Blended-learning practice
at the Budapest University
of Technology and Economics

KOSA, Zsuzsanna PhD associate professor,

Department of Telecommunications and Mediainformatics

Faculty of Electronic Engineering and Informatics

kosa@tmit.bme.hu; https://www.tmit.bme.hu/kosa.zsuzsanna?language=en

What is e-learning in infocommunications

E-learning is a new content-providing application-layer above basic infocommunication services and it provides a set of opportunities to:

- provide wide range of knowledge-based information to students during their studies, extending their personal meetings with their teachers;

- provide online courses for special groups of students: living with disabilities or working in different hours on different weeks

- provide distance-learning for students working for a company in rural area

- *keep or rebuild the knowledge of former students keeping in touch with them online*

More see in International Journal on E-Learning (IJEL) https://www.aace.org/pubs/ijel/

Benefits, opportunities and challenges of e-learning in the academic sector

Benefits

✓Quick transfer of the learning materials to students, who are „born digitals"

✓Mainly paperless learning process , easy to store and re-use

Opportunities

➢ Take pictures or videos about the lectures and put into LMS systems
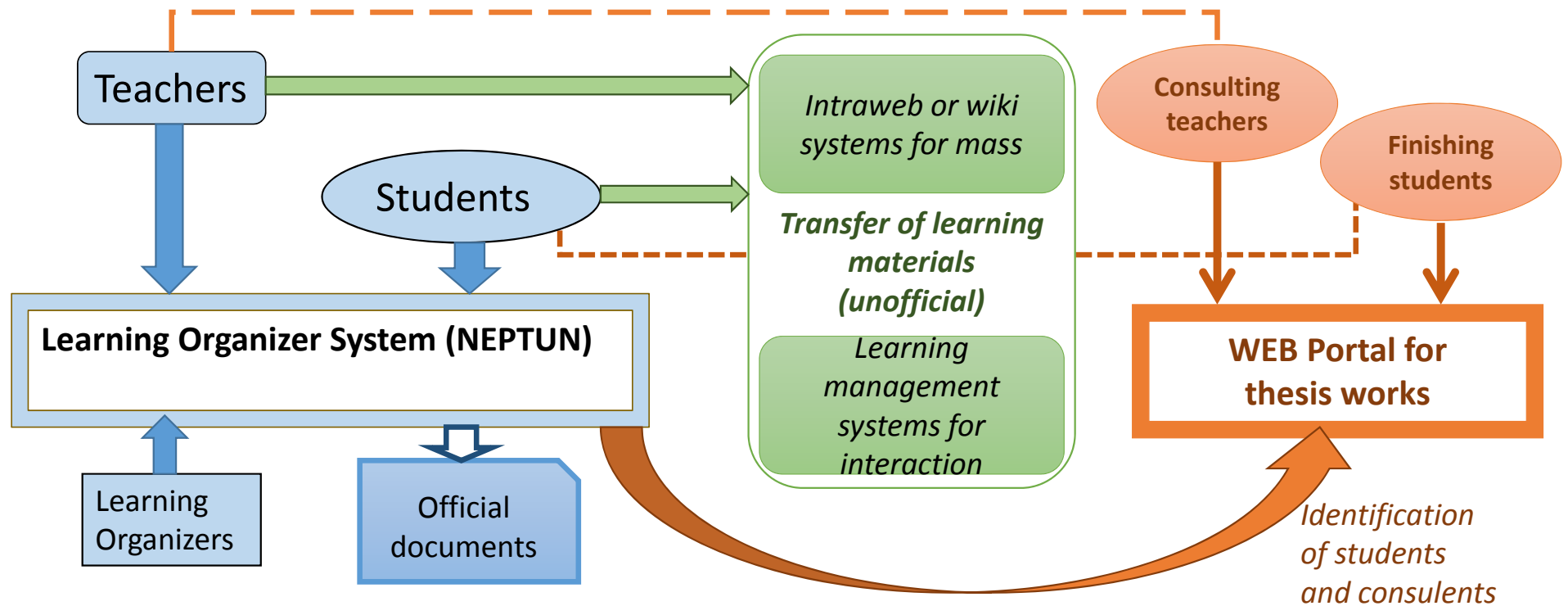
➢ Teach adult students after their working days

Challenges

▪ Teachers may have less skills to handle LMS and LCMS systems than their students

▪ It is hard to measure the working hours of the teacher dealing with e-learning materials

Fears and hidden risk

❖*To use more e-learning tools instead of contact-hours for the same educational program, might be risky for the institutions (?)*

Set of information systems used by a university for e-learning

Teachers

Students

Intraweb or wiki systems for mass

Transfer of learning materials (unofficial)

Learning management systems for interaction

Consulting teachers

Finishing students

Learning Organizer System (NEPTUN)

Learning Organizers

Official documents

WEB Portal for thesis works

Identification of students and consulents

Universities can integrate e-learning tools into their working flow:

Train the organisers to use properly the Learning Organiser System (Neptun),
  to build up proper schedules & room distribution,
  handle credit system & individual exemptions

Train the students online, how to use the Learning Organiser System (Neptun),
  to build up their individual credit-based schedule

Operate **intraweb pages or wiki-s** to the mass-courses,
  where there are less interactivity

Use unified and well known **LMS** (like Moodle or others)
  to share learning materials and the contents related to the courses

Build up transparency of the theses using web-portals for administration

*Use **online tests** or mid-term exams, final exams, when it is needed (it is not widly used yet)*

Teach the teachers, how to use the applications above

# Experiences of Budapest University of Technology and Economics (BME)

I.   **Learning Organizer System: NEPTUN**

II.   **Transfer of course materials to the students**

III. **Online courses to bridge distance
      for the group of workers at BOSCH in Hatvan**

IV.   **Web-portal for theses to inform teachers, students and the public**

V. **Examples of new initiatives**

Experiences of BME I.:
Neptun Learning Organizer System (LOS)

❑ NEPTUN (LOS) *summarizes the organizing informations* related to the courses, teachers, students, acheved results

❑ NEPTUN (LOS) provides *archivation for the past courses* participants and achievements

❑ NEPTUN (LOS) provides *individual surfaces* for the students, and also for the teacher, another for the operators of the departments

❑ *Individual exemptions can be handled*: mainly in master courses, when the student is obliged to extend his/her normal set of courses with additional „credit-recovery" courses
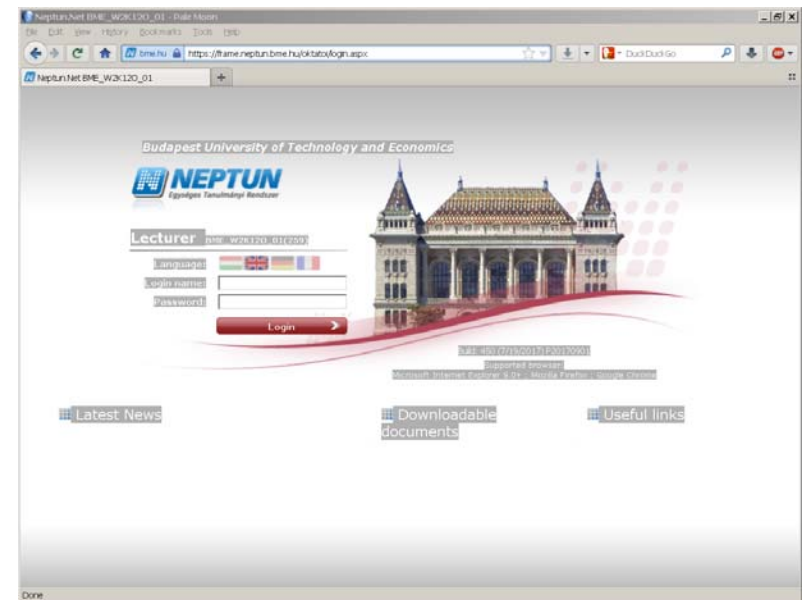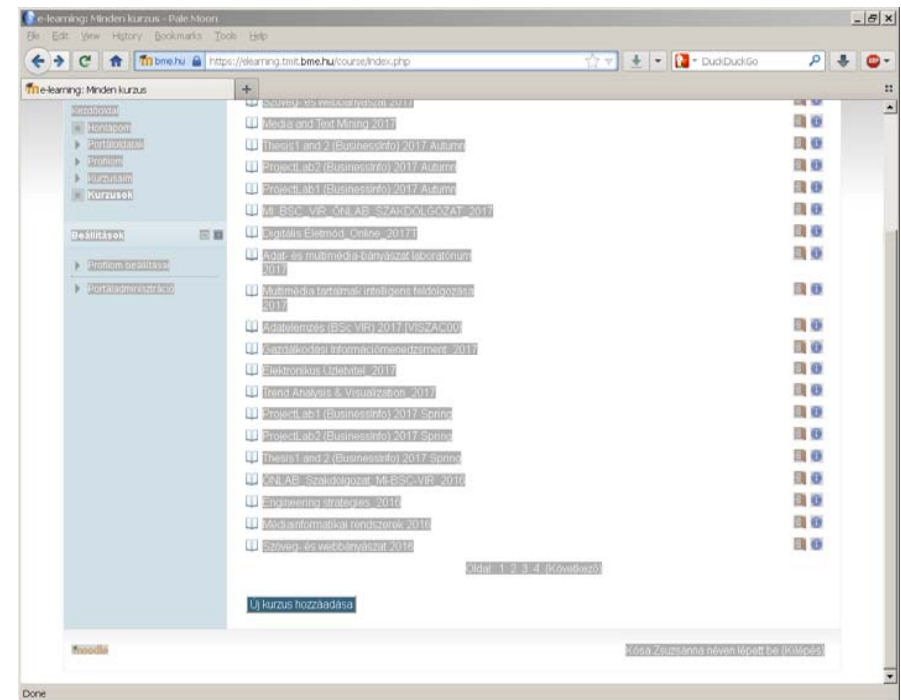
Experiences of BME II:
Transfer of course materials to the students

❖ Different methods are used by different departments:

- In mass-courses, where the interactivity level is low, intraweb pages or wiki-applications are used

- In smaller courses Moodle (LMS) systems are used, when individual homeworks are made or expected by the students.

❖ Paper-based transfer of the course materials has been eliminated step by steps in the last few years.

The transfering tool is selected by the teachers. Students have to accomodate themselves to several learning or content sharing system.

Experiences of BME III:
Online courses to bridge distance
for the group of workers at BOSCH in Hatvan

❖ Bosch is a large multinational firm, and operates a factory in Hatvan, about 60 km far from Budapest.

❖ The large firm initiated to build up a special group-based Electric Engineering BSC course located in Hatvan.

❖ 10 adult workers has long weeks: four days working, two days learning on the spot (teachers travel there, not the students)

❖ Some management courses are given to this special group via Moodle LMS system: about Digital way of living, and Engineering Management Methods. Each week they get presentation on-line and get homework excercise also and it is evaluated week to week.
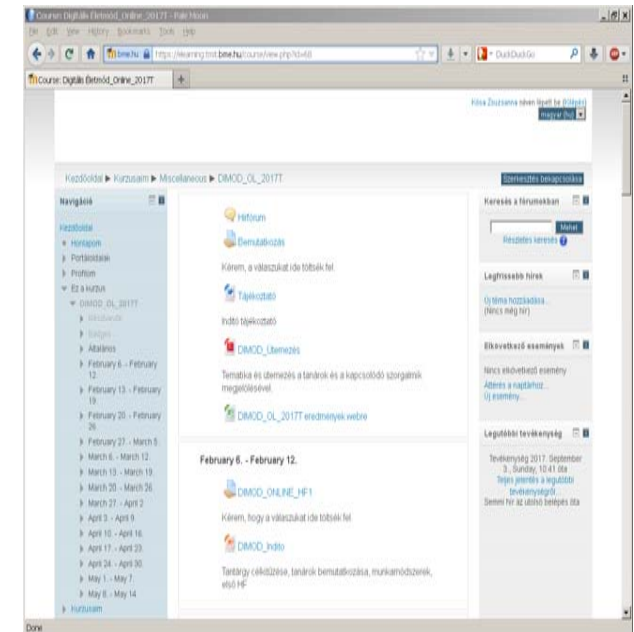
Experiences of BME IV.
Web portal for thesis works of the EEI Faculty

- Each topic, task description, study , evaluation related to theses of BSC and MSC educational program

- It provides individual view for participants: students and teachers

- It provides transparency for the university and the public about the ongoing and the past activities related to closing written material of the educational programs.

- *Theoreticaly it is possible to ask to handle the thesis material closed, but it is very difficult to reason it. (Only 5% of the students can get it.)*
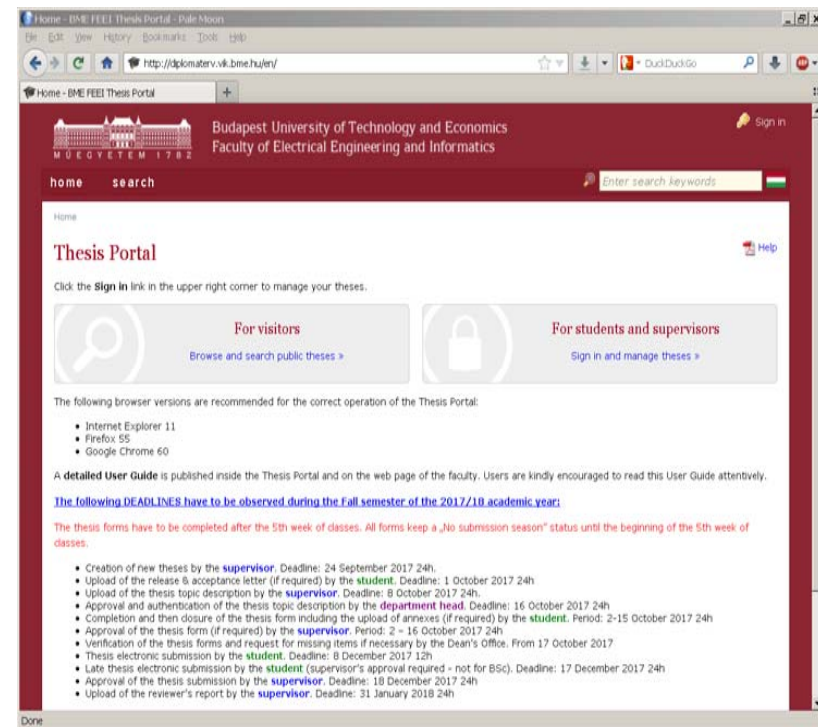
Experiences of BME V.: New initiatives

Using Google Education Suit

as a framework for sharing learning materials

https://edu.google.com/

Based on that, it is easy to build up interactive tasks for the students online.

Virtual/Augmented Reality Colaboration Area (VIRCA)

as a 3D visualisation place for learning experiences

http://www.virca.hu/

Opportunities to step forward in e-learning at a university like BME

➢ Integrate the **learning material transfers** from teachers to students

➢ **Train the trainers** with compulsory participation on the course

➢ Use existing **LMS** systems for **teaching handicapped students**

➢ **Sell more educational programs** for large multinational companies out of the campus

➢ *Extend the usage of electronic mid-term exams*

➢ *Take videos about the ongoing contact-lectures and use them through web pages*

➢ *Build up distance-learning courses for alumni*

➢ *Use the new technologies to make teaching*

E-learning in infocommunications, why to do it (summary)

E-learning is **set of IT technologies** to organise the learning process and transfer learning materials from teachers to the students and the public.

E-learning systems provide **technical basis for asinchroneus learning process** for the teacher and the student, while they keep in touch.

E-learning is **a discipline for** technologised **knowledge-converting process** from knowledge holder to knowledge receiver

LMS systems are used mainly for **blended learing**: extending the contact opportunities among students and their teachers

Special groups, like distance-learners or disabled **can** also **be handled** by e-learning systems.

There is a **need for train the trainers** to sperad this discipline widely