eLearn Center
Shaping learning. Rethinking teaching

Using learning analytics to support applied research and innovation in higher education

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UOC

- Fully online university, created in 1994
- +50000 students in 21 degrees, +75 masters, 3 PhDs, …
- Adult learners, family and work loads, no time to "waste"
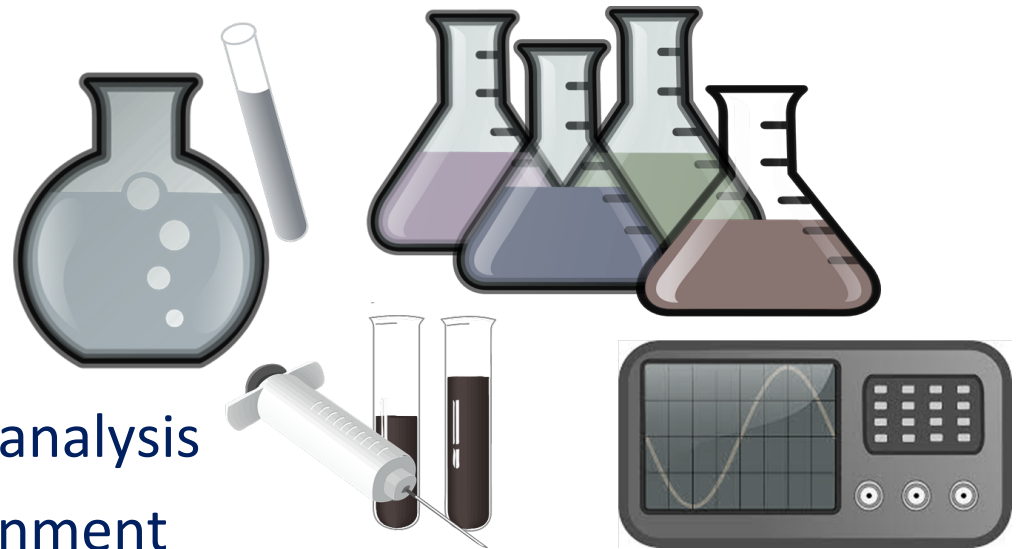- Internet is our **physical** space

eLC

- Think tank for applied research and innovation at UOC
- Supporting:
    - Educational model
    - Learning resources
   - Technology (classroom)
    - Teacher training

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UOC as a laboratory

- Dynamic:
    - Under permanent evolution (proprietary virtual campus)
    - Technology-driven (mobile devices, social networks, …)
    - Standardization
- Multidisciplinary research: A&H, Social, STEM, Health
    - Improve teaching
    - Translational
- Flexible:
    - Plenty of data
    - Different levels of analysis
    - "Sand-box" environment

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Learning Analytics

- Defined by G. Siemens in 2010 as:

  "the use of intelligent data, learner-produced data, and analysis models to discover information and social connections for predicting and advising people's learning"

- Rooted in previous research areas:

  - Educational Data Mining

  - Intelligent Tutoring Systems

- It promotes action research and design-based research:

  - Observe

  - Measure

  - Analyze

  - Intervene
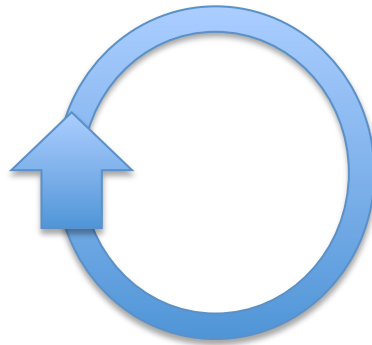
Institutional challenges

- LA can (should!) be used to:
    - Know what works and what does not:
        - Teachers' and managers' perspective
    - Face complex issues:
        - Course design
        - Dropout
    - Provide teachers with better knowledge about learners' needs and behavior
    - Provide learners with personalized support and improved feedback
    - Ask the right questions, obtain the right answers!

The eLC datamart (Learning Record Store)

- Premises:
  - Do not interfere with current processes and information systems
  - Seamlessly integrated when possible (virtual classroom)
  - Become a unique entry point for e-learning researchers, practitioners and managers
  - Take care of related issues:
    - Ethics committe
    - Privacy and security
  - Simple, extendable data model **[U(D), T, S, R, X]**
  - "Cheap and cheerful"

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Benefits

- No need to beg for data among different units and IS

- Data quality (and relevance) is assured

- Three access levels:

  - Raw data from the LRS

  - Indicators

  - Dashboards and reporting

- LA is part of all internal innovation projects and research

- Support for decision making:

  - Identifying new trends: learners' profiles, devices, …

  - From questions to actions through data

- Share standardized data with other HE institutions

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Current and future work

- Fully operational but in continuous development

- Not fully exploited yet:

    - Raise awareness (*what?*):

        - Best practices, publications, projects, …

    - Lack of data analysis culture / interest (*why?*)

    - Training for non-technical users (*how?*)

- Gather more data, develop more indicators and dashboards

- Position UOC as a strong player in LA arena:

    - Transferable model and technology

    - H2020 projects related to e-learning and LA

    - PhD and PostDoc positions in LA available

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Thank you!

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