Supporting Lifelong Competence Development

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In this keynote

• Very short introduction TENCompetence
• How do we create a new generation of learning environments supporting:
  - Lifelong learning
  - Informal learning & Formal learning
  - Personal Competence Development (employability)
  - Open educational resources
  - New forms of assessment (eg. of Prior Learning)
  - Automation (formal models needed)
• Challenge for you: find the underlying critique on the way we are currently organising learning in schools and society
• Aim is to stimulate discussion during the conference
The TENCompetence Project

• Aim: The development of an open source infrastructure for lifelong competence development
• 15 core partners and a network of associated partners (among which JISC/CETIS and SURF)
• 4 major experimental areas:
  1. Digital Cinema
  2. Health Care
  3. UNESCO-IHE Water Management (Nile Region)
  4. Lifelong Learning City (Antwerp)
• Additional pilots from associated partners
Future learning environments

• Flexible and Open Distance Education can be defined as “teaching & learning using technology”

• **Question:** What technologies do you currently use to support your distance teaching?

• **Question:** What technologies do learners use to support their (informal and formal) learning?

• What will future learning environments look like?
Our focus:

• Perspective is the individual (personal learning/ personal competence development) not the institute
• Take the whole spectrum of learning into account: formal, informal and non-formal learning
• Integration of Learning, Working, Living
• Focus on competence development & competence assessment + employability: matching of competences, finding new suitable jobs, etc.
• Focus on learning networks (communities)
• Focus on guidance and support in learning
• Use of new technologies to support this process
The challenge

In our (future) society: individuals are (will be) permanently triggered to further develop their abilities:

- Worldwide competitive economy places new demands on individual workers and organisations: new activities, new technologies, new markets, changing jobs, etc.
- Social and personal triggers to develop new competences related to personal growth, family, leisure time, etc.

**Question:** How can we support individuals in lifelong competence development, using new technologies?
Core questions most people encounter in various phases during life

• I want to (further) develop a specific competence
• I want to study for a new job or function
• I want to keep my competence profiles up-to-date
• I want to map my competences on various job profiles to see which ones are within reach (related to employability: searching for new job opportunities)
The solution we are developing...
What does this mean?
Assume:

A Learning Network

(e.g. a network of professionals aimed at the exchange of knowledge and competence development in the field)
Also assume a “competence” as a node in the network

Competence

TEN Competence
Building The European Network for Lifelong Competence Development
Each competence has one or more “assessments” connected to it.
Each competence is connected to N “learning actions”

Actions (formal, informal from different institutes and persons sharing these actions)
Each action is connected to N learning resources and/or services

- Competence
- Assessment
- Actions (formal, informal from different institutes and persons sharing these actions)

- course
- program me
- learning activity

- Forum
- Learning Object
- Learning Object
- Chat
- Learning Object
- Learning Object
- Wiki
- Video Conf.
- Blog
- Learning Object
- Learning Object
- shared resource
Everybody can add a new competence.

Example:

“ability to perform intake interviews”
Examples in Psychology:
- Educational Psychologist
- Gestalt Therapist
- Researcher
- ...
My personal “position” in the competence map (I have the yellow competences and have to learn the red ones)

My current job

My Goal: Learning for a new job

Learning Network X

my learning path

Profile: X
Profile: Y
Profile: K
Profile: Z
Research Issues in a Learning Network

- What is a competence (in an formal sense)?
- How to measure my "position" in the network?
- How to create an individualised learning path?
- How to provide support in a learning network?
- How to create and share learning activities and courses connected to each competence?
- How to integrate this all to create an environment for personal competence management?

... Of course we already do many of these things, but most of it is hindered by the tremendous implementation and operational issues and costs involved.

What we are doing is search for automation!
Some answers....
Definition of Competence

• A *competence* is the **estimated ability** of an actor to deal with **critical events, problems or tasks** that can occur in a certain situation (at work, at home, on the road, etc.)

This estimation can be based on:
- self assessment
- informal assessments by others
- formal assessments by others
Position in a learning network

• Research to the use of language technologies (LSA)
  – All the materials in a domain => result is vector representation
  – Production of a learner (e.g. a report) => also vector representation
  – Compare and position learner in the domain
  – Also used for essay assessment
Individualised Learning Paths

• Open standards for Learning Paths
• Simulation model of recommender system
• Collaborative filtering
• Ontologies & Collaborative filtering
How to provide support

• Various aspects (stimulate social interaction, finding peers to help you, gaming, social exchange theory).
• Also experiments with LSA to find a peer who can answer your question in the network
How to create and share learning activities

- IMS Learning Design
- Design tools
- Authoring tools to edit sets of learning activities
- Repositories for learning designs (exchange)
- Runtime environments for learning design based courses
How to integrate this all?

• **Personal Competence Management System**
• **NOT** personal in the sense of 'alone, individual'
• **Owned** by a person (compare: Personal Computer), not by an organisation (company, school, university, etc.) to manage your personal competences during lifetime in many different institutions and informal learning events.

• Can be used **in conjunction** with organisational systems (e.g. the LMS of a university, HRM system of a company, knowledge management systems).

• The PCM can be downloaded and used by anyone to develop their competences. When used they can share and connect to all others using the infrastructure developed in the TENCompetence project.
What it does...

- You can create, share, select and manage various **competence profiles** to support the formulation of your learning goals.

- You can **assess your personal competences**, compare it with others and reflect on it.

- You can create, share, select and manage **personal action plans** to attain the learning goals.

- You can create, share and select learning activities, courses, study programmes, learning services and knowledge resources in your action plan.

- These actions can come from **different sources**.

- You can ask for **advice** in any situation (from peers, agents, etc.).
High level overview of connected services

- Learning Design & Assessment Services
- Knowledge Resource Sharing & Management Services
- Portfolio Services
- Learning path & Navigational support Services
- Community Services, Learning Support Services
- Competence Observatory
- Personal Competence Manager
Plan for Basic Guitar Skills

**Description**
I have used these actions to learn basic guitar skills. I started with the interactive lessons. Maybe you can also start with the small self test I have made in basic guitar skills to see where you are.

**Route**

```
Beginners course to guitar playing
-----------------------------
<p>| |
|                            |</p>
<table>
<thead>
<tr>
<th>Interactive lessons, scales</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Rythm</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Basic Guitar Skills</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Basic Chords</td>
</tr>
</tbody>
</table>
```

Continue when minimal 1 is completed

**Options**
- Create new plan
- Select plan
- Edit description
- Break synchronization
- View rights

**Rating**

<table>
<thead>
<tr>
<th>Rating</th>
<th>Name</th>
<th>Comment</th>
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</thead>
<tbody>
<tr>
<td>★★★★★</td>
<td>Scott</td>
<td>I don't think this action plan was very u...</td>
</tr>
<tr>
<td>★★★☆</td>
<td>Phil</td>
<td>I don't agree with Scott. Although prob...</td>
</tr>
<tr>
<td>★★★★★</td>
<td>Gizmo</td>
<td>For me it was very useful. I am new an...</td>
</tr>
<tr>
<td>★★★★★</td>
<td>Ruud</td>
<td>I do not like to play the guitar anymore ...</td>
</tr>
</tbody>
</table>

**Community**

Add your own comment
Planning

• In the second year of the process....

• When you are interested to **participate** in development or in pilots, please contact me (rob.koper@ou.nl) or the website tencompetence.org

• Remember: everything will be **freely** available for everyone to use (and to improve)!

• The **first release** is planned before summer this year (Meeting in Barcelona, June 2007)

• The **final release** is planned for December 2009, also the experiments and pilots in the other sectors will be finalized by then.
Some consequences

• In future we will stimulate our students (and others!) to use the personal competence development tools:
  – Make persons in society aware of their own responsibility of planning their career/competences independent of an institute: mixing various formal and informal learning activities
  – Learn them how to use these tools (and methods) effectively
  – Deliver services for personal competence management (curricula will be available through these tools, using various competence profiles)
  – Provide connections to our infrastructure (student data, course data, etc.)
Thanks!

References:
- dspace.ou.nl
- www.tencompetence.org