Open Universiteit
Centre for Learning Sciences and Technologies
“The Learning Lab”
Activities of CELSTEC

• Three programmes, each with three themes:
  – Learning and Cognition
  – Learning Networks for Professional Development
  – Learning Media

• Each programme integrates three activities:
  – Research Activities
  – Laboratory Activities for Open Innovations
  – Providing Solutions and Services to the market

• Institute for Education & Training
  – MSc Learning Sciences
  – Commercial Training (provided by the staff of 3 programmes)

• Temporary Strategic Programmes
  – Lifelong Learning Services
  – OUNL related programmes (e.g. IPO)
  – Open Educational Resources
Centre for Learning Sciences and Technology

CELTEC news

Marcel van der Klink on Workplace Learning

On the 19th of May dr. Marcel van der Klink of CELTEC will give a presentation on 'The Boundaries of Workplace Learning'.

Publish date: 12 May 2009 (All day)
more>>

Edumedia presentation Peter Sloep on DSpace

The presentation that Peter Sloep gave on the Edumedia conference (4-5 May 2009, Salzburg, Austria) is available on DSpace.

Publish date: 11 May 2009 (All day)
more>>

CELTEC assists national Defence Training Institute to go on-line

CELTEC supports the national Defence Training Institute in the transition from on-campus contact learning to blended distance learning.

Publish date: 27 Apr 2009 09:00
The Innovation Process

Problem

Step 4: Operational Systems and Services

Application Context

Step 3: Implementation

Step 2: Lab

Proof of Concept

LN Research

peer tutoring

LC Research

adaptivity

assessment

LM Research

mobile

immersive

National Funding

European Funding

Sponsoring

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CELSTEC Laboratory

• Open Innovation Policy
• Experimentation stage of CELSTEC’s innovation model;
• Supports knowledge creation, knowledge emergence and knowledge dissemination
• Develops and offers innovation services on behalf of third parties;
Work - Innovation - Place

• atmosphere that is essentially different from regular office ambiance;
• hot desking
• sandbox, playground, long term user testing
Learning Lab: Structure, Facilities, and current Educational Scenarios
Basic idea: user contexts

- @home
- @work
- @school

- What does this mean for the @education provider?

[Link to Flickr image]
Innovation Scenarios

new content models, OER, content engineering and design

@home
- Educational Games
  - User Generated Content
- Teacher Education with Open Content
- Content Engineering in OER

@school
- Mobile and Personal LLL
- Personal Learning Environments
  - Building Learning Networks

@work
- Personal Learning Environments
  - Incentive Systems in Social Software

@education Service Provider
- New business models
  - Crossplatform Content Delivery
Open Scenarios and Facilities

CELSTEC Lab Facilities

The CELSTEC lab offers four main facilities to support different learning scenarios. The four facilities are structured around main places where learning takes place today: School, Home, Work, and the support given by education providers. The scenarios for each room are described on the room pages below. These scenarios are implemented in demonstrators in the lab and you can visit the lab and experience a number of demonstrations which are concrete toolings and instantiations of room scenarios.

Main room facilities are:

- **School**: This room represents the back-end services that are of relevance for teachers and learners in distance learning in new media scenarios. It highlights the conditions, tools, methods and processes for realizing mediated learning arrangements by teachers, course developers and learners.

- **Home**: The Home room displays a traditional classroom setting in different variations and extensions with today's media. The room can host up to 27 participants and supports individual work, group work and lecturing. When needed, the furniture can be re-arranged in a flexible way to facilitate individual and small groups.

- **Work**: The Work room simulates the future living room as a creative environment for combined leisure, entertainment and non-formal learning.

- **Education Forum**: This room represents the professional context of knowledge workers. On the one hand it offers an effective meeting room with extensive support of productivity tools and collaboration media.
Currently Implemented Scenarios

• #ES1 Content Engineering for Education in OER
• #ES2 Multi User Gaming and Simulations

• #LR1 Rapid Content Production in Classroom Situations
• #LR2 Remote Teaching and Peer Group Learning

• #ML1- Free Educational Games and Infotainment
• #ML2 - Content Production with Social Media Tools

• #TR1 Innovation in the Workplace, Brainstorming
• #TR2 Idea Collection and Structuring
Mobile “Learning Lab”
Example Apps
Mobile App Models

- Mobile Learning Content (iTunes U)
- Web-Based Apps with limited sensor access (TeamsPod, ContextBlogger, Mooble)
- Local Contextualised Apps with Sensors and Scanners (Language Learning)
- Map exploration of POI channels (Aloqua)
- Augmented Reality Browsers (Locatory)
Mobile Learning Content (iTunes U)
Notifications in Mob. Learning Activities: Mooble

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Object Tagging/Augmentation
Location Filtering: Mobile Language Learning

Figure 1. One variation of the language learning software using a room-based search to filter the learning content.
POI Channels
Mobile/Personal/Social Displays
Matching RW and AR: Locatory
“Learning Lab”
Concept Study on Mobile Contextual Learning
Expert Concept Mapping

20 international domain experts

“The educational problem that mobile learning tries to solve is...”

1. Generate statements
2. Structuring statements (grouping/rating)

Importance

Feasibility

Multidimensional Scaling & Hierarchical Cluster Analysis

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Expert Concept Mapping

Figure 1 - Problem cluster map
Expert Concept Mapping

(1) **Access to learning:** The cluster covers 15 statements that are mainly related to the challenges of enabling learning in a mobile society. This includes educational problems that are related to flexible learning, including just-in-time learning, equal access to education and learning, and location-based learning. The cluster also covers remote learning and accessibility aspects.

(3) **Contextual learning:** The cluster includes 18 statements that highlight the relation between learning and the context in which the learning takes place. The cluster covers individual aspects of situated learning, learning in context, and learning across contexts. Furthermore environmental aspects are included, such as making use of environmental affordances and a stronger interaction with the environment where the learning takes place.
Expert Concept Mapping

Figure 2 - Statement rating map
Table 2 - Highest emphasized problem statements

<table>
<thead>
<tr>
<th>Problem Statement</th>
<th>Mean</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Importance</td>
</tr>
<tr>
<td>20 Actively participate in learning activities outside of formal educational</td>
<td>4,44</td>
<td>4,11</td>
</tr>
<tr>
<td>settings and facilities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Access to learning resources and learning opportunities without the</td>
<td>4,44</td>
<td>4,00</td>
</tr>
<tr>
<td>restrictions of location, time and cumbersome equipment or facilities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>59 Access to information when and where it is required, through ‘just in time’</td>
<td>4,44</td>
<td>3,89</td>
</tr>
<tr>
<td>browsing of relevant information, and information push to support learning in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>context.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41 Easing access to educational opportunities.</td>
<td>4,56</td>
<td>3,67</td>
</tr>
<tr>
<td>53 Connect learning across contexts, including between formal and informal</td>
<td>4,44</td>
<td>3,78</td>
</tr>
<tr>
<td>settings.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 Ability to discover and experiment in own context.</td>
<td>4,44</td>
<td>3,67</td>
</tr>
<tr>
<td>25 Mobility of the learner.</td>
<td>4,00</td>
<td>4,11</td>
</tr>
<tr>
<td>30 The provision of access to knowledge in the context in which it is applied.</td>
<td>4,56</td>
<td>3,56</td>
</tr>
<tr>
<td>79 Including learners from rural areas.</td>
<td>4,22</td>
<td>3,89</td>
</tr>
<tr>
<td>61 Accessibility of information in relevant everyday life and work situations.</td>
<td>4,33</td>
<td>3,67</td>
</tr>
</tbody>
</table>

Hands On or discussion?
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Mobile/Personal/Social Displays
Mobile Contextualized Learning

Social

Static
Team.Cloud

Personal

Team.Space

Mobile
Team.SPod, ARLearn

Locatory, Evernote