

LEARN@WU

From a Project to an Infrastructure

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Overview

- Emphasis and Background of the Learn@WU Project
- Acceptance and Usage Figures
- Learning and Training Environment
- Perspectives and External Projects



WU: Vienna University of Economics and Business Administration

- University = “Business University”
- One of the largest Business Universities worldwide
 - about 22.000 students in total
 - up to 4.000 freshmen each year
 - more than 2.000 different courses every semester
- E-Learning:
 - Primarily focused on the first year of study
 - Address heterogeneous knowledge of freshmen
 - E-Learning in the Large

3



Approach to Handle High Load

- **Provide eLearning material for all beginner courses**
 - Developed about 37.000 learning resources and an interactive training environment for 350 beginner classes in 18 different areas
 - Public and Private Law
 - Business Admin, Marketing, Human Resources, ...
 - Mathematics, Statistics, Information Systems
 - Economics
 - Languages (English)
- **Increase Efficiency**
 - Emphasize self-organized learning through immediate learner feedback
 - Integration with mark-reader to improve grading efficiency
 - Switch to half-semesters (to improve throughput)
 - Search for new knowledge delivery methods (blended learning, better usage of contact hours)
- **Improve Quality**
 - Streamlined contents of beginner courses through platform
 - High transparency of learning materials (quality assurance, ...)
 - Easier curriculum development (intra-course linkage, ...)
 - Development from Teacher to Coach

LEARN@WU Key Facts

■ Initial Project:

- Start: autumn 2001, 2 years, budget: 3,4 Mio Euro
- Joint development of Department Of Information Systems and Department of Business Education
- 36 full time content developer (2 per course)
- 2 people didactic support, 2 people technical support (incl. help desk)
- **Content** (not platform) **project**

■ From Project to Infrastructure:

- 2002: Deployment of first version based on OpenACS
- 2003: eLearning became a strategic goal of the University
- 2004: Relaunch based on DotLRN + own components
- Since 2005:
 - eLearning is part of Trainee programs
 - Development of an in-house e-learning academy
- Currently 48 people employed, more than 250 content developers



Success Factors

■ Support of the **full e-learning development cycle**

- Content creation
 - Mostly interactive, different granularity
 - Most content developed by domain experts via Microsoft Word/Microsoft InfoPath
- Content delivery
 - Interactive exercises for training and self-assessment
 - Various types of content
 - Organization via Concept Space for easy navigation and recommender system
 - Concept Space is a knowledge map for students to track their learning-progress
- Content assessment
 - Support through a mark-reader
 - 3 times per semester about 10.000-15.000 exams
- Result Communication
 - Images, PDF-Generation, SMS

■ **Collaborative** E-learning environment with **decentralized management**

■ **University supports** content projects

- Project Pool (from 10h/semester to 40h/year)
- Various kinds of e-Tutors
- E-Learning Academy (courses, trainee-programs, support)
- Infrastructure Team (5 people)



Concept Space



Home myLearn Sitemap Suche Hilfe Gustaf Neumann (logout)

Learn @ WU
E-Learning-Initiative der Wirtschaftsuniversität Wien

Einführung in betriebliche Informationssysteme

>> Einführung in betriebliche Informationssysteme >> Inhaltskatalog

Einführung in betriebliche Informationssysteme (941)
Einführung in betriebliche Informationssysteme

Hauptmenü

- » Aktuelles
- » Lehrveranstaltungen
- » Entwickler
- » WU-Wien
- » Study@WU

LV-Menü

- » LV-Übersicht
- » Inhaltskatalog
- » Textbücher (1)
- » Ressourcengruppen (6)
- » Externe Links (4)
- » Klausuren (10)
- » Kontrollfragen (579)
- » Downloads (17)

Untergeordnete Bereiche

- » Einführung und Überblick (125)
- » Planung, Entwicklung und Betrieb von Informationssystemen (205)
- » Büroinformationssysteme (185)
- » Betriebliche Kommunikation, Kooperation und Koordination (103)
- » Unterstützung betrieblicher Leistungsprozesse (48)
- » Außenwirksame Informationssysteme (82)
- » Zentraleinheiten (1)
- » Datenträger und externe Speicher (1)
- » Ein- und Ausgabegeräte (1)

Zugeordnete Ressourcen

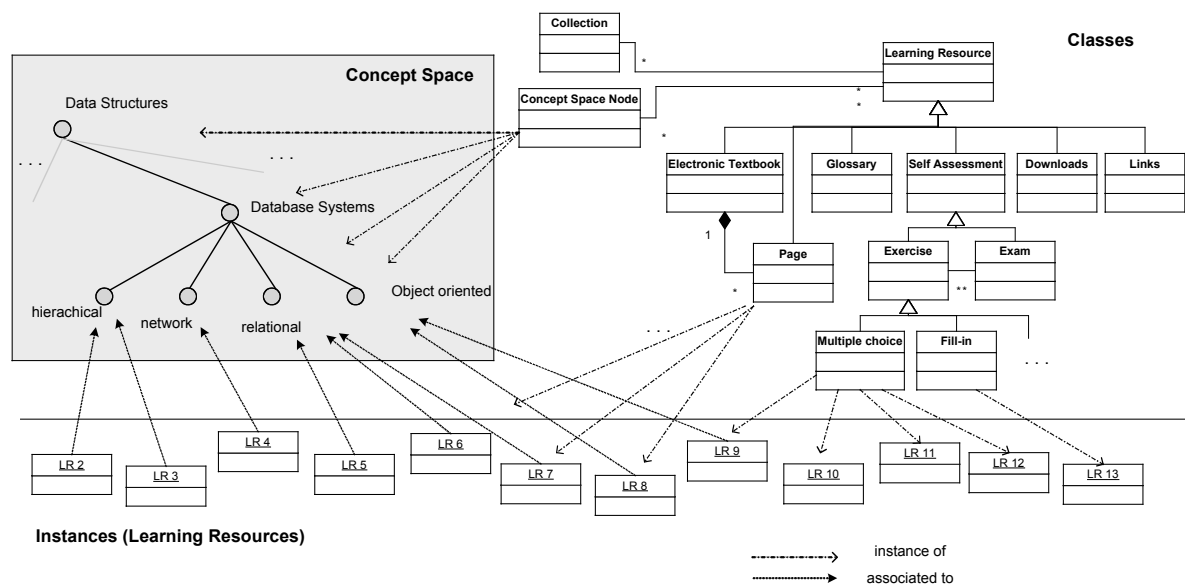
Textbücher (1)
Wirtschaftsinformatik 1

Downloads (12)

Externe Links (4)
EBCDIC (Extended Binary Coded Decimal Interchange Code)
Earth Simulator
Motherboard (PC-Grundplatte)
TOP 500

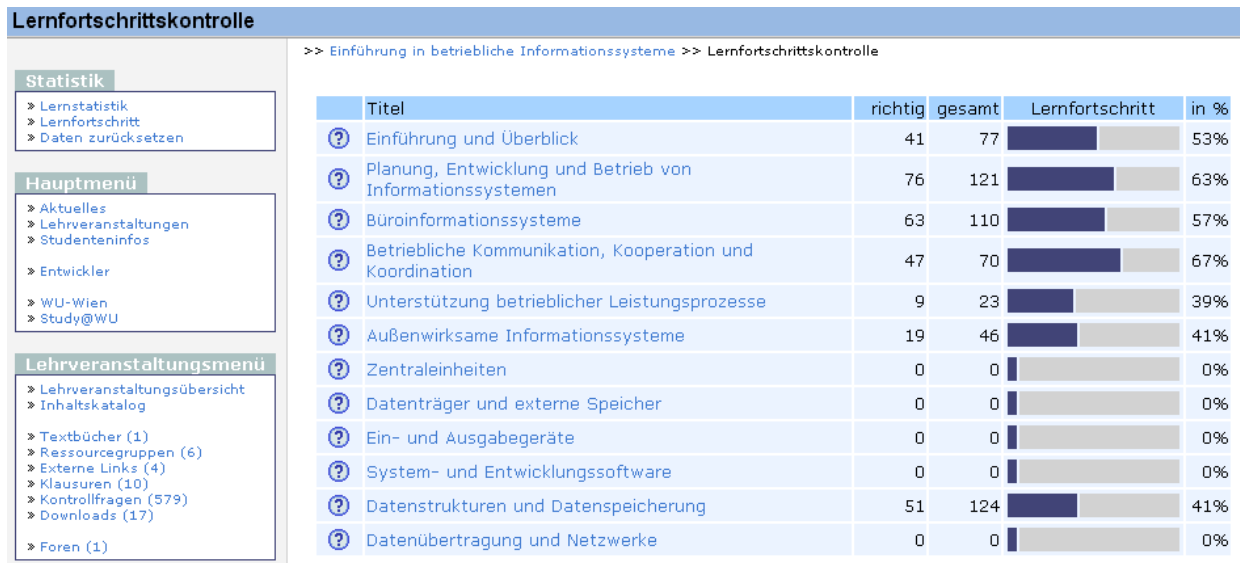


Concept Space with Types of Learning Ressources





Personalized Learning Statistics



- Per student, per class (here: Information Systems 1)
- For every unit: show coverage and success rate



Collaborative Learning and Teaching Environment



- **Community Framework**
 - ☐ University as a „community of communities“
 - ☐ Communities composed of
 - Groups of students, classes, courses, programs, alumni, ...
 - Members and administrators (decentralized management)
 - ☐ Communities are provided with tools
 - ☐ Administrators tailor communities according to their needs
- **Collaboration and Teaching Tools**
 - ☐ General Collaboration Tools
 - Calendar, Announcements, Chat, Forum, File-Store, Weblog, Wiki, ...
 - ☐ Teaching Tools
 - Syllabus, Homework, Problem Based Learning, Room Reservation, ...
 - ☐ Decentralized Management:
 - E.g. teacher configures a class community with tools suitable for his teaching concepts
- **Scalability**



Current State

- More than 37.000 learning resources developed
- Broad Acceptance
 - More than 2.000 courses
 - More than 29.000 registered members (mostly students)
 - Students solve up to 380.000 interactive exercises per day
 - More than 120.000 exams through mark-reader
 - *"Without Learn@WU, the operations of our university would not have been possible"* (Christoph Badelt, President of WU)
- Technical Figures
 - Up to 4,3 Mio requests (hits) per day from registered users
 - Average response time less 0.4 sec
 - Up to 41 GB/Day traffic

Current annual growth rate: 10-20%

One of the most intensively used eLearning platforms world-wide



E-Learning Strategy

- **Blended Learning**
 - Develop the **right mix** if knowledge transfer methods
 - Use printed materials, contact hours, technology enhanced learning where it has its highest momentum
 - **First year of study:**
 - Students have the choice between e-learning and classical courses
 - Model based on self-assessment well suited for students with heterogeneous knowledge entering university
 - Reduced number of parallel classes per course from 50 to 25
 - **Higher Classes:**
 - Emphasize on collaborative learning
 - Problem based learning
 - Provide a rich interaction framework for students and teachers
- **General learning and teaching portal**
 - One-stop-shopping for all teaching matters for students and teachers
 - General learning and teaching environment



Recent External Projects

University and Spin-Off Company *Knowledge Markets* starts contributing Learn@WU modules and delivers solutions

- Learn@WU Modules

UNIVERSITÄT
MANNHEIM

- Deployment of Learn@WU components



bm:bwk



- Predominant package: xoWiki



- Predominant package: Assessment



Bildungsserver Burgenland (Austria)



Plattform-Koordinatoren C. Fuchs (li.) und H. Gabriel

Platform facilitates learning in 'IT-supported Classrooms' (Every student has a Laptop as permanent learning tool):

- 10.500 registered high school pupils and
- 400 teachers in about
- 100 schools

Customized Learn@WU, additional Requirements:

- easy content authoring (xoWiki),
- SCORM compliance

Our installation serves as a **large-scale collaboration environment** supporting learner-to-learner, learner-to-teacher, and teacher-to-teacher communication and content authoring.

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Daimler Chrysler (Germany)

DAIMLERCHRYSLER

Daimler Chrysler aims at improving its collaboration with its 2.000 suppliers by introducing a DotLrn-based portal.

Main features:

- Content authoring
- Self-directed learning

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University of Innsbruck (Austria)



Platform for managing large-scale exams

Integrates with Blackboard (Primary LMS)

Main features (of customized Learn@WU) used:

- Creation of exam questions, online sample tests, and paper-based exams,
- Content development via integrated office tools (Microsoft Word, Microsoft Infopath),
- Scanner integration for fast-and-easy processing of paper-based exams,
- Randomized selection of exam questions,
- Online reviewing of results

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WU Executive Academy (Austria)



Customer-Relationship-Management (CRM) Tool for offering courses and master programmes

Main features (of customized Learn@WU) used:

- Course Administration (Course, Class, Attendees, Trainers, Pricing)
- Content Management (CMS):
 - Multilingual
 - Support of Templates
 - Navigation management
- **Forthcoming (Possible Open ACS Contribution):**
 - Complete rework based on newest xoWiki
 - Workflow-support for reviewers, ...
 - Scheduled Q1/2007

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Gesellschaft für Personalentwicklung Wirtschaftsuniversität Wien



Software supporting course evaluation

Main features:

- Three, interlinked questionnaires (expectation analysis, satisfaction analysis, transfer analysis) → GfP
- Scanner support
- Customization of questionnaire
- Reporting analysis of results (benchmarking) using statistical computing component R

Forthcoming features:

- Database for reusable questionnaire components (Scales) linked with educational performance metrics (EduMetrics)
- Benchmark databases for these standardized Scales

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Contribution of DotLRN Components
Co-sponsored by University of Mannheim

KNOWLEDGE MARKETS
Research and Consulting for Knowledge-driven Organisations

Home Solutions Consulting Publications Company Contact Language: de | en

Learn@WU Packages - Adapted for .LRN

In a recent project for the University of Mannheim, Knowledge Markets adapted some learn@WU specific components to be used in a standard .LRN system. These packages will be integrated in OpenACS in the near future and can already be used for standard .LRN systems. Currently the Modules Assignments, Gradebook and Problem Based Learning (PBL) are available.

Assignments

The Assignments package allows course instructors to assign homeworks to their students. Assignments can be started either manually or automatically at a certain time. A portlet on his/her start page shows the student which assignments he/she needs to do next. The homeworks handed in can be graded by the instructor and a correction can be added.

- PDF-documentation
- Viewlet: Add Assignment Support to a Class
- Viewlet: A Students Perspective
- Viewlet: Create New Assignments

Gradebook

The Gradebook provides a performance overview for the students. Course instructors can enter grades manually or use an interface to import grades from the 'Assignment' module.

- Gradebook Viewlet
- PDF-Dokumentation

Problem Based Learning (PBL)

The concept of problem based learning (PBL) is based on the learn theoretical principles of constructivism. PBL was originally developed in the 1950's in the area of health care science. In PBL systems, learning is always based on a real or constructed problem. Starting from this problem, learners acquire independently the knowledge needed to finally develop a solution. The teacher has in this connection the role of a coach, who helps answering subject-specific questions and on the other hand controls the learning process.

The main characteristics of PBL are:

- In the center of PBL is always a real or a possible real problem.
- There are various possible and valid solutions.
- Working and learning takes place in groups.
- The students acquire the needed information self-dependently.
- The previous knowledge of the students is included in the problem solution.
- The teacher accompanies, supports and contributes to the problem solution. He/she does not direct or instruct nor contribute complete solutions.
- The solution is assessed authentically, preferably by criteria that would be applied for solutions in the real world.



Learn@WU-System



- Fully Based on Open Source Software
 - OpenACS (Community Framework)
 - DotLRN (Course Management + Collaboration tools)
 - Content Management Tools
- Components
 - PostgreSQL (Relational DBMS)
 - AOLserver (Scalable Web-Server Environment)
 - Pound (Reverse Proxy for Security and Load Balancing)
 - OpenACS (ArsDigita Community Framework)
 - dotLRN (Course Management System from MIT)

