Learning Networks for Lifelong Competence Development

Rob Koper
Open University of the Netherlands
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Some background

Research into Advanced Learning Technologies at OUNL

• Programme 'Learning Networks for Lifelong Learning'
• Themes (2003-2008):
  a. Author and Use Learning Activities & Units of Learning
  b. Positioning in Learning Networks
  c. Navigation in Learning Networks
  d. Social Software in Learning Networks
  e. Learning Networks Integrated
• Co-ordinator of the EU Integrated project TENCompetence. Partner in Prolearn.
Overview of the Lecture

• Short introduction into our research agenda (similar as the agenda of the TENCompetence project)

• Short introduction into the research approach:
  - Modeling
  - Simulation
  - Software Development
  - Empirical validation

• Introduction and discussion of a new Model of a Learning Network for Lifelong Competence Development

• Resources: http://dspace.ou.nl (learning networks section)
In our research we aim to develop integrated methods & tools (an ´infrastructure´) to support the authoring and use of Learning Networks for Lifelong Competence Development
Keywords

- Learning Networks
- Competence
- Formal & Informal Learning
- Sharing
- Authoring
- Learning Activities
- Knowledge Resources
- Self-organised
- Lifelong Learning
- Units of Learning
- Learning Routes
- Navigational Support
- Learning Design
- Open Standards
- Open Source
- Learner Support
- Service Oriented Architecture
- Positioning Support
- Social Software
7 Requirements for the infrastructure

1. Develop and integrate new pedagogical & organisational models for lifelong competence development (informal/formal, competence based)

2. Develop and integrate services to help the learner to find the best suited and adapted learning solution

3. Stimulate the pro-active sharing of learning resources

4. Support Competence Assessment

5. Provide effective & efficient user support

6. Stimulate decentralised, self-organised management

7. Integrate 4 different worlds of models, standards, services and tools
Research Approach in General

Phase 1: Modelling

• Analysis (literature, needs, ...)

• Develop conceptual models (‘technological theory’) to:
  a. Define the scope
  b. The user requirements
  c. The vocabulary used
  d. The overall architecture

• Standard modelling notation needed (we use UML)

• Sometimes these models are further elaborated to standards specifications (example Educational Modelling Language -> IMS Learning Design specification)
Phase 2: Simulation

• A simulation programme can be created when needed to refine the model or to explore complex dynamic relationship between the variables in the model.

Research Approach

Phase 3: Developing Software

• We develop Open Source Software because of its fit to the purpose of scientific work:
  - publish it in source forge
  - allow peer review
  - allow replication
  - allow further elaboration
  - provide justification for the work at the level of the artefact itself

• Examples: CopperCore (IMS LD runtime engine), TENCC (in early stages of development)
Research Approach

Phase 4: Empirical Validation

• Experiments with the software with real users
  a. In controlled laboratory settings to focus on internal validity of the model
  b. In field studies to focus on the external (ecological) validity

• Comparison between the results of the simulation model and the results obtained in real practice
Publications

• Software through sourceforge.net
• Journals in the field of ALT/TEL:

List of high quality journals & publication policies is maintained by the TENCompetence scientific committee.

See (in development):

http://145.20.177.141 mediawiki/index.php/Advanced_Learning_Technology_Journals

• We are working on an approach for conference papers (end of the year)
Learning Networks Domain Model
Core of the Model
John (Accountant) role: learner

“Update my competences in the profession”

Selected & Performed some Learning Activities

He wrote a small report about his learning experience
Example Optician's competences

Role/Job: Optician (http://online.onetcenter.org/link/summary/29-2081.00)

Competences:

• Measure clients' bridge and eye size, temple length, vertex distance, pupillary distance, and optical centers of eyes, using measuring devices.

• Verify that finished lenses are ground to specifications.

• Prepare work orders and instructions for grinding lenses and fabricating eyeglasses.

• ...

TEN Competence
Building The European Network for Lifelong Competence Development
Identification of Research issues in next session
References

www.ou.nl
www.learningnetworks.org
www.tencompetence.org
http://dspace.ou.nl (preprints)
http://hdl.handle.net/1820/649 (most recent version of domain model)

Thanks!