

Learning Design, Adaptation and Operationalisation of Learning Situations

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The team's research is lead according to three primary dimensions:

- Design, Operationalization and Adaptation of Learning Situations
- Modeling the Observation of Usage Tracks and their Analysis
- Advanced and Collaborative Interactions for Learning

The originality of the approach is to consider the engineering process as an uninterrupted design process.

<http://www-lium.univ-lemans.fr/fr/content/ingenierie-eiah>

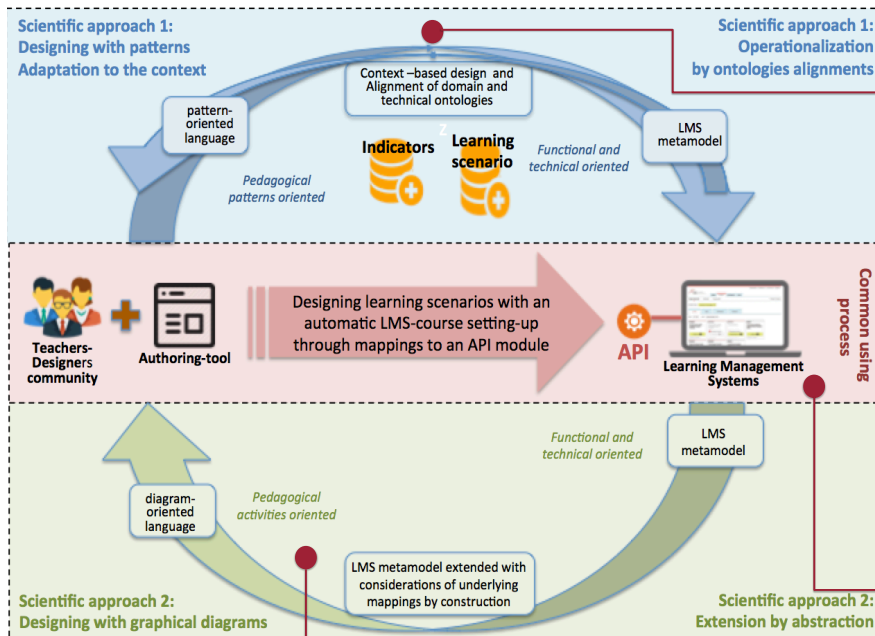
Expertise / Keywords

- Learning Design
- Adaptation and reuse of learning situations
- Operationalization
- Pedagogical patterns
- Model-Driven Engineering
- Domain Specific Modeling

From the scenario to the learning platform

One of the Learning Design challenges consists in adapting a pedagogical intention, from a teacher perspective, to the functionalities and constraints of a targeted TEL environment. We tackle it according to 2 approaches:

- A pattern-designed approach well suited to describe learning design situations by teachers and enabling communities to discuss design issues and solution. Scenarios have to be mapped to LMS functionalities.
- An LMS-centered approach: abstraction and mappings are co-designed. One challenge is about extending the expressivity for teachers while maintaining the operationalization ability.



Learning Design by teachers

- A design approach based on patterns supporting the learning design activities by teachers to help the sharing of learning scenarios [Clayer et al, 14]
- A platform oriented design approach based on patterns and ontology [Tadjine et al, 16a]
→ An ontology for operationalizing pattern-based learning scenarios [Tadjine et al, 16b]
→ A process supporting the deployment of learning scenarios in LMSs [Tadjine et al, 16c]

A LD context based approach

- A context-based approach assisting learning scenarios reuse [Chaabouni et al. 15]
- A contextual-metamodel indexed by the expected and used learning situation
- A context similarity algorithm based on weighted DICE similarity to elicit the scenarios the most adapted to the real situation

Abstraction of LMS ID metamodel

- A method for identifying some pedagogical activities abstracted from LMSs' tools [Loiseau et al., 15]
- A weaving model language and tooling for specifying the mappings from recurrent pedagogical activities to concrete Moodle's tools and parameters [Loiseau et al., 14a]
- A metamodel extension of Moodle's one with pedagogical activities and structures from an activity theory perspective [Loiseau et al., 14b]
- A diagram-oriented ID language and tooling designed with DSM tooling

LMS Instructional Design explicitation

- A method for identifying and formalizing LMSs' implicit ID model as a metamodel [El Mawas et al., 16][Abedmouleh et al., 12]
- A very first LMS graphical language on top of the Moodle's metamodel [Laforcade et al., 12]
- A dedicated I/O API for the Moodle LMS [GraphiT Project]



Online References

Team

Aymen Abedmouleh, Jean-Pierre Clayer, Mariem Chaabouni, Christophe Choquet, Pierre Laforcade, Esteban Loiseau, Nour El-Mawas, Lahcen Oubahssi, Claudine Piau-Toffolon, Zeyneb Tadjine