SMART LEARN

Dr. Santi Caballé
scaballe@uoc.edu

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SMARTLEARN research group is devoted to the intensive use of ICT to improve and enhance any form of e-Learning (e-Training, m-Learning, CSCL, etc) from a multidisciplinary perspective.

→ The ultimate goal is to meet the demanding and changing requirements of the next generation of e-Learning systems and services.

SMARTLEARN purpose is to tackle the full picture of the e-Learning domain by promoting:

- conceptualization of e-Learning systems
- technological and engineering methodologies
- developments to be piloted and integrated in LMSs
- dissemination of knowledge
- exploitation of resulting tools and services
Research group members

**Dr. Santi Caballé (Leader)**
UOC Researcher (since 2003)
Collaborative Learning, Learning Analytics, e-Assessment,
Distributed Computing, Security, Software Engineering,

- **Dr. Jordi Conesa**
  UOC Researcher (2005)
  Ontologies, Learning Analytics, Software Engineering,

- **Dr. Fatos Xhafa**
  Research associate (1998)
  Distributed Computing, Collaborative Learning, Security

- **Dr. David Gañan**
  Technical staff (1999)
  CEO DeltaDev (2010)
  Learning Analytics, Software Engineering

- **Dr. Jorge Miguel**
  Postdoc researcher (2015)
  CIO IT Systems (2005)
  Collaborative Learning, Security

**2 PhD students**
Learning Analytics, collaborative learning, e-assessment
Research line 1/3: ICT education through Assessment, LA and Gamification

- **Goal:** design and **build a set of e-assessment tools and services** to support the learning process in **university ICT degrees** that include very practical competencies, which can only be acquired by means of experience, performing exercises, designs, projects, etc.

- **Keywords:** Formative e-assessment, automatic evaluation, Learning Analytics, Big Data, Gamification, Software Engineering,

- **SMARTLEARN leading researchers:** Dr. Santi Caballé, Dr. Jordi Conesa, Dr. David Gañán.

- **Recent publications:**
  
  
Research line 2/3: Multi-modal emotion-awareness e-learning tools

- **Goal:** Develop tools and services which support the detection and representation of learners’ emotions, as well as emotion-based learning adaptation and affective feedback. The aim is to improve learners’ drop-out rates, satisfaction and learning performance.

- **Keywords:** Emotional awareness, affective feedback, multi-modal sensing and interface detection, Software Engineering.

- **SMARTLEARN leading researchers:** Dr. Santi Caballé, Dr. Jordi Conesa, Dr. David Gañán, Dr. Fatos Xhafa.

- **Recent publications:**
Research line 3/3: Information models for enhancing security in eLearning

- **Goal:** Design innovative **security solutions**, based on methodical approaches, to provide e-Learning designers and managers with guidelines for **incorporating security into on-line learning**. The aim is to **support all security processes** involved in e-Learning design and management, such as security analysis, learning activities design, detection of anomalous actions, etc.

- **Keywords:** Information security, collaborative learning, Trustworthiness, massive data processing, distributed computing, AI

- **SMARTLEARN leading researchers:** Dr. Santi Caballé, Dr. Fatos Xhafa, Dr. Jorge Miguel.

- **Recent publications:**
1. **Funding:** SMARTLEARN is **self-funded** and **economically self-sufficient** in order to have the required resources to conduct high-quality research. Main funding targets:
   - Prepare project proposals for **2016 H2020 calls** ("Technologies for Learning and Skills").
   - Project proposals for **2016 Spanish programs** ("Excelencia")
   - Apply for **UOC grants** to help prepare research project proposals and cover mobility expenses.

2. **Dissemination:** SMARTLEARN aims at **quantity and quality publication production**. Main targets:
   - Paper submission to specialized **conference** tracks and **indexed journals**.
   - Edition of **books** and **special issues** of journals
   - **Create new research journals** specialized in SMARTLEARN topics
   - Organize **workshops and conferences** to widely disseminate the SMARTLEARN topics.
1. **Conference organization:** SMARTLEARN members organize a number of international conferences, workshops and research events:
   - **Guarantee collaboration/networking** with international researchers in SMARTLEARN topics
   - **Meet research groups (partners)** to jointly prepare cooperative project proposals
   - **Identify research centers** in the same field to foster researchers’ mobility in both ways.

2. **Mobility:** SMARTLEARN in/out mobility is essential to **acquire and attract experience** that enrich the group. Main actions:
   - **Long and short stays** in other universities, research centers and companies (SME) will be promoted
   - **Prepare mobility grant** proposals
   - **Attract external pre- and post-doctorate** researchers for short and long stays at EMT within the SMARTLEARN group.
   - **Invite prestigious experts** (visiting professors) to share knowledge and establish firm and stable collaborations.
1. **Event organization** is the driving force to meet companies and professionals to **transfer the knowledge** acquired in SMARTLEARN in terms of eLearning systems and services:

   - Organize the innovative events **Synergys22@** co-organized with SMARTLEARN, 22@Barcelona and KIMbcn.
   - Involve **UOC’s network of associated companies** and the **technological companies** affiliated with the **Barcelona City Council**
   - Create **strong collaboration between public and private bodies** from academia, industry and government (**Triple Helix model**).

2. **Teaching innovation at UOC** to transfer the SMARTLEARN knowledge to improve UOC’s teaching and learning processes. Main UOC actors:

   - **UOC Educational Technology** bridges the SMARTLEARN results and its deployment and maintenance in the UOC Virtual Campus
   - **UOC Teaching collaborators and students** are part of the pilots to experiment with the developed systems and tools.
   - **Corporate training programs** based on UOC model to gain knowledge from SMARTLEARN results.
• **SMARTLEARN group is structured as a matrix:**
  → Researchers from **multidisciplinary disciplines** form part of the group (SMARTLEARN members, eLC research groups)
  → **UOC management staff**, associated companies and professionals of educational technologies, legal aspects and exploitation services

• **All participants are integrated in SMARTLEARN as permanent and active participants**
  → Preparation of research project proposals
  → Group administrative and economic management of the group,
  → Contact with exploitation companies
  → Patent management, etc.

• **SMARTLEARN** covers all the **scientific, methodological** and **technological** perspectives of the **eLearning** research (ie. full picture)
  → from the pedagogical models till the technological implementations, evaluation and exploitation.
  → **SMARTLEARN technological research lines are unique** and provide outstanding opportunities to enhance the eLearning experience at greater levels of satisfaction while improving the learning outcomes.
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