Universidade do Porto
FEUP Faculdade de Engenharia

1st WORSKSHOP ON
INTERDISCIPLINARY RESEARCH IN NEW MEDIA

Semantic Web Technologies in e-Learning

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Problem:

The traditional view of learning puts most of the emphasis on face-to-face teaching and curriculum. It is very slow and expensive. Many people try to find e-Learning systems and learning objects on the Web. But that can be very difficult to find what we need with the actual search engines.

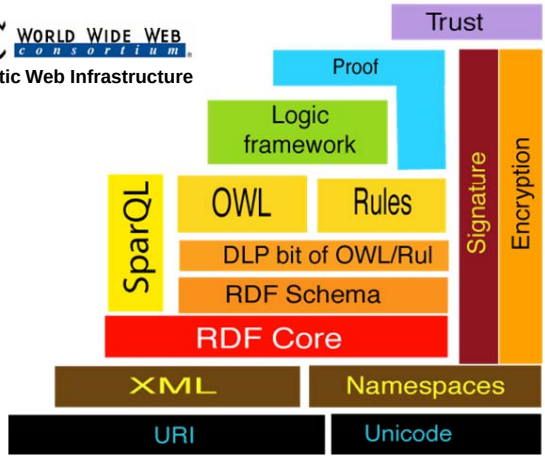
How can someone fast and well in the Web?

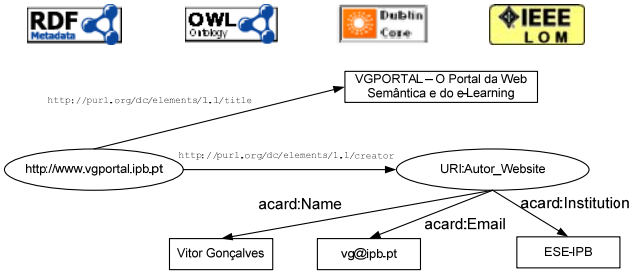
Proposal:

Use Semantic Web technologies on the Development of virtual learning environments.

Project goals:

- Assess the degree of use Semantic Web technologies in learning environments;
- Evaluate the advantages of their integration in open-source e-Learning platforms;
- Analyze the influence of these technologies in the description, organization, reutilization, sharing and interoperability of new media contents.



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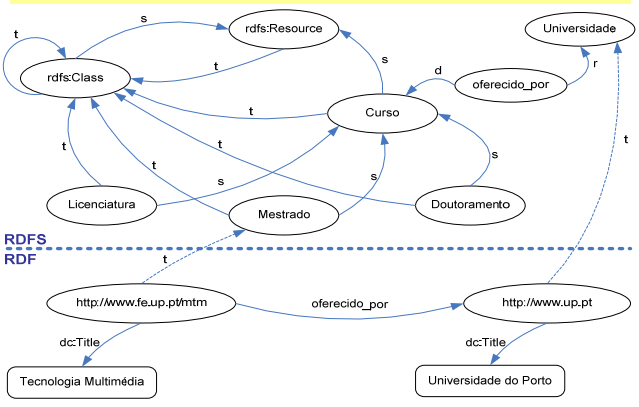
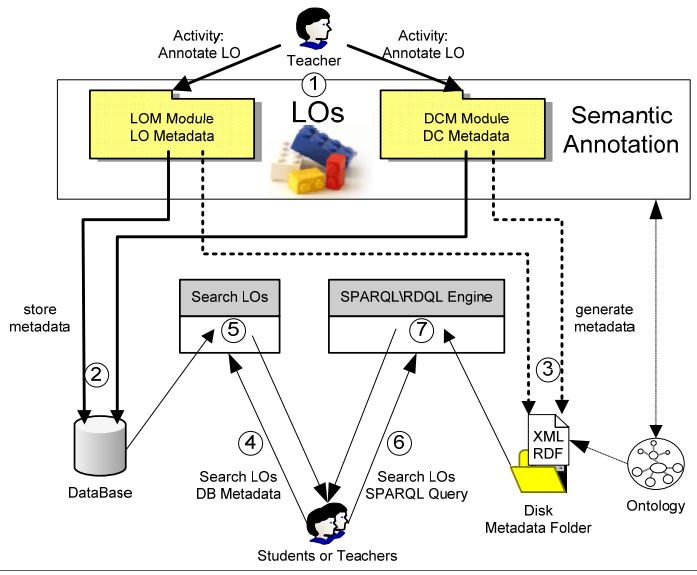


Conclusions:

- **e-Learning technologies and standards:**
  - Open Source e-Learning platforms: Moodle, Atutor and so one;
  - Sharable Content Object Reference Model (SCORM);
  - IMS Content Packing (IMS-CP);
  - IMS Learning Design (IMS-LD);
  - Learning Object Metadata (LOM);
  - Dublin Core Metadata (DCM).
- **Semantic Web technologies:**
  - XML and metadata schemas;
  - RDF (Resource Description Framework);
  - Expressing Metadata in RDF/XML (LOM/RDF and DCM/RDF);
  - Ontologies: Web Ontology Language (OWL) and Topic Maps (XTM);
  - Rules: SWRL (Semantic Web Rule Language);
  - Inference: SPARQL (RDF Query Language and Protocol).
- **Agent technologies:**
  - Voyager Edge (Recursion Software).

Semantic Web Technologies in open-source e-Learning platforms:



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