



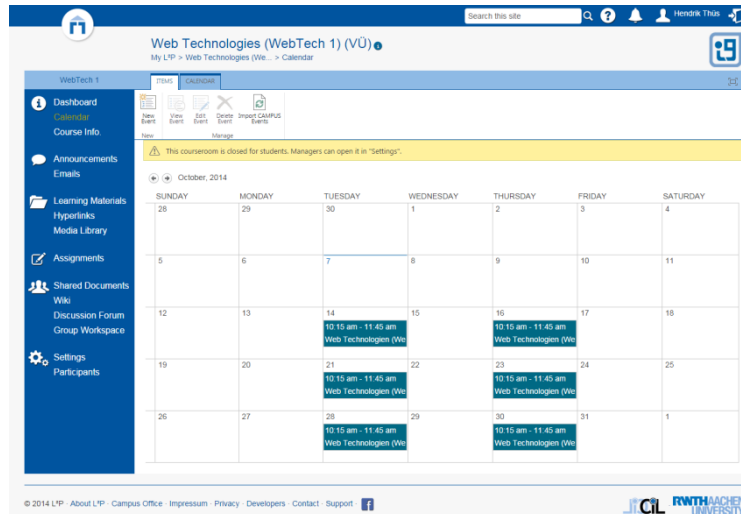
RWTHAACHEN
UNIVERSITY

eLearning Summer Term 2015

Prof. Dr. Ulrik Schroeder, Dr. Mohamed Amine Chatti
LuFG Informatik 9 – Learning Technologies

LuFG Informatik 9

- ▶ Engineering innovative learning systems
- ▶ Learning theories and pedagogical models
- ▶ Intelligent Web and mobile technologies
- ▶ Learning Analytics
- ▶ Didactics of computer science



People at i9 & CiL



Nadine Bergner



Katrin Römer



Ahmed Mohamed
Fahmy Yousef



Dr. Mohamed
Amine Chatti



Prof. Dr.
Ulrik Schroeder



Usman Wahid



Harald Jakobs



Arham Muslim



Hendrik Thüs

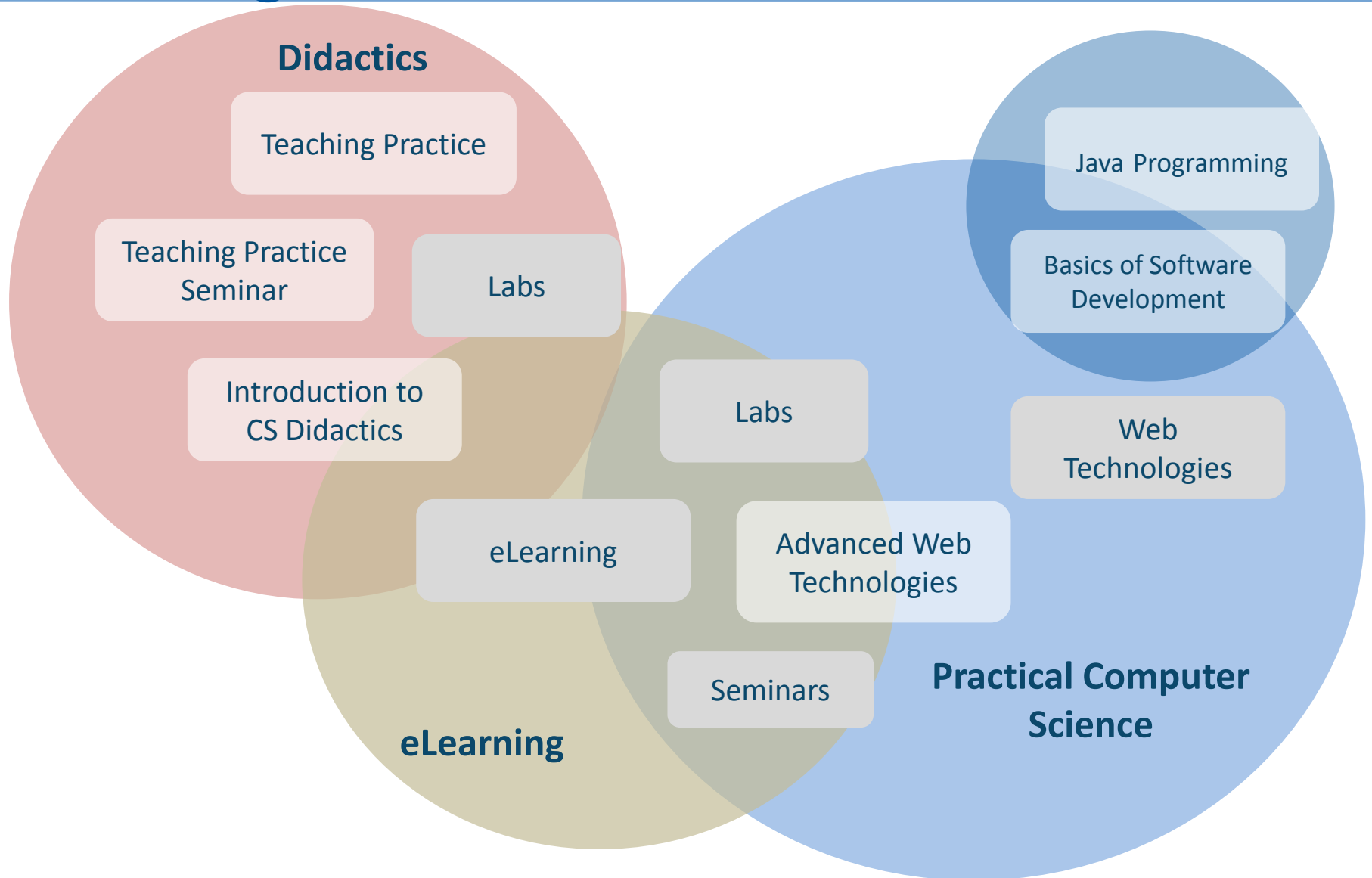


Christoph Greven



Vlatko Lukarov

Teaching



Research Overview

Engineering next-generation learning environments

- Personal learning environments
- Open and networked learning environments
- Open Assessment

Intelligent Web and mobile technologies

- Web mining
- Mobile learning in context

Innovative learning theories and pedagogical models

Learning Analytics

- Educational data mining
- Open assessment and intelligent feedback
- Lifelong learner modeling
- Intelligent recommendation

Didactics of computer science

- Didactics of curricular and extracurricular learning of CS
- Technology enhanced learning for school students
- Educational technologies
- Gender and diversity studies

eLearning – Summer Term 2015

ORGANIZATION

eLearning SS 15 Team



Prof. Dr.
Ulrik Schroeder



Dr. Mohamed
Amine Chatti



i9 & CiL Team
(External Experts)



- ▶ You can find all information and material in L²P
<http://www.elearning.rwth-aachen.de/>

- ▶ We provide in L²P
 - ▶ Slides, eLectures, examples, ...
 - ▶ Announcements, ...
 - ▶ Literature, ...
 - ▶ Discussion forum, Wikis for the exchange of information, ...

Programmierung für Alle (Java) (V)

Mein L²P > Programmierung für A...

Progra APPS

Kurs-App hinzufügen Persönliche App hinzufügen Kursbereich bearbeiten Persönlichen Bereich bearbeiten

Neu Verwalten

Medienbibliothek

Name
14-rekDatenstrukturen-slidescast
13-Persistenz-slidescast
12-GUI
11-Exc-slidescast
09-Interfaces-Slidescast

1 2

Aktive Ankündigungen

Titel	Geändert von
Einsicht der Wiederholungsklausur	Christoph Greven
Ergebnisse Wiederholungsklausur	Christoph Greven
Infos zur Wiederholungsklausur	Christoph Greven
Ergebnisse Klausur (nach Einsicht)	Christoph Greven
Einsicht der Klausur	Christoph Greven

1 2 3 4 5

Lernmaterialien der letzten Woche

Keine neue Lernmaterialien für diese Woche vorhanden.

Aktuelle Übungen

Keine Übungen verfügbar.

Schedule

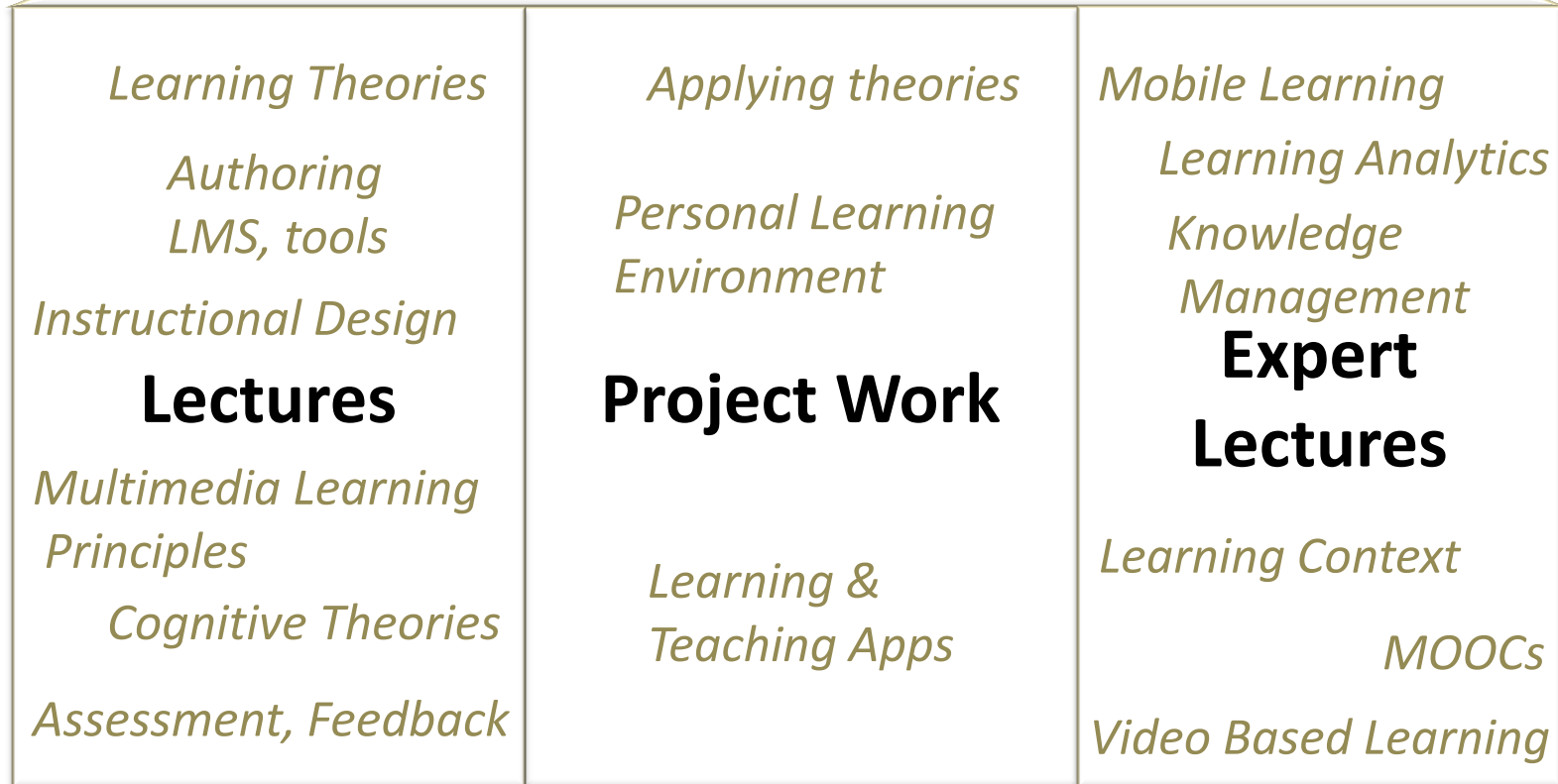
	Day	Time	Room	Begin
V/P	Tuesday	10:15 – 11:45	5056	16.04.
V/P	Thursday	10:15 – 11:45	5056	18.04.
P	Wednesday	14:00 – 16:00	6010	On demand

- ▶ There is no strict distinction between lectures and exercises
 - ▶ You are always **actively involved!**
 - ▶ Lectures, self-organized project work, project presentations



Concept & Content

Self-organized Learning



Content

Date	Day		
1 Intro			
14.04.	Di	Orga + Intro + Group Building (3-4)	Prof. Schroder / Dr. Chatti
16.04.	Do	Motivation, Examples. Pros/cons etc.	Prof. Schroeder
21.04.	Di	Presentation of the videos	Students
2 Learning Theories and Learning Environments (LMS vs. PLE)			
23.04.	Do	LMS, L ² P	CiL Team
28.04.	Di	Learning Theories	Prof. Schroeder
30.04.	Do	LaaN Theory	Dr. Chatti
05.05.	Di	LaaN, PLE	Dr. Chatti
07.05.	Do	LT-Trends (Assignment 2) + Workshop/Discussion	Students
3 Learning Technologies + Current Trends			
12.05.	Di	MOOCs, x, c, bMOOC	Prof. Schroeder / Fahmy
19.05.	Di	MOOCs Workshop and VideoMapper	Dr. Chatti / Fahmy
21.05.	Do	Learning Analytics	Dr. Chatti
Exkursionswoche			
02.06.	Di	Open Learning Analytics	Dr. Chatti / Muslim
09.06.	Di	Learning Context Project, Mobile Learning, Learner Modeling	Thüs
11.06.	Do	PRiME, KM, Work-integrated Learning, mobile PLE	Greven
16.06.	Di	Privacy, Design Patterns, and Evaluation in LA	Lukarov
18.06.	Do	Intermediate Project Presentations	Students
23.06.	Do	eAssessment & Feedback Theories, ePrüfungen	Prof. Schroeder
25.06.	Di	Open Assessment	Wahid
4 Instructional Design + Content Authoring / Multimedia Principles			
30.06.	Di	IDT, Motivation, Authoring, Mythen, Kritische Betrachtung, Mediendidaktik	Prof. Schroeder
02.07.	Do	SOI	Prof. Schroeder
07.07.	Di	SOI + MM Tools	Prof. Schroeder
09.07.	Do	Final Project Presentations	Students
14.07.	Di	Final Project Presentations	Students
16.07.	Do	Buffer for Feedback, Evaluation, Resume, Summary, Gast, ...	Prof. Schroder
Oral Exams			
24.-27.08.			

Organizational Issues

- ▶ V3 + P2 (6 ECTS) => 180 working hours
- ▶ Integrated Concept
 - 2-4 hours of lecture/tutorial per week (Tue/Thu) + 8 hours of independent learning and practical exercises/project
 - You have to be **active**
 - ▶ Demands practice, work enthusiasm and endurance
- ▶ Exam = Project work + Oral examination
 - ▶ **Project** work: counts **50%** in the final grade
 - ▶ **Oral examination** at the end of the semester (the other **50%**)
 - Discussing presented theories in the light of your projects
 - ▶ You have to succeed in both parts of the examination
 - ▶ **Dates:** Evaluation of projects, **Examination August 24.-27.**

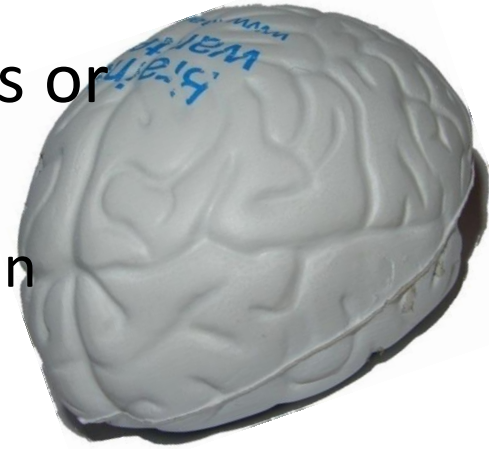
Project Work

- ▶ Development of TEL prototypes
 - ▶ Mobile Learning
 - ▶ Open Assessment & Feedback
 - ▶ Learning Analytics
 - ▶ Any innovative learning component
- ▶ Project groups of 3-4 people => commit for the complete term!
 - ▶ All exercises are **mandatory**
- ▶ Projects will be presented and discussed during the lecture
 - ▶ Guided by exercise sheets
- ▶ Project grade = average of the 3 exercises weighted by duration

Exercise	Hand-out	Content
1	14.4.	Video „Rethinking Education“ (1 week)
2	21.4.	Literature Search + Presentation „New Trends in TEL“ (2 weeks)
3	7.5.	Group project (9 weeks)

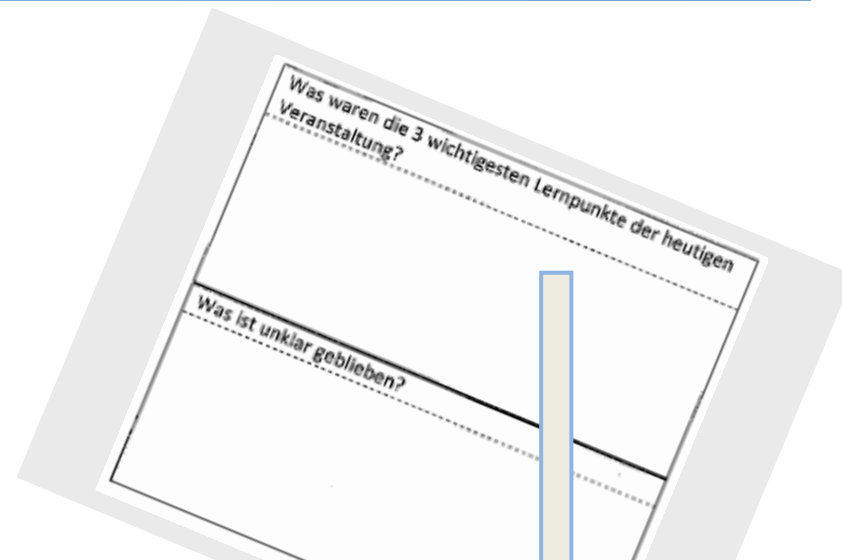
Interactive Questions

- ▶ During lecture we frequently ask questions or ask you to do small tasks
 - ▶ Questions on the slides are marked by this brain
 - ▶ the participant with the brain begins with answering the question
 - ▶ After answering the question the brain is handed over to the next person
 - ▶ Usually more than one person is asked to answer the questions
- ▶ Activity is distributed fairly across the lectures



Two-Minute Paper

- ▶ Every participant fills out an evaluation sheet at the end of each lecture
- ▶ 3 core points of the lecture...
 - ▶ What were the most important aspects of today's lecture?
- ▶ Points that remained unclear ...
 - ▶ What remained unclear and should be discussed again one of the following lectures?
- ▶ What did you like...
 - ▶ What did you like most?
- ▶ Suggestions...
 - ▶ What would you change and how?
 - ▶ Which (constructive) suggestions do you have?
- ▶ Possible exam questions...
 - ▶ Phrase two possible exam questions that capture important parts of today's lecture



Advanced Learning Technologies (Vorlesung/Übung)

My LTP > My Courses > 1458-36343 > WiWi > TMP > 08.05.2014

advLT PAGE

Dashboard
Calendar

Announcements
Emails

Learning Materials
Literature
Hyperlinks
Media Library

Assignments

Shared Documents
Wiki
Discussion Forum
Group Workspace

Settings
Participants

What were the three most important aspects of today's lecture?

- Seamless and ubiquitous Learning [2]
- Awareness
- Curiosity
- Learning techniques improved by inquiry process
- How technology become ubiquitous [2]
- Learning metadata
- Learning framework example

Phrase two possible exam questions that capture the important parts of today's lecture:

- About seamless learning [2]
- How the content can influence the learning process of a student?
- What types of information we present in metaData?
- Theoretical aspects of Learning technology
- Examples of using ubiquitous computing in learning

What parts did you like most?

- Project they have been working on [3]
- Concepts and examples of ubiquitous computing
- Real world examples

What aspects remained unclear?

- Learning analytics example

What suggestions do you have for improving the lecture?

© 2014 LTP · About LTP · Campus Office · Impressum · Privacy · Developers · Contact · Support

JTL RWTH AACHEN UNIVERSITY

The Future of (e)Learning?


- ▶ Videos by groups „4 Bit“ and „ElJaS“in eLearning SS 13

1 Introduction

WHAT IS E-LEARNING?

What is eLearning?



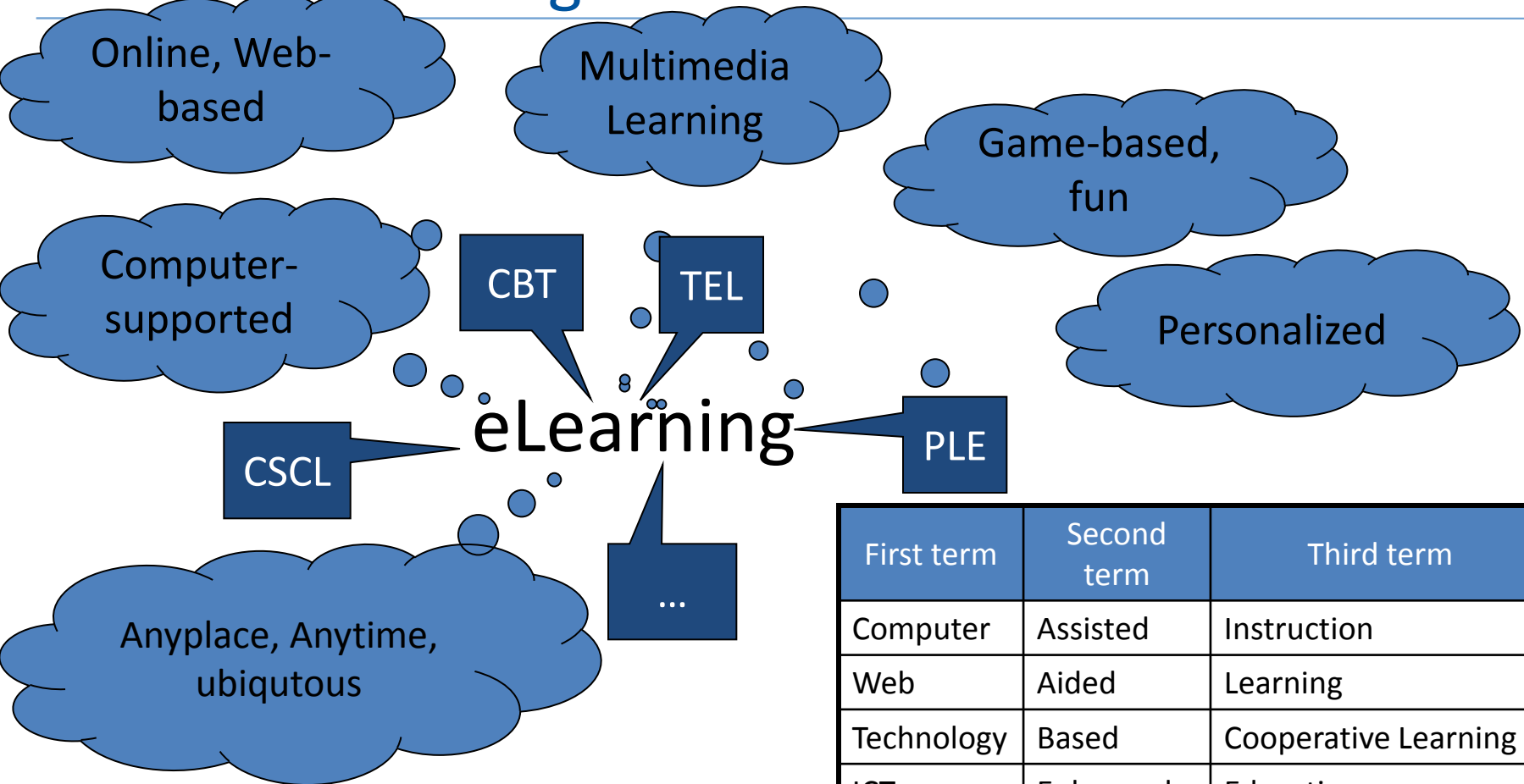
- ▶ Take a sheet of paper.
- ▶ Write down everything concerning eLearning what comes to mind! Don't think about it.
Anything what comes to your mind!!
- ▶ You have one minute 
- ▶ Now mark the 5 most important aspects
- ▶ ➔ MindMap

What do you know about eLearning?

Terms



What is eLearning?



First term	Second term	Third term
Computer	Assisted	Instruction
Web	Aided	Learning
Technology	Based	Cooperative Learning
ICT	Enhanced	Education
IT	Mediated	Training
Online	Interactive	Teaching
	Supported	Study
Select one of each column		

→ Different concepts

Quotes

Minas, 2002

“

But no matter what you call it, e-learning is really about one thing: using technology to give people the **knowledge** they need to do their **jobs**.

**Professional Learning,
Lifelong Learning,
Vocational Training**

Quotes

“
eLearning is what takes place
entirely within a **Web** browser.”

unknown

WBT, WBL, Web-based Learning

Quotes

Minas, 2002

“

eLearning is the **delivery of content** via all electronic media, including the Internet, intranets, extranets, satellite broadcast, audio/video tape, interactive TV, and CD-Rom.

LMS, VLE, TEL

Quotes

Cisco Systems
nach M...

“

eLearning is Internet-enabled Learning. Components can include content delivery in multiple formats, **management of the learning experience**, and a networked community of learners, content developers and experts. eLearning provides **faster learning at reduced costs**, increased access to learning, and a clear accountability for all participants in the learning process.

LMS, VLE, Web-based

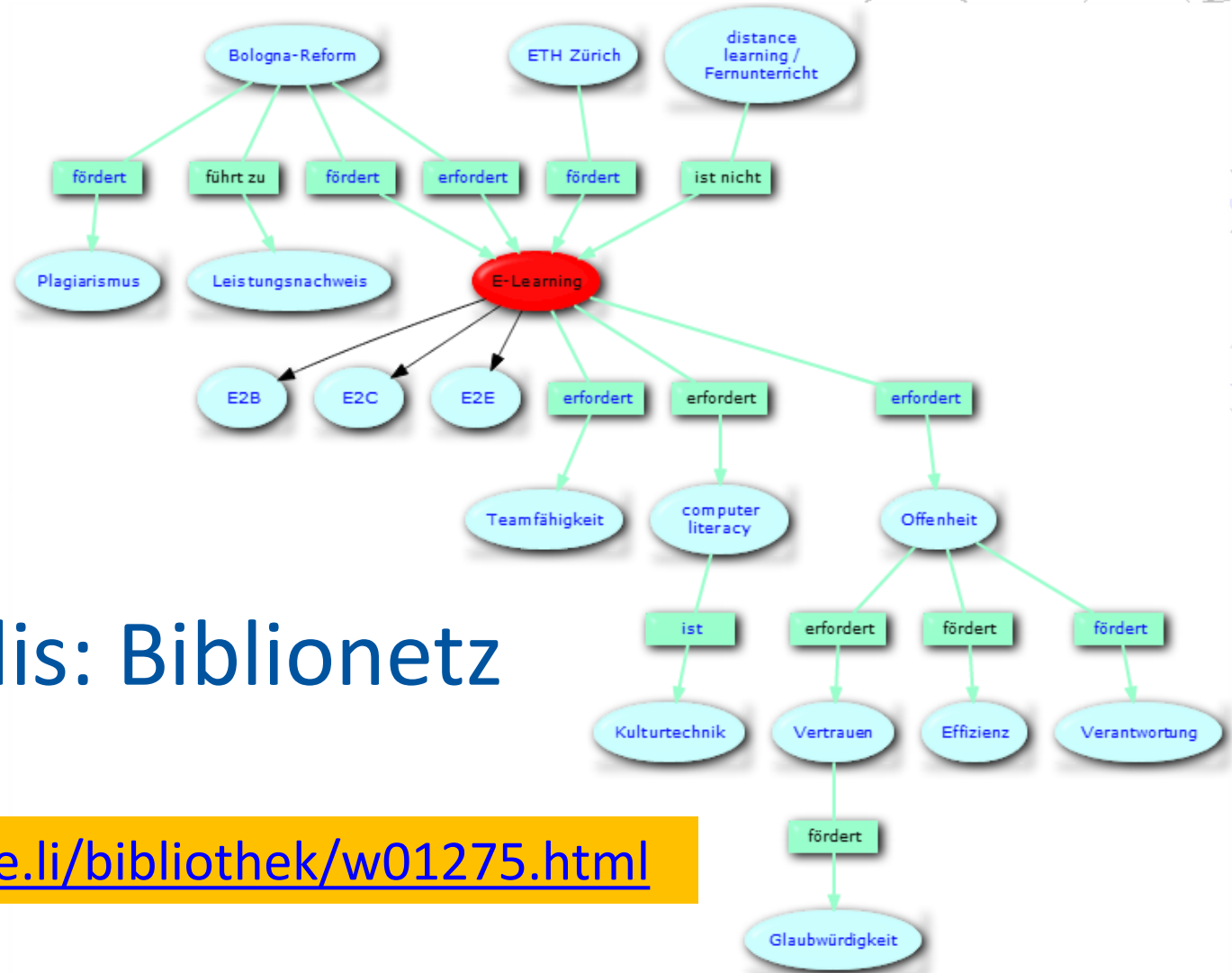
Quotes

Horton, 2006

“
eLearning is the use of
information and computer
technologies to **create learning
processes.**”

**VLE, PLE, TEL
Learning Environments**

BIBLIOMap zu "E-LEARNING"



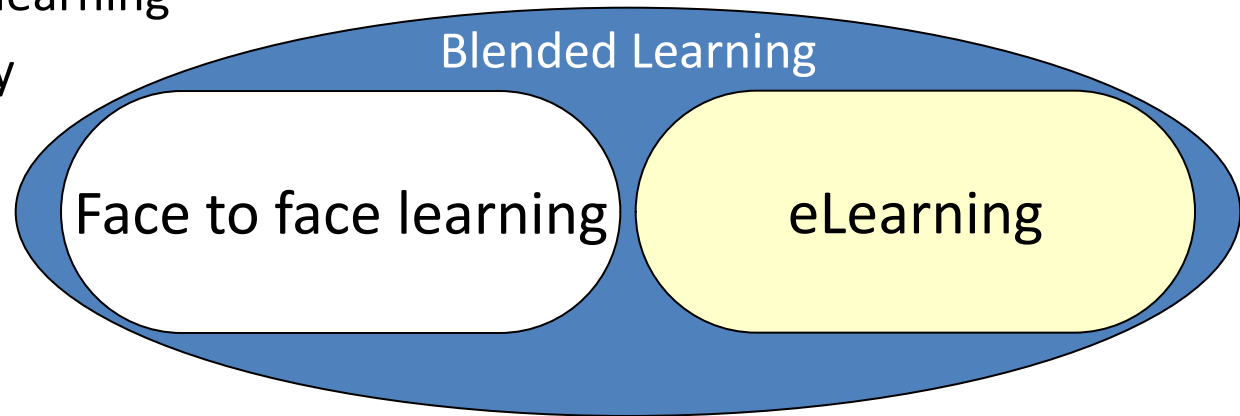
Beat Doeblis: Biblionetz

<http://beat.doebe.li/bibliothek/w01275.html>

eLearning / Blended or Technology enhanced

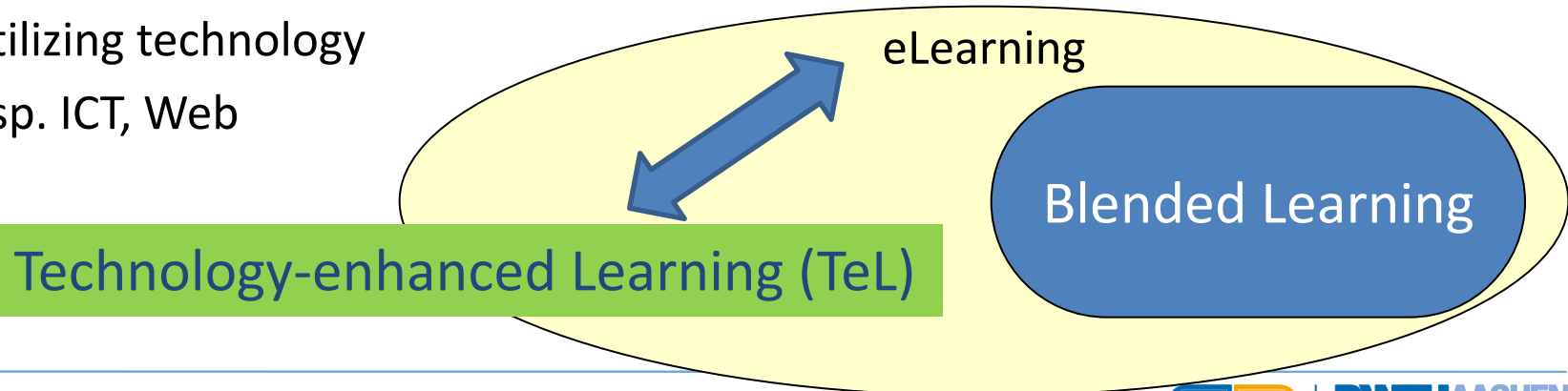
▶ Blended Learning = Face2Face + eLearning

- ▶ eLearning => distance learning
- ▶ Focal point: technology



▶ eLearning \supseteq Blended Learning

- ▶ New Learning methodology
- ▶ ... utilizing technology
- ▶ ... esp. ICT, Web



Categories of Learning Technologies

Learning Systems

Learning Technologies

Can „also“ be used for learning ...

Base Technologies

Synchronous
Communication

Asynchronous
Communication

Administration

Research

(Multimedia-)
Production

Evaluation

Hardware/Software

Categories of Learning Technologies

Learning Systems

Learning Technologies

Relation to learning

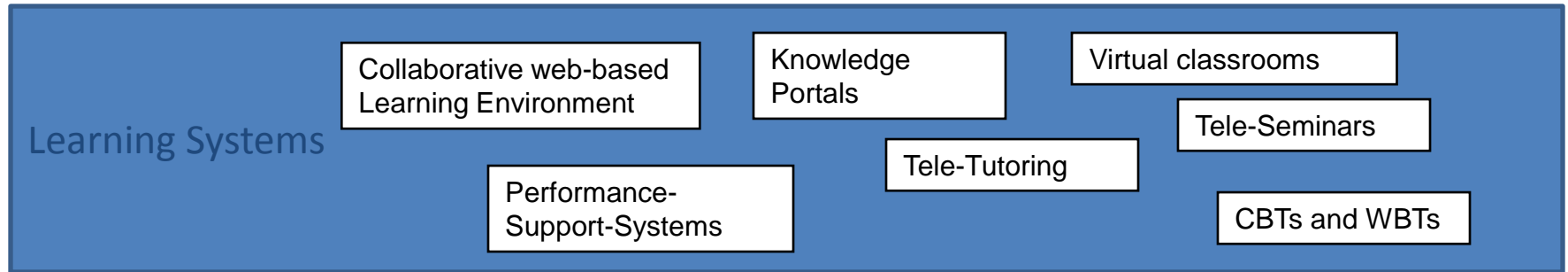
Learner

Content

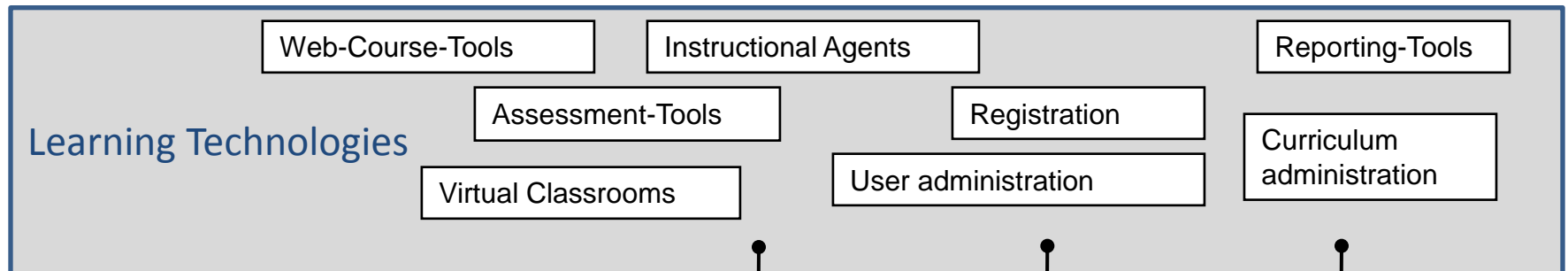
Processes

Base Technologies

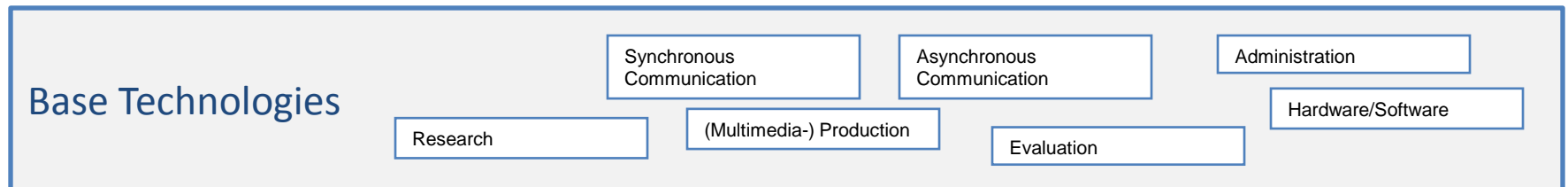
Categories of Learning Technologies



Relation to application context



Relation to learning



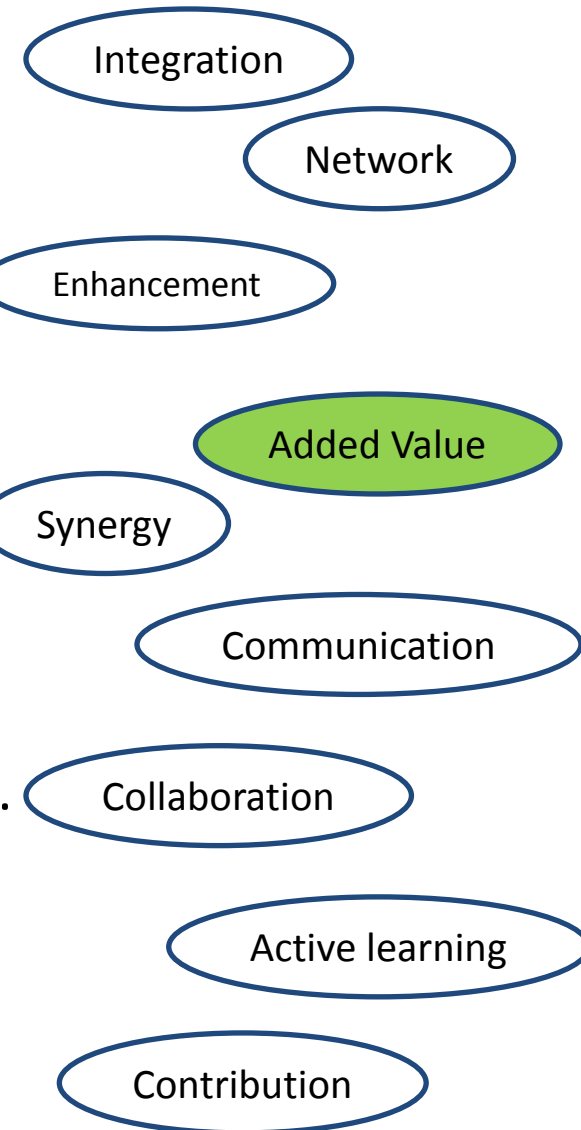
Institutional => Blended Learning

▶ Mix of methods, Integration & new forms

▶ Not only digital lecture notes & slides

▶ Examples:

- ▶ Surveys to check previous knowledge
- ▶ Organizational processes (groups, dates, ...)
- ▶ External Experts (e.g. Online-Meetings)
- ▶ Continue discussions
- ▶ Collaboratively work on documents, contents, ...
- ▶ Simulations for abstract, theoretical concepts
- ▶ Explorative learning, self-regulation and reflection



(In-/Non-)formal Learning

▶ Formal

- ▶ Institutional: kindergarden, school, university, vocational training, ...
- ▶ Planned instruction, professional teachers, didactics, structured curricula, (public) institutions

▶ Non-formal

- ▶ Self-regulated with a learning purpose: e.g. tutorials, language learning, evening classes, communities, ...

▶ Informal

- ▶ Associated with all-day life, any information processing during work and spare time

▶ Lifelong Learning

- ▶ Comprises all three forms => current research
- ▶ PLEs & Portfolio & Web 2.0

Varieties of E-Learning

- Standalone courses
 - Self-directed learning
 - Without interaction with instructors or classmates
- Virtual-classroom courses
 - Structured like a classroom course
 - May include synchronous online meetings
- Learning games and simulations
 - Learning by performing simulated activities that require exploration and lead to discoveries
- Embedded e-learning
 - eLearning included in another system, such as a computer program, a diagnostic procedure, or online help
- Blended Learning
 - Use of various forms of learning to accomplish a single goal
 - May mix classroom and e-learning or various forms of e-learning
- Mobile learning
 - Learning from the world while moving about in the world
 - Aided by mobile devices such as PDAs and smart phones
- Knowledge management
 - Broad uses of e-learning, online documents, and conventional media
 - To educate entire populations and organizations rather than just individuals
- MOOC, eLearning 2.0 ...

(cf. Horton, p. 2)



Group building ...
