KU LEUVEN

CYBPHYS

Implementation of Innovative ICT based Teaching & Learning Methods (related to WP3)

Joan Peuteman

Workshop and Management meeting: July 4-5th (2022).

Erasmus+: Development of practically-oriented student-centred education in the field of modelling of Cyber-Physical Systems (CybPhys)

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Basic goal

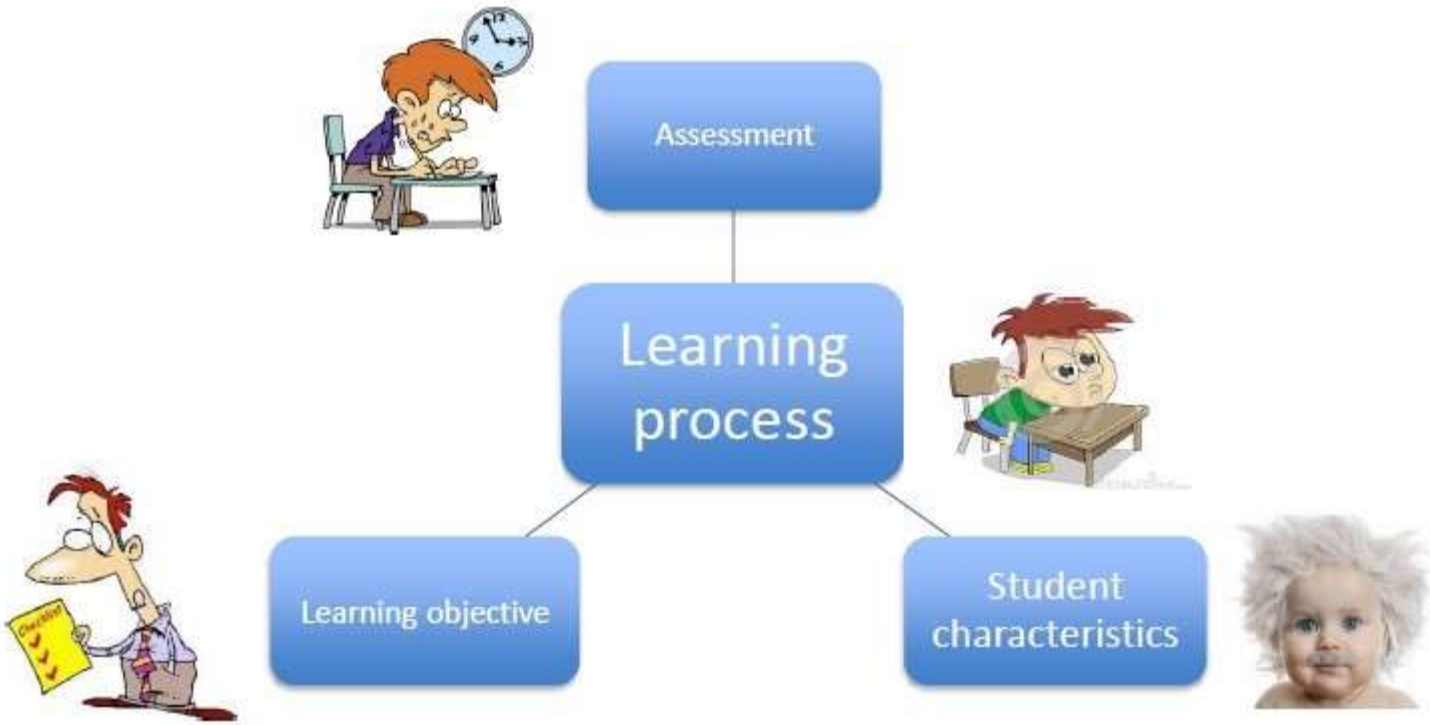
Teaching and preparing students:

- to think and act as an academically skilled person,
- to realise an industry oriented career,
- to realise an academic and research oriented career.

A decent **learning process**, embedded in a learning environment, is needed to reach these basic goal(s).

Basic goal

The **learning environment** is often modelled as:



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Basic goal

ICT based tools

Virtual Learning Environments

Practical realisations

Pedagogical competences

Student trainings

Connecting WP3 and WP4

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ICT based tools

The learning process and the content of the course is very important.

Paper based course materials remain important. But

- **digital content** is easy to adapt to new circumstances,
- **digital content** is easy to structure,
- **digital content** provides new possibilities.

This is very important from the point of view of the teacher/professor.

ICT based tools

Digital content, ICT based tools are an important topic in the present Erasmus+ project CybPhys: **WP3**

- Creation of an **e-library**: we all together developed *e-books*

A **Virtual Learning Environment** is also an important tool.

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Virtual Learning Environments

A **Virtual Learning Environment** allows teachers to

- provide students with study material of different types (for example e-books),
- interact with the students in real-time,
- follow the evolution of the learning process,
- know the performance of each student in specific tasks,
- …

Virtual Learning Environments

A **Virtual Learning Environment** is known to be especialy useful when teaching ‘science’ and ‘physics’.

Objects of many types of information can be used:

- Text documents
- Videos and mp3
- Scanned images
- Links to websites
- Animations
- Simulations
- …

Virtual Learning Environments

A **Virtual Learning Environment** provides useful tools

- uploading of course material i.e. course content
- questionnaires + quizzes
- (peer)assessment
- communication (including chat sessions and forums)
- wikis and blogs
- tracking tools
- providing feedback to the students
- administration of student groups
- …

Virtual Learning Environments

Virtual Learning Environments can be:

- Commercial software (e.g. Toledo, Blackboard)
- **Open source software** (e.g. Moodle)

In the present Erasmus+ project CybPhys, the decision has been taken to use **Moodle**.

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Practical realisations

In combination with the **development of the e-book** on “cyber-physical systems for clean transportation” and other contributions to e-books:

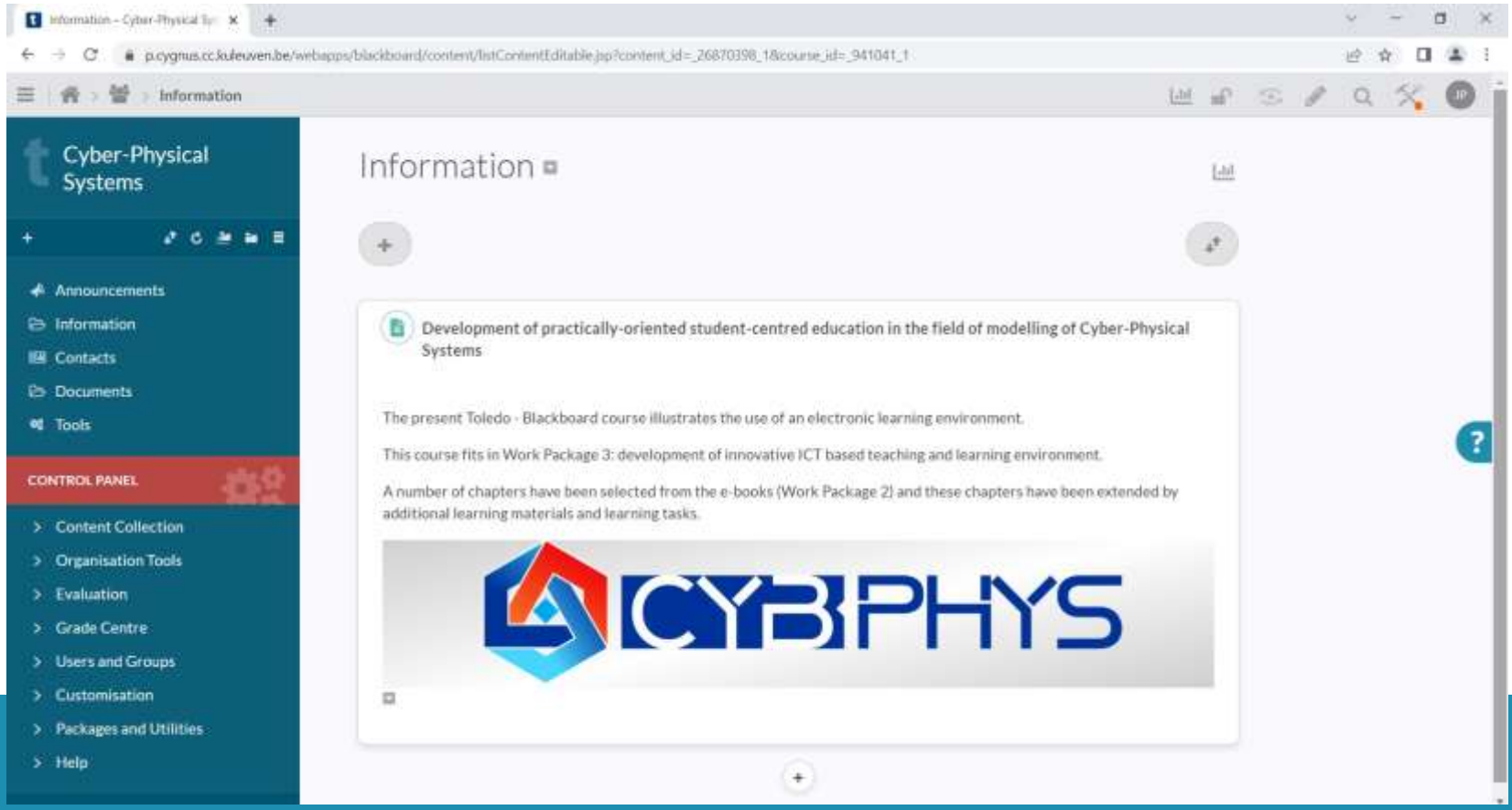
- The KU Leuven has shown the possibilities of the use of a **Virtual Learning Environment** based on these course materials
    - This information has been useful during our **meetings**.
    - This information has been useful during the **teacher training organized in September 2021**.

    = development and use of “good practices”.

Practical realisations

Developping and using “**good practices**” with

- **Blackboard – Toledo**: ‘Cyber-Physical Systems’



Practical realisations

Developping and using “**good practices**” with

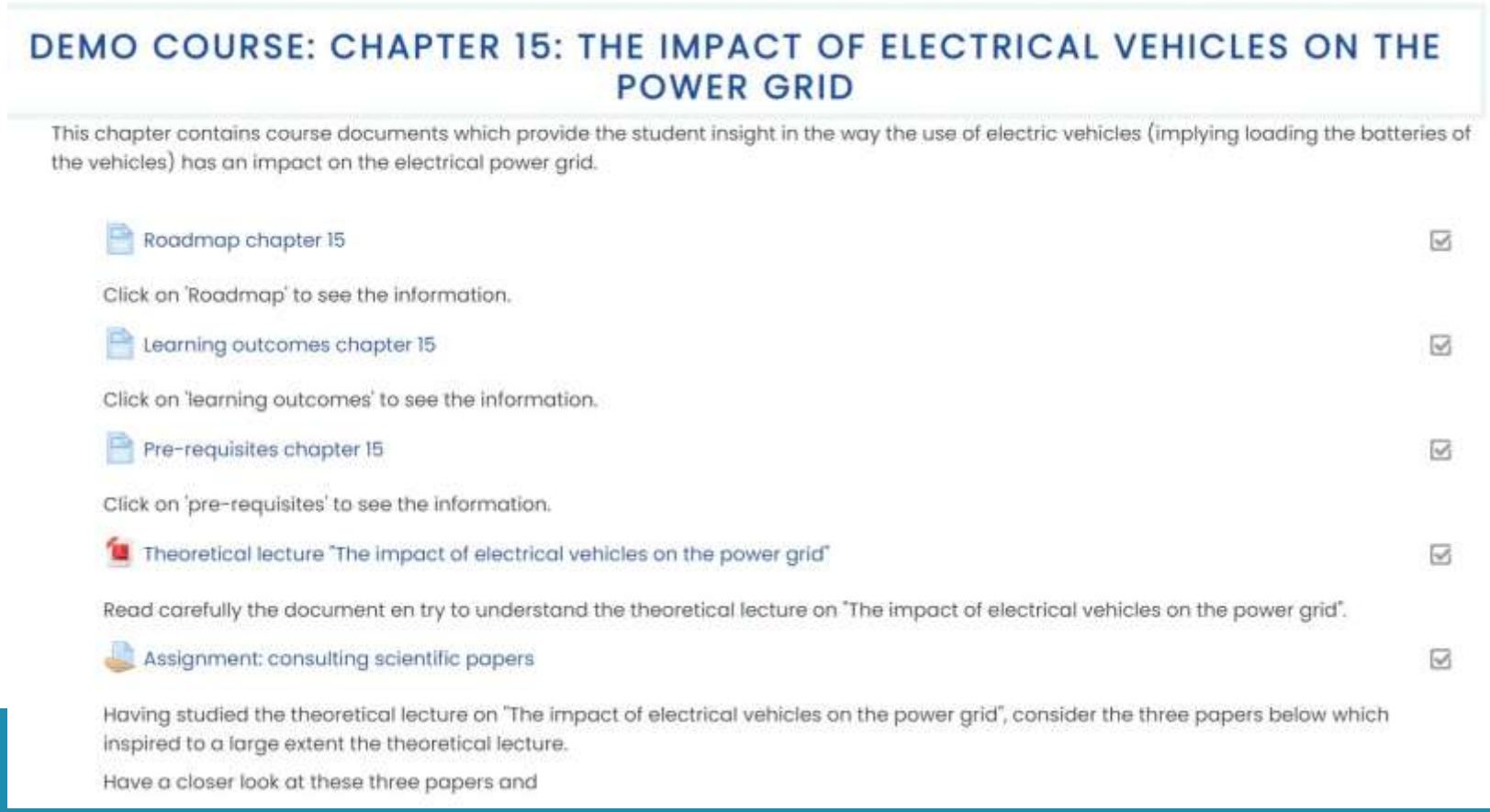
- **Blackboard - Toledo**: ‘Cyber-Physical Systems’

  Integrating pedagogical movies (multimedia materials).

Practical realisations

Developping and using “**good practices**” with

- **Moodle**: ‘Cyber-Physical Systems’



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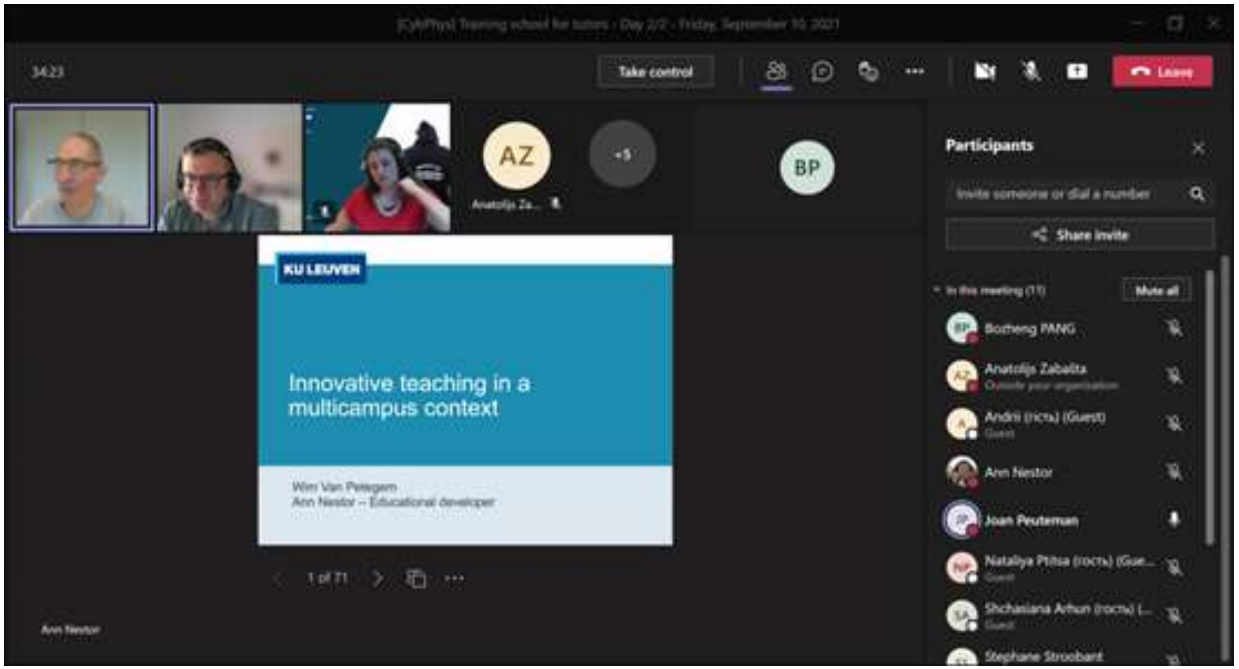
Pedagogical compentences

European and Ukrainian partners learn from each other.

Exchanging knowledge and experience

Teacher training on September 9-10th (2021)

(MS TEAMS due to COVID-19 pandemic)

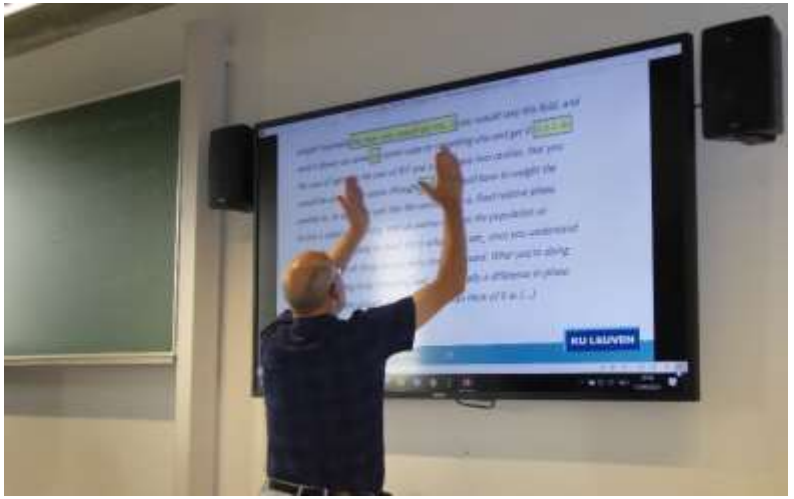


Pedagogical compentences

European and Ukrainian partners learn from each other.

Exchanging knowledge and experience

English language training training
on September 13-17th (2021)



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Student trainings

For the Ukrainian students,

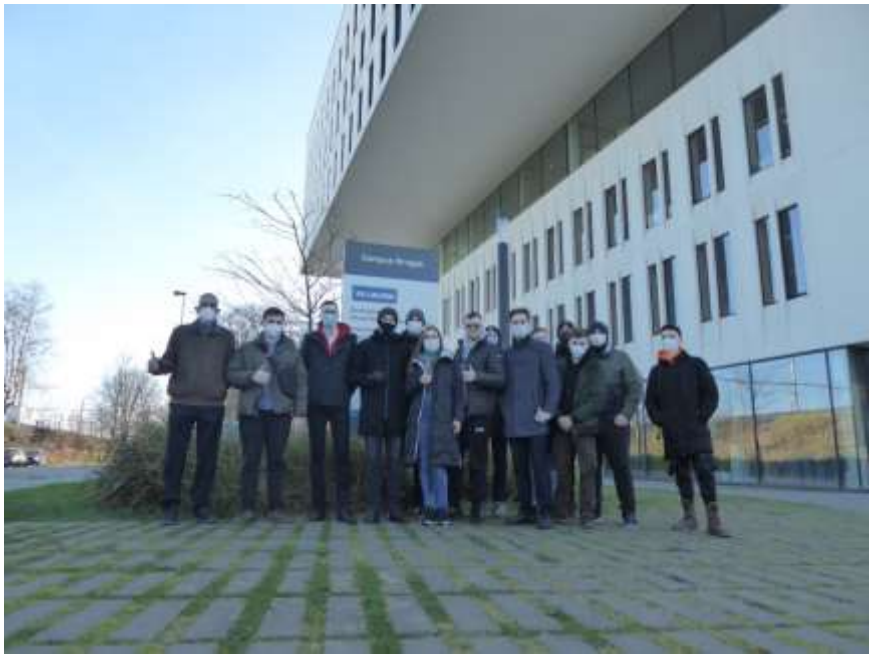
- an international experience,
- obtaining familiarity with the English language,
- gaining theoretical and practical experiences (science and technical education)

is important.

On January 17-28th (2022) students participated at a student training in Riga (Latvia).

Student trainings

On February 7-18th (2022) students participated at a student training in Bruges (Belgium).



Are there possibilities to organise a student training in Nicosia (Cyprus)?

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Connecting WP3 and WP4

We already discussed WP4:

Developing the Sharing Modelling and Simulation Environment Platform: SMSE

Are there opportunities to connect WP3 and WP4?

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Thank your for your attention!

Questions?

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