Integrating Learning, Living & Working

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In this keynote

• Creating a new generation of learning environments supporting:
  - Lifelong learning
  - Combining informal learning & formal learning
  - Personal Competence Development (employability)
  - Assessment of Prior Learning & ePortfolio

• Research & Development takes place in the Educational Technology Expertise Centre (ETEC) of the Open University of the Netherlands and in various EU projects we are in. Most notably TENCompetence
The TENCompetence Project

- Budget 14 Million Euro; staff size 150
- Aim: The development of an open source infrastructure to support lifelong competence development
- 15 core partners and a network of associated partners
- 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
Aim: Stimulate Lifelong Learning and Employability

Taking into account:

– That more and more people should have qualifications at the higher levels (Lisbon targets => 50% in NL)

– That people perform more different jobs and complex tasks in their lives then ever before

– There are large individual differences between people that have to be taken into account when maximizing each individuals development (e.g. 20% reading problems)

– That regular tasks are becoming so complex that they can only be accomplished by teams of persons instead of individuals

– ICTs enables independence of place, time and tempo and stimulates accessibility, networking and sharing
Current situation

• Standard career in our society:
  – Primary education, Secondary education, Post-Secondary Education, Work and then training at work

• Problems with our current system:
  – 15% = 6 million young people (18-24 years old) leave education prematurely in the EU (2005)
  – Only 77% of the 22-year-old people in the EU completed upper secondary education since 2000: 23% = 9 million people do not have a sufficient start qualification for a job in our society
  – Jobs are changing so fast that people should update their competences on a permanent basis. At the moment only 11% of the adult EU citizens perform lifelong learning activities (Sweden: 35%)
Consequence

• When we want to increase the competence levels of the people in our society, we need to:
  – provide an “alternative path” to the people who dropped out of the standard path: individualized learning paths should be made available
  – stimulate lifelong learning: learning should be an integral part of all work and living
  – we should recognize (and assess) the competences acquired through these forms of individualized formal and informal learning (APL)

• Maybe the “alternative path” will be the preferred way of many young people in our society in future, because it aims to maximizes the individual talents and possibilities and it takes the individual differences in preferences and tempo into account
To conclude

• We want to support individuals to further develop their competences and talents during their course of life and to find an adequate match between job profiles and an individual profiles to plan a good career.

• We want to take the whole spectrum of learning into account: formal, informal and non-formal learning; Integration of Learning, Working, Living
The approach we are developing

• Create networks of learners, professionals and teachers ("Learning Networks") to enable persons to develop their competences and to share knowledge and learning activities.

• Support the management of an individuals competences with Personal Competence Management systems (PCMs).

• In the second part of this keynote I will take you through the basic concepts of PCMs and the research issues that are related to them.
Assume:

(e.g. a network of professionals aimed at the exchange of knowledge and competence development in the field)
Assume:

Some learning questions people have during life:

- I want to develop a specific competence
- I want a better job position
- I want to keep my competences up-to-date
- I want to learn for a new job
Assume that the network contains a set of competences descriptions grouped in competence profiles.
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

- Competences are preferably defined at a relatively high level, taking the whole task situation into account
Each competence description has a structure

E.g. “the ability to perform and report an analysis of variance to a set of experimental data”
Each competence description has one or more “assessments” connected to it.
Each competence is connected to \( \text{N} \) “learning actions”

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

- course
- programme
- learning activity
Each action is connected to N learning resources and/or services

Competence Description

Course

Program

Learning Activity

Forum

Test

Learning Object

Chat

Wiki

Video Conf.

Blog

Assessment

Actions

(formal, informal from different institutes and persons sharing these actions)
My personal “position” in the Learning Network

Yellow = Positive assessed competences

My current job

My Goal: Learning for a new function/job

Learning Network X

Profile: X
Profile: Y
Profile: K
Profile: Z

my learning path

TEN Competence
Building The European Network for Lifelong Competence Development
My Personal Development Plan
Authoring new competences and profiles

• Every person and organization can add and edit new competences or competence profiles (given sufficient user rights)
• Also edit actions, routes and assessments
• Sharing within the community is stimulated

Learning Network X

profile X

describe

Assessment

IMS LD
IMS QTI

task

export

test

course
So, everyone in the network who has a certain competence profile ("expert") can share the expertise; Every learner can share the learning experience with others.
Learning Network

- Competence Matching
- ePortfolio functionality
- Identifying training needs
- Project staffing
- Cross-sectoral employment
- ...

When the network is filled, also other users can benefit
Research Issues in a Learning Network

• 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 actions (courses & learning activities) connected to each competence?
• How to stimulate active sharing and social interaction in the network?
• How to integrate this all to create an environment for personal competence management?

...
Some answers....
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 recommendor system
• Collaborative filtering & Ontologies
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 actions

- IMS Learning Design is used in three ways:
  a. to create courses and learning activities in the network
  b. to save a competence profile, competence or learning path
  c. to implement new forms of assessments (integrated with IMS QTI)

- Improved Visual Design tools based on Reload

- Improved 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.
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
- Interactive lessons, scales
- Rythm
- Basic Guitar Skills
- Basic Chords

Options

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

Rating

- Scott: I don't think this action plan was very useful.
- Phil: I don't agree with Scott. Although probably.
- Gizmo: For me it was very useful, I am new an...
- Ruud: I do not like to play the guitar anymore...

Community Rating: ★★★★★
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 will be release at the ePortfolio conference in Maastricht (October 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 people 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:
- www.tencompetence.org
- dspace.ou.nl