

LCMS implementation: an important step towards interoperability

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samenwerken aan vernieuwing van het Hoger Onderwijs



The Digitale Universiteit: an overview

- Founded in 2001
- A consortium of 10 universities in the Netherlands
- With the aim to collaborate on e-learning development and to share resources and expertise
- Over 60 projects focusing on e-content development, online assessment, online learning and teaching and knowledge development
- Yearly turn-over about € 10.000.000 (contributions from the members and additional funding from the Ministry of Education)

Mission of the DU

To realise qualitative and quantitative economies of scale for educational innovation supported by information and communication technology

Actual strategy:

- focus on transformation of teaching and learning on the level of programmes
- special attention to the implementation of prior project results

Participants

- Universiteit van Amsterdam
- Universiteit Twente
- Vrije Universiteit
- Open Universiteit
- Fontys Hogescholen
- Hogeschool INHOLLAND
- Hogeschool Rotterdam
- Hogeschool van Amsterdam
- Hogeschool van Utrecht
- Saxion Hogescholen

The Digitale Universiteit: the projects

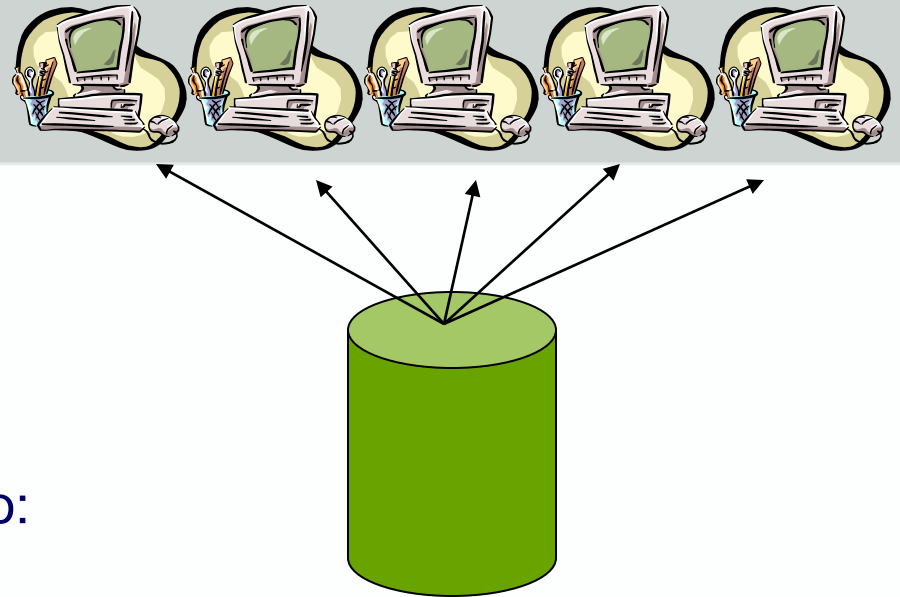
- The projects of the Digitale Universiteit are divided into five programmes:
 - Digital learning materials: tasks and resources
 - Digital testing, assessments and digital portfolio
 - Distance learning and teaching: dual, virtual and international; including authentic learning
 - Development and dissemination of expertise
 - Virtual Learning environments (standardisation and interoperability)

The programme “Virtual Learning Environment”

Background

- At the start of the DU, no technology standards were negotiated
- Every project chose it's own tooling for both development and delivery of materials
- Different LMSses are being used in the 10 participating institutions (Blackboard, N@tschool, TeleTOP, WebCT, Learning Space and others)
- IT infrastructure varies a lot between (and within) the institutions

Repository thinking



We need a generic solution to:

Use digital learning materials in the different universities

- using the existing VLE's
- adapted to the local pedagogical settings

Maintain, store and retrieve digital learning materials

Develop materials regarding the relevant standards
(IMS, ADL SCORM, AICC)

The programme “Virtual Learning Environment”

Current situation

- Technology guidelines are available for projects
- Projects are stimulated to follow DU tooling preferences (learn eXact, Question Mark Perception)
- Metadata guidelines are available and compulsory
- SCORM 1.2 as standard for content development
- Main focus on IMS QTI and IMS CP
- Further joint choices are under negotiation (political and technological discussion)

learn eXact implementation: first results

- Five projects started September 2003 (one was terminated because of non-technological reasons)
- Four project now develop their content in learn eXact
- The route from learn eXact to content players is being 'paved':
 - Blackboard SCORM building block
 - learning object search engine
 - LRN player for non compliant situations
 - other players are (as far as possible) adapted to compliancy
- Today about 100 learning objects have been created

Meten en Schalen

CONTENTS

- Concreet: Technieken voor
- Concreet: Wat is meten?
- Concreet: Symbolen toekenr
- Concreet: Eigenschappen or
- Concreet: Metingen op een n
- Concreet: Slepen
- Concreet: Soorten meetscha
- Concreet: Nominaal meetniv
- Concreet: Geen ordening
- Concreet: Ordinaal meetnive
- Concreet: Intervalniveau
- Concreet: Rationiveau
- Concreet: Rekenen binnen n
- Concreet: Kwantitatief meten
- Concreet: TODO



De eerst twee lessen gaan over meten en beschrijven: eigenschappen van objecten of personen kun je bepaalde waarden geven, en die waarden kun je op verschillende manieren weergeven.

In de eerste les worden meten en meetschalen behandeld. Het toekennen van waarden aan bepaalde objecten of personen, noemen we meten. De manier waarop dat gebeurt, bepaalt welke mogelijkheden tot datareductie je na het meten hebt, het meten vormt dus de basis voor de verdere verwerking.

Five projects, five goals

DigiPabo II (Digital Teacher Training School)

straightforward content

Hospital Teachers

dynamic content delivery to a website

Interactive Worksheets for Multidisciplinary Mathematics

using MathML in the content

Small Subjects for Teacher Training Schools

use the system as a database

DiViDu/IVO

use the system as a video repository

Next steps

- The LCMS project is currently being evaluated
- Based on evaluation outcomes further plans will be decided in June
- Some five new projects consider using learn eXact
- Two major existing content-resources will be migrated into learn eXact
- More projects to join soon
- First steps are taken to develop a delivery strategy for learning objects through our Educational Service Provider (Espelon)

Conclusions

- Standards are helpful but not a “total solution” to solve the interoperability issues within de DU
- The LCMS implementation helps us overcoming the interoperability problems
- Learn eXact turns out to be a useful tool to make SCORM working for us and helps us visualising the content production process from assets to courses