



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

Erasmus+ Project “PHYSICS”

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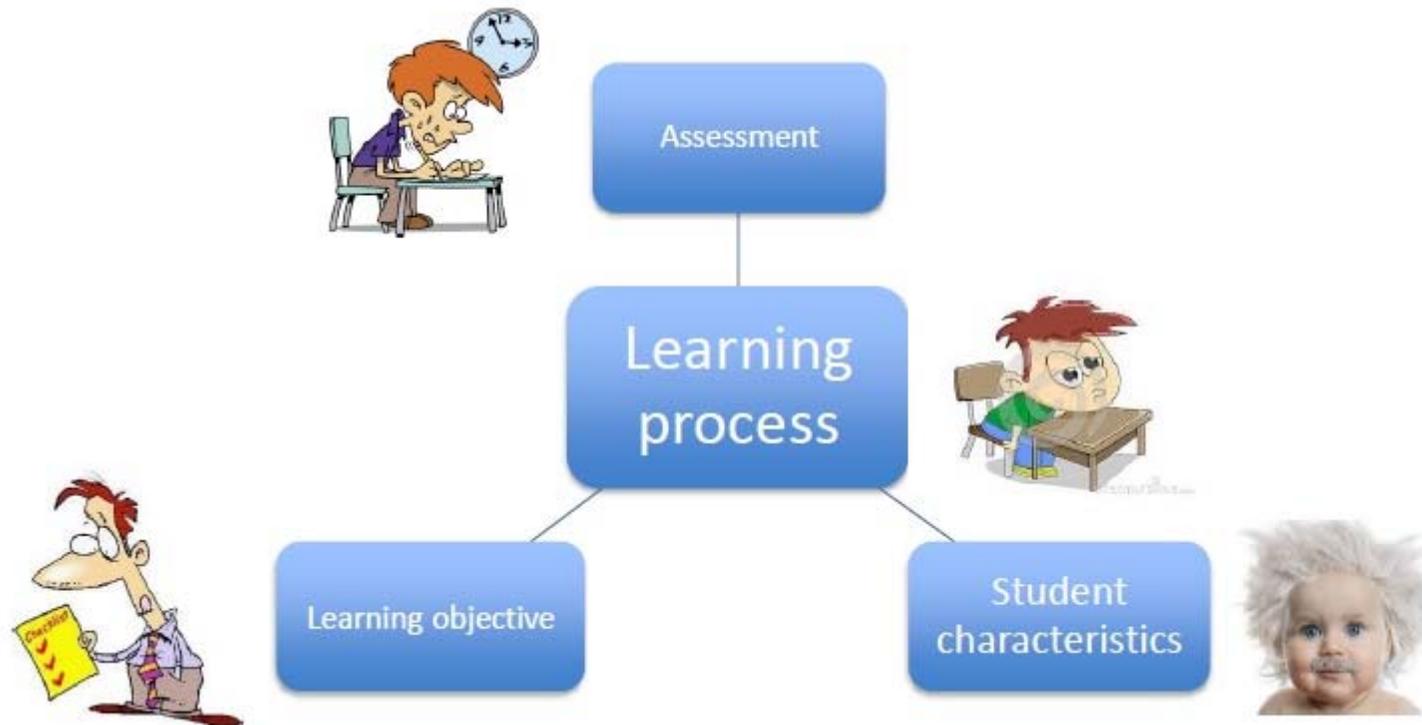
Main goal (as a reminder)

- Teaching and preparing students:
 - ✓ *To think and act as an academic skilled person*
 - ✓ *Preparing students, both for:*
 - *An academic and **research oriented** career and/or...*
 - *An **industry oriented** career*
- Taking in account:
 - ✓ *Transforming from “5 + 1” → “4 + 2” → Content of the e-books*
 - ✓ *Digital learning environment → Moodle as a platform to “facilitate”*
 - ✓ *International oriented → English language*

Main goal *(as a reminder)*

Embedding the learning process in a Learning Environment:

→ Model:



Main goal *(as a reminder)*

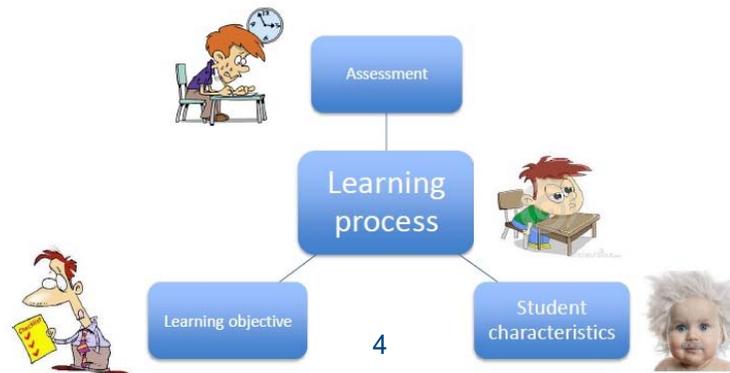
- The **learning objectives** for each course need to be formulated:
 - ✓ knowledge, attitudes, skills, ... to be reached
 - the teacher as well as the student need a clear objective, a clear reference
- The **student characteristics** are important:
 - ✓ prior knowledge, motivation, interests, age, ...
 - 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

Main goal *(as a reminder)*

Digitizing the content of courses ***makes it possible*** to apply a digital learning platform, such as Moodle, and to:

- ✓ 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.



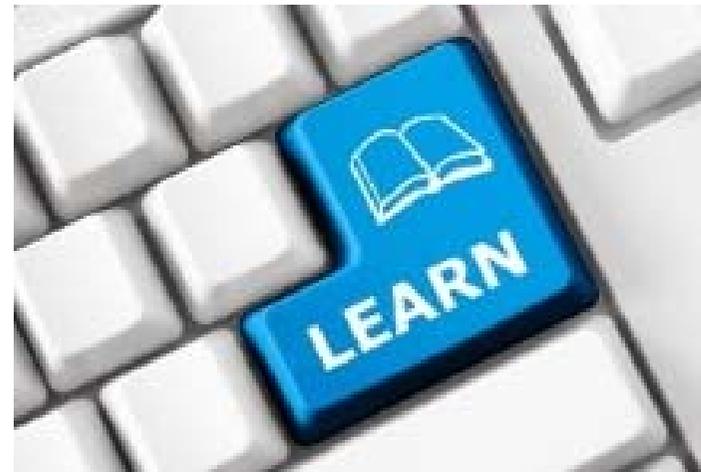
Digital Learning Environment

- A **Digital Learning Environment** allows to:
 - provide students with study material of different types (for example e-books)
 - interact with the students synchronously and asynchronously
 - follow the evolution of the learning process
 - observe the performance of a student in specific tasks



Digital Learning Environment

- 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
 - ...

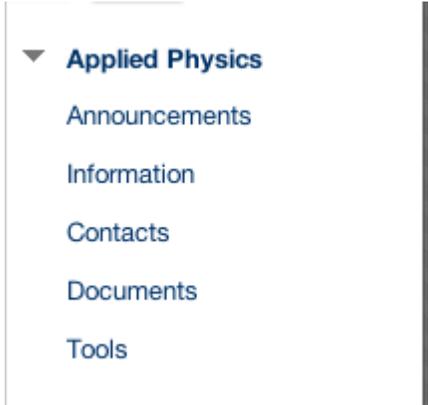


Digital Learning Environment

- A Digital Learning Environment provides *many useful tools*:
 - ✓ Uploading of course materials i.e. course content
 - ✓ Learning paths
 - ✓ Questionnaires + quizzes
 - ✓ (Peer) assessment
 - ✓ Communication, including chat sessions and forums
 - ✓ Wikis and blogs
 - ✓ Tools for tracking students
 - ✓ Feedback to the students
 - ✓ Administration of groups (managing the teaching & tutoring...).

The use of Toledo

- In a **Toledo community**, just a draft of the online course “Applied Physics” has been made.
- Let’s have a look... :
 - See: <https://toledo.kuleuven.be/>
 - Hands-on “presentation” by Joan...



▼ Applied Physics
Announcements
Information
Contacts
Documents
Tools

Preparing the Electronic Books...

In order to apply the digital learning platform:

- The electronic books need to be structured, e.g.:
 - Defining chapters to be studied
 - Preparing Questionnaires & Quizzes (for each chapter/...)
 - Additional learning materials (video's, simulations,...)
- Defining (writing) for each electronic book/chapter/... :
 - The student's prerequisite knowledge & competences
 - The learning outcomes
 - The assessment of the students: when, how,...

→ October 2016 (Ostend) → look at the structure per book ?

→ April 2016 (Ostend) → look at the ICT environment per book ?

→ Remark: English Language course !

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