

Research Context

• **LIUM (Laboratory Informatique of the University of Maine)**

- Research Objective : Help the teacher/trainer and his community to design and operationalize learning situation

• **Research topics**

- Technology Enhanced Learning (TEL) Engineering
- Process, methods and tools for analyzing the learning requirements in a community of practices
- Methods and tools for allowing TEL operationalization and adaptation by users of learning situation
- Pedagogical scenario
- Educational Patterns

• **Context :**

- Association Partage promoting the jobseekers professional integration
- Develop self-assistance and professionally integrate a specific public

• **Observation:**

- Needs of the association pedagogical team to control mediated learning situation.
- Needs to express and formalize the pedagogical scenarios describing their learning situation in order to capitalize and reuse existing practices.
- Limits of existing Education Modeling Languages (EML) to propose specifications usable by teachers and the low level of reuse of existing educational practices. [KOPER & TATTERSALL 05] [VIGNOLLET et al. 06]

• **Methodology**

- An iterative and participatory Design Based Research approach. Trainers took part in the activities of analysis and design many times in a collaborative way with the research team.

• **Patterns-based approach**

- Patterns area semi-structured solution of an expert's method for solving a recurrent problem in a specific context [Mor & Winters 06]
- Proven approach in software engineering and information system domains
- According to Simon design patterns method is a good design science approach. [H. Simon / Mor & Winters 06]
- Great solution to manage the complexity in learning domain [Rohse & Anderson 06] and to express and formalize a pedagogical problem and his solution (the scenario)
- Formalize with a business language (DSM approach)

• **Operationalization of pedagogical scenario**

- Translate teacher's intention and relative pedagogical semantics on a TEL systems
- Based on patterns formalisms
- Based on a 4 steps process

Objectives

- Analysis of a learning situation, expression and formalization of a pedagogical scenario with patterns
- Study of the feasibility to operationalize of the pedagogical scenario

CASE STUDY

• **PARTAGE (registered association created in 1986)**

- objective: In charge of back-to-work programs dealing with professional integration.
- Positioned in the field of the personal services.
- Proposes to jobseekers an accompagnement process based on training programs to facilitate their professional integration.
- Trainers with different backgrounds (education, care assistant, etc.) and high turnover

• **Pedagogical practices analysis :**

1. Participation in various workshops set up to accommodate the jobseeker
 - Clarify the association pedagogical needs
 - Preparation of a questionnaire to highlight the accompagnement process of the jobseeker (performances referred, solutions, resources used, association challenges, etc.)
 - Conduct of a survey on the pedagogical practices on the basis of the questionnaire
2. This analysis has been carried out into three steps

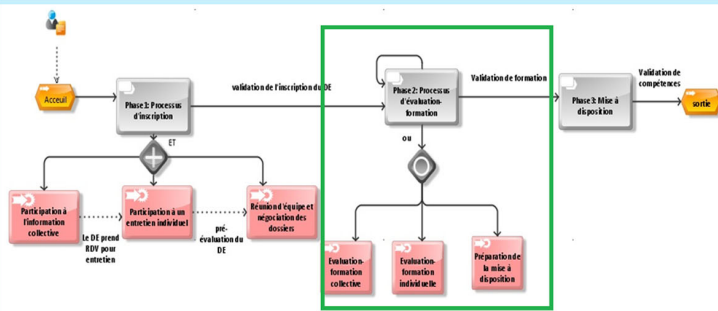
• **Results of analysis of the individual evaluation/training session :**

- 1-Training scenarios are paper-based and limit their evolution and reuse
- 2-An assortment of strategies and tools is required to adapt to an adult varied audience
- 3-The training materials used by learners are not sufficiently expressive
- 4-The jobseeker follow-up is not easy in the long term

• **Requirements to improve and support practices :**

- 1-Capitalize the experience and skills acquired by the jobseekers
- 2-Stabilize the PARTAGE process
- 3-Capitalize trainers know-how
- 4-Improving the knowledge and information supply of the association
- 5-Use of different training supports
- 6-Adapting existing support

Roadmap of Job Seeker



To design a learning scenario, a trainer or a teacher can design a solution :

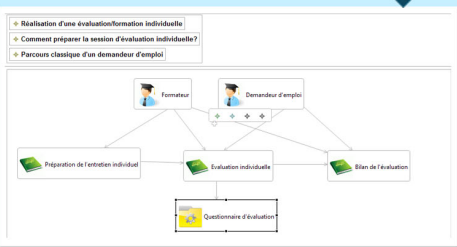
- with the four types of patterns proposed with the metamodel [Clayer, 2012]

- follow an iterative design process framework in 3 steps :

- 1) specification of the pedagogical needs
- 2) creation/choice of pedagogical element (patterns)
- 3) merge or composition of pedagogical element

- supported by an editing tool

Patterns



XML scenario

```

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<scenario xmlns="http://www.lti.upm.es/xml" ?>
  <name>Réalisation de l'évaluation individuelle</name>
  <description>Comment préparer la session d'évaluation individuelle?</description>
  <author>Fatma Kammoun</author>
  <type>Formation</type>
  <category>Formation</category>
  <keywords>Réalisation de l'évaluation individuelle</keywords>
  <resources>
    <resource type="document" href="http://www.lti.upm.es/xml/ressources/formation/evaluation-individuelle.pdf" />
  </resources>
  <activities>
    <activity type="document" href="http://www.lti.upm.es/xml/ressources/formation/evaluation-individuelle.pdf" />
  </activities>
  <assessment>
    <assessment type="document" href="http://www.lti.upm.es/xml/ressources/formation/questionnaire-evaluation.pdf" />
  </assessment>
  <sequence>
    <step type="document" href="http://www.lti.upm.es/xml/ressources/formation/evaluation-individuelle.pdf" />
  </sequence>
  <questionnaire type="document" href="http://www.lti.upm.es/xml/ressources/formation/questionnaire-evaluation.pdf" />
</scenario>
    
```

Ganesha



References

- Mor, Y. and Winters, N., Design approaches in technology enhanced learning, Journal of Interactive Media in Education.2006
- Koper, R. and Tattersall, C., 2005. Learning Design : A Handbook on Modelling and Delivering Networked Education and Training. Springer Verlag, 2005
- Rohse, S. Anderson, T, 2006, Design Patterns for Complex learning, Journal of Learning Design 2006
- Vignollet L., Ferraris C, David J.-P, Lejeune A. 2006. LDL: An Alternative EML. In Advanced Learning Technologies, 2006. Sixth International Conference
- Simon, H. A., 1996, The Sciences of the Artificial, Cambridge, MA: The MIT Press