

# Learning Networks



```
function CSClickRe  
var bAgent = windo  
var bAppName = wind  
if ((bAppName.index  
return true; // do  
else return false;  
}  
function CSButtonRet  
var bAgent = windo  
var bAppName = wind  
if ((bAppName.index  
return false; //  
else return true; // follow link  
}
```

Peter van Rosmalen  
Heerlen, 31 January, 2008

**OpenUniversiteitNederland**

# Educational Technology Expertise Center (OTEC)

- Instructional Design
- Multimedia
- Learning Networks
- Master programme “Active Learning”

# Learning Networks Programme

A Learning Network is a network of persons who create, share support and study learning resources ('units of learning') in a specific knowledge domain.

**Objective:**

Develop a coherent set of e-learning technologies to establish learning networks for lifelong learners.

# Key Issues

- Put the lifelong learner center stage and *empower* them with tools to *plan and support* their learning
- Connect tools and methods from different areas (e.g. HRM, KM, Learning, CoP)
- Support for formal education, non-formal (further) education and training and informal learning
- Use and develop open standards and open source software

# Core themes

## 1. Learner Positioning in Learning Networks

Support learners to assess their existing competences and to map them to a position in a learning network

## 2. Make & Use Activity Nodes in Learning Networks

Connect, activate, and support learners to self-organise (social software, learner support)

## 3. Navigation in Learning Networks

Support learners with collaborative filtering techniques to navigate in a learning network

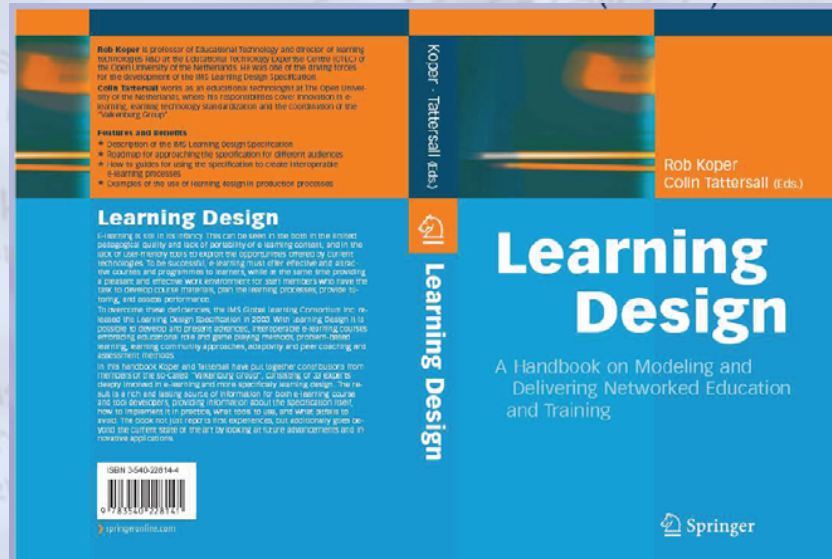
# European Projects

examples

- aLFanet (Adaptive, standards-based elearning)
- UNFOLD (Standards dissemination & CoP in particular IMS-LD)
- COOPER (Project based learning)
- MACE (Architecture)
- PROLEARN (Network of Excellence)
- **TENCompetence (IP)**
- LTfLL (Language Technologies for Lifelong Learning)
- idSPACE (collaborative, distributed product innovation)
- Grapple (Adaptive learning)

# Standards

- IMS-LD (2003)
- CopperCore (IMS-LD open source reference player)
- Publications



# TENCompetence

```
function CSClickReturn () {  
  var bAgent = window.navigator.userAgent;  
  var bAppName = window.navigator.appName;  
  if ((bAppName.indexOf("Explorer") >= 0) && (bAgent.indexOf("Moz") < 0)) {  
    return true; // dont follow link  
  } else {  
    return false; // dont follow link  
  }  
}  
  
function CSButtonReturn () {  
  var bAgent = window.navigator.userAgent;  
  var bAppName = window.navigator.appName;  
  if ((bAppName.indexOf("Explorer") >= 0) && (bAgent.indexOf("Moz") < 0)) {  
    return false; // follow link  
  } else {  
    return true; // follow link  
  }  
}
```



# TENCompetence Project Aim

- **Building The European Network for Lifelong Competence Development**
- To be used by any individual, school, team or organisation that has a need to (further) develop the competences (of their members) in a formal or informal way
- The system will integrate and develop open source software based on the principles of web services/SOA
- Some facts: coordinator, Integrated Project, 14 partners, 4 years, EU-contribution 8.8 M
- For more see: [www.tencompetence.org](http://www.tencompetence.org)



# Core use cases

- Want to improve a specific competence
- Want to study for a new job (or 'competence profile')
- Want to keep up-to-date in my current competence profile(s)

## Supporting Use Cases:

- Want to explore the learning resources, courses, people, etc. in a new field
- Want to assess my competences for a certain job (competence profile)
- Want to reflect on my competences

# Personal Competence Manager

The screenshot displays the Personal Competence Manager application with several panels:

- Competence Profile:** A tree view under 'Beginner' showing tasks like 'How to create a simple scenario in Brainstorm's eStudio', 'User Interface: navigating through the software. Creating primitives, attributes and presets', 'User Interface II: navigating through the software. Using primitives', 'Creating states I', and 'Creating states II'.
- User Interface Panel:** Shows a 'Personal development plan for User Interface: navigating through the software. Creating primitives, attributes and presets'. It includes a 'Description' box, 'Options' (Create new Plan, Select Plan, Break Synchronisation, View rights), and a 'Plan' table.
- Plan Table:**

Action	Type	Planned Start
Introduction 2	Learning Activity	
Video Lecture 2	Learning Activity	
Brainstorm 2	Learning Activity	
Quiz 2	Learning Activity	
Answers Quiz 2	Learning Activity	
Exercise 2	Learning Activity	
Finish 2	Learning Activity	
- Agent Panel:** Shows a chat log with messages: '-- Nov 14, 2007 9:26:01 AM -- ES User Amélie Bécat has been added to community Virtual Set Diploma', '-- Nov 6, 2007 12:53:41 PM -- ES User Anna has been added to community Virtual Set Diploma', and '-- Nov 2, 2007 4:10:42 PM --'.
- Forum Panel:** Titled 'Personal development plan for User Interface: navigatir', it shows a community rating of five stars and a comment from 'Yuri Yas...' dated Nov 20.
- Members Panel:** Lists four members: Dámaris, Elisabet Gómez, Jordi, and Juan Carlos.

# Supporting the tutor or learner

```
function CSClickReturn () {
  var bAgent = window.navigator.userAgent;
  var bAppName = window.navigator.appName;
  if ((bAppName.indexOf("Explorer") >= 0) && (bAgent.indexOf("Moz") < 0)) {
    return true; // dont follow link
  } else {
    return false; // dont follow link
  }
}

function CSButtonReturn () {
  var bAgent = window.navigator.userAgent;
  var bAppName = window.navigator.appName;
  if ((bAppName.indexOf("Explorer") >= 0) && (bAgent.indexOf("Moz") < 0)) {
    return false; // follow link
  } else {
    return true; // follow link
  }
}
```

# ASA

## Question-Answering

### Objectives

- Connecting and organizing the learners (proactive sharing)
- Creating sustainable support facilities (effective support)

### Why question-answering

- High frequency
- Disruptive
- Important for the learner

# Essence of the approach



# Main steps

1. *A student* poses a question.
2. The *system* determines:
  - text fragments to help answering the question;
  - the topic(s) of the question;
  - the most suitable peer-learners.
3. The *system* sets up a wiki with the question, the text fragments and guidelines.
4. The selected *peer-students* receive an invitation to assist.
5. *The questions poser and his peers* discuss and phrase an answer in the wiki.
6. The *question poser* closes the discussion and rates the answer.

# What is a Question ?

## Question:

A few days ago I was busy chatting and in the chat room all my fellow chatters had beautiful avatars. I am wondering how you get these avatars and also if you can make them yourself. Do you know of software in which one can design his own avatar?

The course contains the following text fragments that may be of relevance in answering this question. Click at the corresponding links to see the text fragments:

[Text fragment 1](#)

[Text fragment 2](#)

[Text fragment 3](#)

Show

Edit

Links

History



# The main steps

methods used

Text fragments to help answering the question:

- *Latent Semantic Analysis* to select the text from the studied material

The topic(s) of the question:

- *Latent Semantic Analysis* to identify the topic(s)

The most suitable peer-learners, a selection based on a weighted sum of criteria:

- content competency
- availability
- eligibility

## Student Question interface

Minicursus Internet+

Calendar

<< March 2007 >>

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Vraag Antwoord Module

Klik hier voor uw vraag of antwoord pagina, of stel een nieuwe vraag

### Your questions

[Click here to pose a new question](#)

Your question	Answer-Wiki	Close a question
I have just read that there are several ways to access the internet. Now ....	<a href="#">To the Answer-Wiki</a>	Closed
What is a browser? Question-Answer-Module could you please .....	<a href="#">To the Answer-Wiki</a>	Closed
The internet offers all kinds of ways to communicate. With email I can send messages. However, ....	<a href="#">Click here for the Answer-Wiki</a>	<a href="#">Click to close and rate this question</a>

### Your answers

Status	Question	Answer-Wiki
Ready	I have just read about chat-groups. How can I .....	<a href="#">To the Answer-Wiki</a>
Busy	What is the advantage of the Opera-browser above ...	<a href="#">To the Answer-Wiki</a>
Busy	What is an internet browser and html?	<a href="#">To the Answer-Wiki</a>
Ready	Recently, I noticed that everyone in my chat-box ....	<a href="#">To the Answer-Wiki</a>

# Experiment data

- Learning network with 11 topics; 8 weeks
- 110 students in 2 groups: 78 active (40 : 38)
- 101 questions
- 82 resolved (10 under discussion; 9 failed so far)
- 3.8 average answer rating (5-point scale)
- 47 students posed; 65 assisted; 68 involved in total

# Experiment data

Experimental group outperformed control group on:

- Quality: Q-solved: 71% (42/59); 45% (19/42)
- Responsiveness:
  - Q-time: 5.6 days; 9.6 days
  - One invitations: 80%; 50%

Almost all respondents (n=57) agreed that answering a question is a good investment of time, motivations:

- “I am aware that other students also have questions” (n=24)
- “It improved my knowledge and understanding” (n=29)

Usefulness: 26 experimental; 17 control

Usability: 22 experimental; 16 control

Use it again: 25 experimental; 16 control

# Related R&D to be started LTfLL – March 2008

1. Establish a position for the learner in a domain
  - analysis of learner portfolios
  - modelling conceptual development
2. Support and feedback during learning
  - analysis of interactions
  - analysis of textual output
3. Support of social and informal learning
  - knowledge extraction
  - ontologies + social tagging
  - support knowledge construction / negotiation

# Questions

[peter.vanrosmalen@ou.nl](mailto:peter.vanrosmalen@ou.nl)