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FLOP or TOP:

Experiences with E-Learning in Academic Education

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Content

- Introduction
- E-learning: Definition and concepts
- Teaching at BOKU and IVFL
- E-learning at BOKU and IVFL
- SWOT of e-learning
- Conclusions

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Introduction

- Knowledge is the fourth production factor of a modern national economy (labour, land/resources, capital)
- Education and training are the fundamental ingredients for the development of the resource Knowledge
- Knowledge is not a privilege for industrialised countries
- Research organisations and education institutions are in charge for the development and the transfer of Knowledge
- Research and educational bodies have to adapt their course programs to the demand of specific fields of profession and they have to introduce modern teaching technologies

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E-Learning: Definition

- „Approach to facilitate and enhance learning using computer, appropriate software and modern communication technology“
- E-learning is more than a technological tool for providing existing learning resources online
- E-learning must be seen as a pedagogical mean for enhancing the learning environment (Veenendaal et al. 2005)

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E-Learning: Potential

Potential of E-Learning can be characterised by three aspects:

- Other teaching and learning methods can be applied
- Increased flexibility of time and of place offer a better organisation of learning
- A shorter study time can be achieved

(Kerres 2004; Frohmann & Phan Tan 2005)

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Learning Concepts

Conventional Teaching

- Face to Face Teaching

E-Learning

- Distance Learning
- Blended Learning

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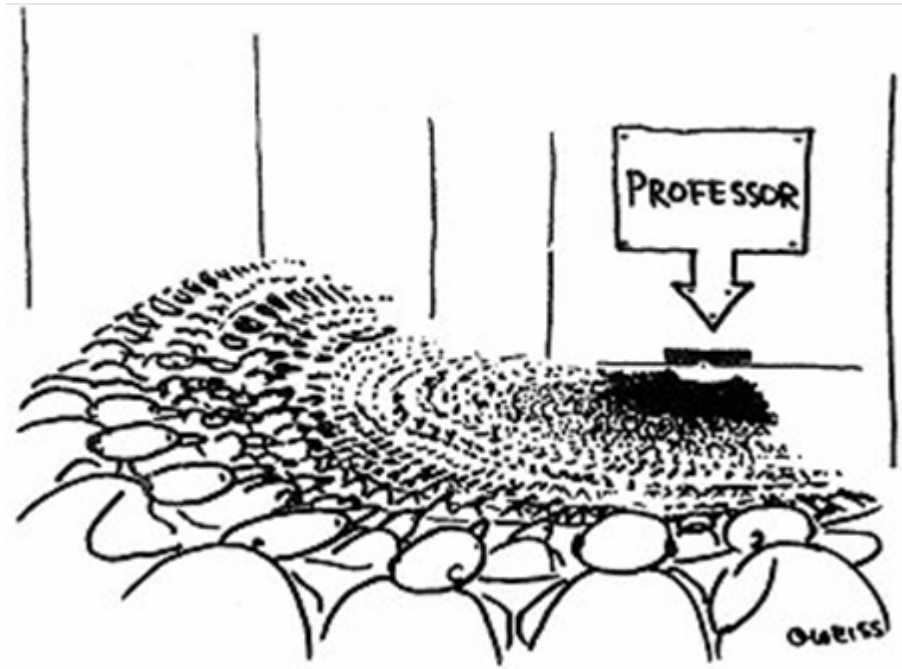
Learning Concepts

Conventional Teaching (Lectures, Seminars, Exercises, Field Trips, Projects, etc.)

- Face to Face Teaching



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Learning Concepts . . . cont.

E-Learning (Video, Forums, Simulations, Hypertext, Projects, Quizzes, etc.)

- Distance Learning

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Learning Concepts . . . cont.

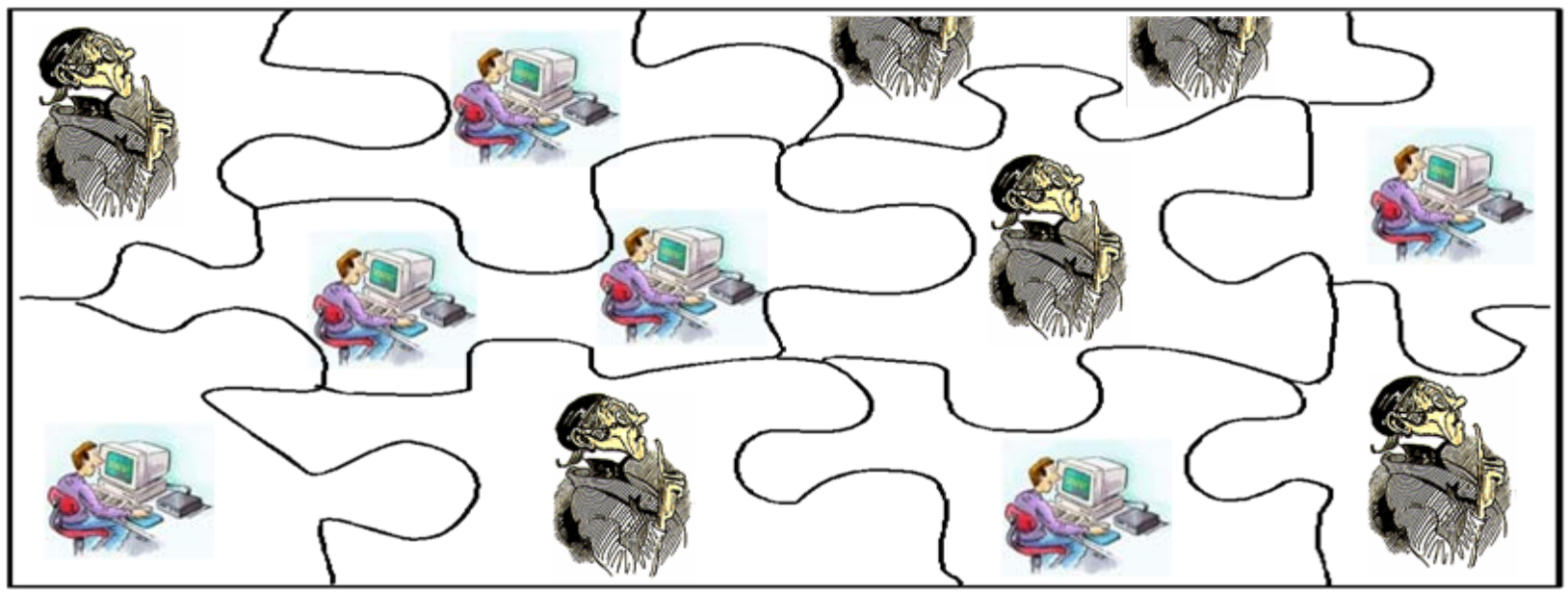
E-Learning

- Blended Learning (sequential)

Learning Concepts . . . cont.

E-Learning

- Integrated Learning (parallel and networked) Blended pedagogic (Oliver & Trigwell 2005)



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- 5500 students
- 500 teaching staff
- Fields of studies:
  - Land and Water Management
  - Environmental Sciences
  - Agricultural, Forestry and Wood Sciences
  - Biotechnology and Food Technology
- Courses (Curricula)
  - 9 Bachelor study courses
  - 19 Master study courses

Teaching at the Institute of Surveying, Remote Sensing and Land Information (IVFL)

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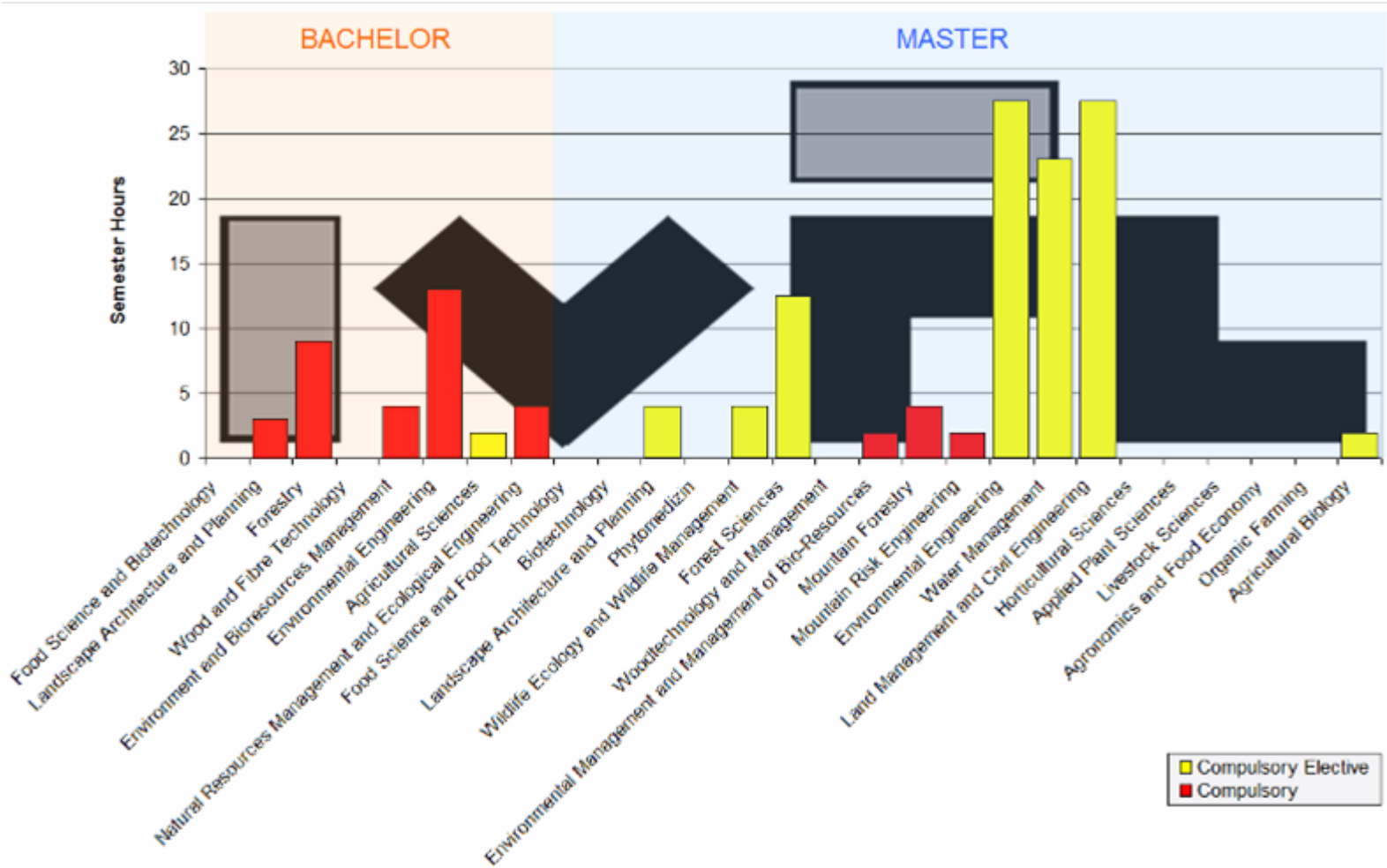

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E-Learning at IVFL

Motivation

- Saving teaching time in the lecture hall (up to 10 parallel groups due to high number of students)
- Harmonisation of knowledge (due to the different pre-university education of students
- *Surveyors are TECHNO FREAKS*

Experiences with e-Learning since 2001

ILIAS HYPERWAVE moodle

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E-Learning Supported Courses at IVFL

COURSE	Credits	Number of students
Surveying for Landscape Architecture and Planning	2.0 ECTS	160
Geo-Informatics	4.0 ECTS	30
Surveying and Mapping	1.0 ECTS	20
Geo-Data-Management	3.0 ECTS	15
International Land Management	2.0 ECTS	5
Remote Sensing and GIS in Natur. Resource Mngmt.	3.0 ECTS	20
Surveying for Environmental Engineering	3.0 ECTS	112
Location and Navigation Using Satellites	3.0 ECTS	25
Remote Sensing	2.0 ECTS	112
Geographical Information Systems	1.0 ECTS	160

Bachelor course level -

Master course level -

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Application of E-Learning at IVFL

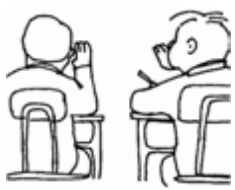
Levels:

- Face to face teaching (provision of course materials)

- Blended learning

- Distance learning

- Online examinations and self assessments



E-Learning – Level 1:
Provision of Course Materials

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E-learning tools used:

- Delivery of news (e.g. change of dates for course, meeting points)
- Delivery of teaching documents (presentation slides, textbook)
- Board for the announcement of examination results

E-Learning – Level 2: Blended Learning

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E-learning tools used (additional to Lev.1):

- Discussion forums (teacher ⇔ students, students ⇔ students)
- Online chat
- Self assessment quizzes to harmonise the knowledge of students
- Links to web-published literature
- Down- and upload of assignments (including information to tasks and grading)

E-Learning – Level 3: Distance Learning

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E-learning tools used (additional to Lev.2):

- Animated gifs and films to advice students in the handling of software tools
- Surveys for evaluation of course acceptance

E-Learning – Level 4:
Self Assessment Quizzes and Online-Tests

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Options for the performance of tests, like

- Definition of a time limit or attempts allowed
- Possibility to shuffle the sequence of questions and answers
- Bundle of security options for providing the tests only to the examinees

Tests at IVFL were prepared using he following test possibilities:

- Single answer, multiple answer and true-false questions,
- Embedded answers,
- Matching,
- Numerical examples

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SWOT – Strength („TOPS“)

- High flexibility in regard to workplace and to time for lecturers and students
- Students decide individually about the sequence and pacing of learning
- Easy access to learning materials for students
- Ideal communication platform between teacher(s) & student(s)
- Students appreciate testing their knowledge using self-assessment quizzes
- Self-assessment quizzes harmonize the degree of knowledge
- Online-examinations are time saving for teachers
- Software *Moddle* offers high stability and good performance (at BOKU)

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SWOT – Weaknesses („FLOPS“)

- Preparation of e-learning courses is a time-consuming process
- Communication with students (discussion forums and chats are hardly accepted by the students)
- Lack of infrastructure in student‘s home (hardware, internet access)
- Screen-handling is exhausting
- Students argue increased efforts for e-learning supported courses

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SWOT – Opportunities („TOPS ?“)

- E-learning tools make the learning process more interactive
- E-learning as a tool for the paradigm shift
  - from teaching to learning (teacher-controlled learning, guided learning, self-controlled learning, cooperative learning),
  - from conveying knowledge to sharing ideas,
  - from delivering answers to facilitating problem-solving
- Preparation of e-learning elements is more creative than replication of teaching for several teaching units
- Merging of University Information Systems and e-learning systems

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SWOT – Threats („FLOPS ?“)

- The use of „e-tools” cannot and does not replace excellent knowledge and good didactic skills of teachers
- E-learning cannot be seen as “time-saving” for teachers
- “Virtual University”
  - virtual classrooms,
  - virtual teachers,
  - virtual students,
  - virtual practicals, ….
- E-examinations: “Trust is good – control is better”

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Conclusions

- Blended learning is the ideal teaching concept for the future, varying
  - Learning concepts
  - Duration of specific methods
  - Didactic tools
  - Number of students in teaching units (individual, student groups, plenum)
- Implementation of e-components does not save time
- E-learning demands a high degree of internet penetration within a country
- E-components enable new possibilities of knowledge transfer – also in terms of life long learning
- E-learning opens new potentials for interdisciplinary and inter-university cooperation on national and international level (Virtual Classroom)

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What remains to be said . . .

. . . at BOKU in general and at IVFL in particular the first stage of implementation was due to infrastructural and software specific problems a

FLOP

BUT - the situation changed in a positive way and based on the experiences of the last six months: E-Learning in academic education is

TOP

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THANK YOU
for Your Attention

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