created by: [Philip Davies](#) (23 days ago)

This resource contains text and illustrations presenting a summary of a) the risk of cervical cancer, b) the role of the HPV in cervical carcinogenesis, c) the mechanism of action of the HPV vaccines, d) the role of the HPV vaccines in reducing the risk of cervical cancer and e) the recommendations for the use of the HPV vaccines in Russia. It is intended to support healthcare providers in the region to educate their patients about cervical cancer screening.


Language: Russian
Keywords: Вакцинация, ВПЧ, рака шейки


 **[Follow up of an abnormal Pap smear brochure for Russia](#)**
Created by: [Philip Davies](#) (23 days ago)


This resource contains text and illustrations presenting a summary of a)


Latest Users

There are currently 65 registered users

 [Christina Lakka](#)

 [George](#)

 [Marios Neofytou](#)

 [Philip Davies](#)

Done

Internet | Protected Mode: On

100%

the ELGG platform



<http://elgg.org/>

- open source social network platform
- allows creation of ones' own social network
- features plug-in architecture
- supports a number of open standards (RSS, LDAP, OpenID, FOAF, and XML-RPC)
- technical features: Apache web server, MySQL and PHP

latest statistics



- Over 300 educational resources
- 60+ repurposed
- 70+ registered users

work done within mEducator

project title: mEducator: Multi-type Content Repurposing and Sharing in Medical Education

project type: Best Practice Network

programme: eContentplus
Information Society & Media Directorate
General, European Commission

contract: ECP 2008 EDU 418006

duration: 2009-2012

consortium: 14 partners from 9 EU countries, lead by AUTH (GR)

budget: ~4.500.000 €

website: <http://www.meducator.net/>

