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Campus Bruges

Application of Innovative ICT Based Teaching Methods & Electronic Environments (related to **WP3**)

Erasmus+ Project “PHYSICS”

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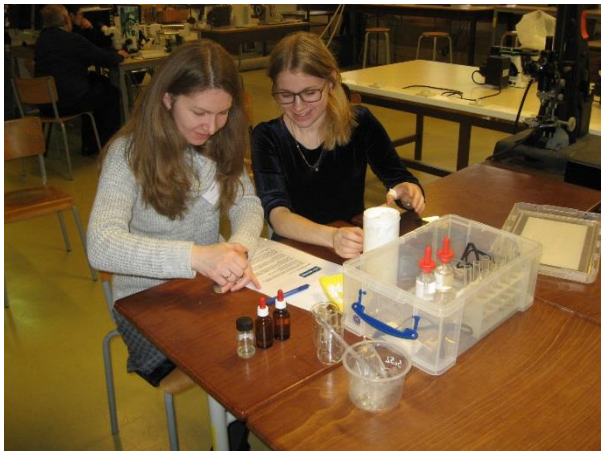
Main goal

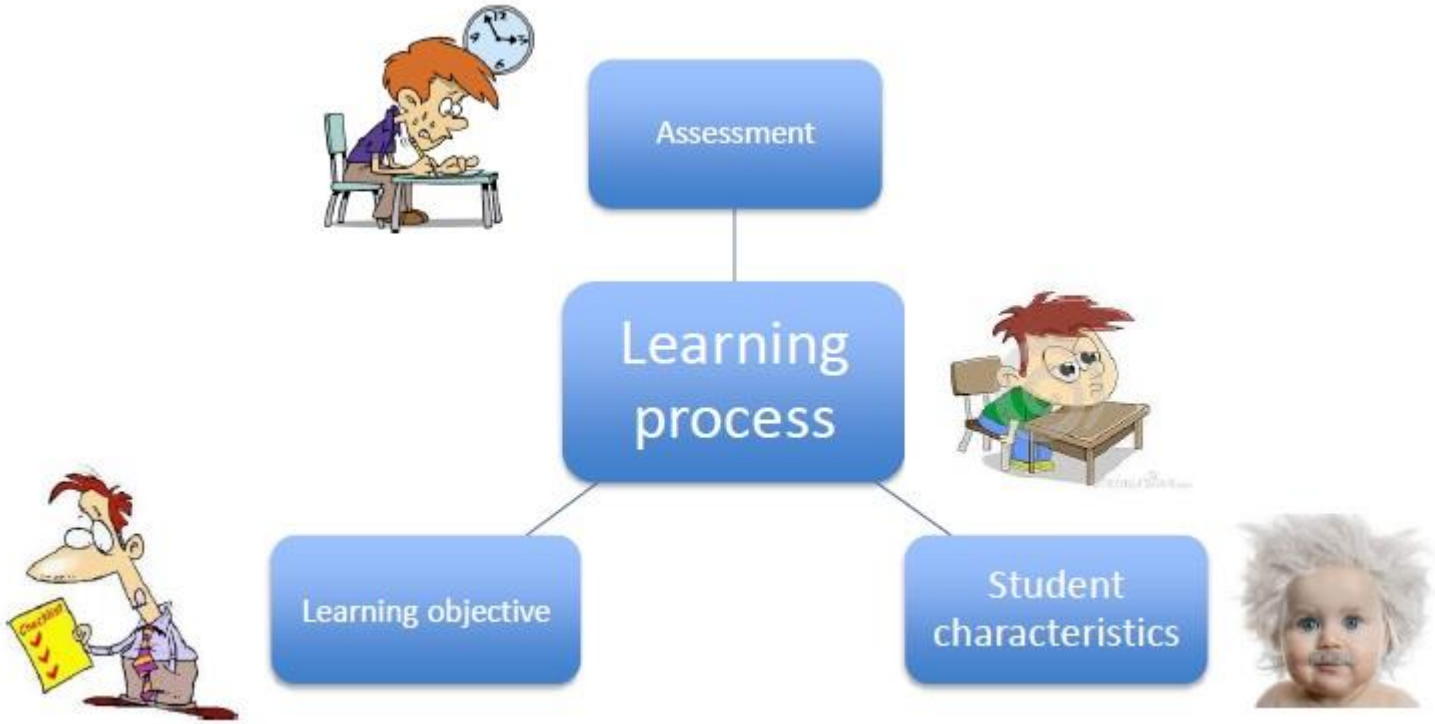
- Teaching and preparing students:
  - ✓ *To think and act as an academic skilled person*
  - ✓ *Preparing students, both for:*
    - *An academic and **research oriented** career*
    - *An **industry oriented** career*
  - ✓ *Preparing students and teaching staff to gain (ICT)-**communication skills***



Main goal

Realizing a **learning process**:

→ Model:



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Main goal

- The **learning objectives** for each course need to be formulated:
  - ✓ knowledge, attitudes, skills, … to be reached
    - ➢ the teacher as well as the student need *a clear objective, a clear reference*
- The **student characteristics** are important:
  - ✓ prior knowledge, learning level, motivation, interests, age, …
    - ➢ the teacher as well as the student need to know *where to start from…*
- The student needs to be **evaluated (assessment)**:
  - ✓ formative and summative, … when, what, how,…
    - ➢ The assessment needs to be representative in relation to the learning objectives

Practical realization

- Traditional ‘ex cathedra’ teaching will not disappear:
  - It is an efficient way to transmit **knowledge** and academic insights.
  - **Learning objectives** can be formulated in a clear way.

But there are number of important **restrictions**:

- It is very hard to deal with **different student characteristics** (differences in prior knowledge, learning level, interests, motivation, …)

Practical realization

Traditional ‘ex cathedra’ courses will not disappear.

But, technological evolutions allow **new opportunities**.

Digitizing the content of courses is useful. Using a **Digital Learning Platform** like **Blackboard** or **Moodle** is an important option.

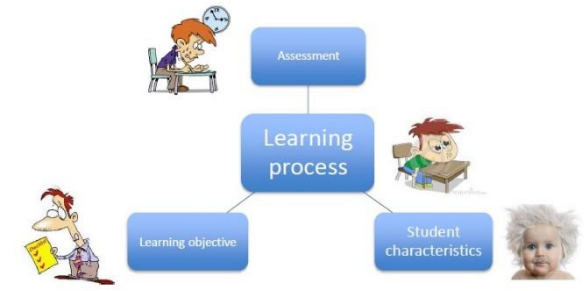
Digital Learning Platform

Digitizing the content of courses ***makes it possible*** to apply a digital learning platform, such as Moodle, in a dynamic way, i.e. to:

- ✓ Frequently re-use the digital content
- ✓ Adjust and elaborate the course content
- ✓ Structure and re-structure the content, while adapting to
  - The learning outcomes
  - The students needs
  - The students' learning process

On the other hand, a learning platform remains only a tool,

... to be used by the student… and the teacher/tutor.



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Digital Learning Platform

- A **Digital Learning Environment** allows to:
  - provide students with study material of different types (for example e-books, downloadable video recordings)
  - follow the evolution of the learning process
  - observe the performance of a student in specific tasks
  - give (individual) feedback to the students

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Digital Learning Platform

- A Digital Learning Environment is known to be useful when teaching '**science**' and '**physics**'.
- Objects of many kinds can be used:
  - Text documents
  - Videos & Images
  - Links to websites
  - Animations
  - Simulations
  - …

The use of Moodle

- In **the Moodle system**, an online course “Applied Physics” has been made.
- Other courses of the Physics project are available.
- Let’s have a look… :
  - → MOODLE: See http://dl.bsu.by/
  - → Hands-on “presentation”

The Moodle course “applied physics” contains several **downloadable video recordings**.

Teacher Training

- In February 2018, we had a **teacher training at Riga Technical University**.

- On February 6th (2018), **a basic course on the use of Moodle** has been taught among the participants.

Teacher Training

- The basic course on Moodle contained:
  - **Introduction** to innovative teaching methods
  - The use of a digital learning environment
  - **Practical demonstration**: Blackboard
  - Practical demonstration: Moodle
  - **Hands-on exercises**: Moodle

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Questions?

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