A Semantically Linked Virtual Community for Sharing Educational Resources in Biological Sciences

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learning content in life sciences

• produced by a variety of sources:
  – basic research outcome
  – accepted scientific knowledge
  – research infrastructures & clinical practice

• addresses a variety of learning approaches, e.g.
  – conventional teaching
  – active learning experiences:
    case/problem/role/inquiry/… based learning
  – ...
educational content types

• conventional content
  – lecture notes, books, exam questions, practicals, scientific papers, graphs, images, videos, …

• content types unique in life science education
  – atlases, biological databases, teaching files, virtual patients, evidence based medicine forms, …

• 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 life-sciences educational content, and the coverall cost to create it, it is imperative that such content can be:

• enriched
• repurposed
• re-used

so as to be embedded effectively in life sciences curricula, continuing life-long education and public awareness
Semantic web services & linked data principles to:
• allow open data access and sharing
• mash & exploit data on a web-scale
• semantically link educational resources
• harvest existing content repositories
• ...

Social infrastructure to support:
• virtual educational community
• collaborative contribution
• collaborative annotation
• open peer-reviewing
• other peer-reviewing
• other added value services
• ...

Exploratory data discovery
Exploiting both
Data linking & social interactions

Social dimension

Medicine
Biology
...
social networking of educational content

two distinctive and interacting social networks

• network of persons:
  – authors
  – potential authors
  – perspective users of learning objects (e.g. students, teachers, education managers, etc)

• network of published learning objects:
  – profile including a variety of tags that describe the object and re-purposing
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
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
interactivity for humans

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

• via collections based on semantic annotation
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

http://metamorphosis.med.duth.gr
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 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/](http://www.meducator.net/)