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# Modeling and supporting goal setting and planning in the regulation of learning activities in a CSCL environment

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## 1. Big Picture

### Motivation

- Support computer-assisted collaborative learning (CSCL) in higher education by supporting the planning phase of self-regulated learning.

### Research Question

- What are the main mechanisms influencing the definition of objectives and the planning of learner activities in CSCL situations?
- How do learners use the tools available to engage in individual and shared regulation in CSCL situations?
- What are the CSCL situation design principles that support goal setting and activity planning?

### Challenges

- Consideration of individual and collective regulation mechanisms
- Design and evaluation of field tools for both measurement and support
- Combining quantitative (data traces, questionnaires) and qualitative methods (observation, interviews) in an efficient way
- Designing, implementing and evaluating tools during the doctorate

### Methods

- Design-based research and ADDIE instructional design model [1]
- Mixed method approach for qualitative research design

### Results

- Identification of factors influencing planning processes in CSCL activities
- Conjecture map describing the relationship between design and research questions
- Mock-ups of the tools to be implemented

## 4. Conjecture map

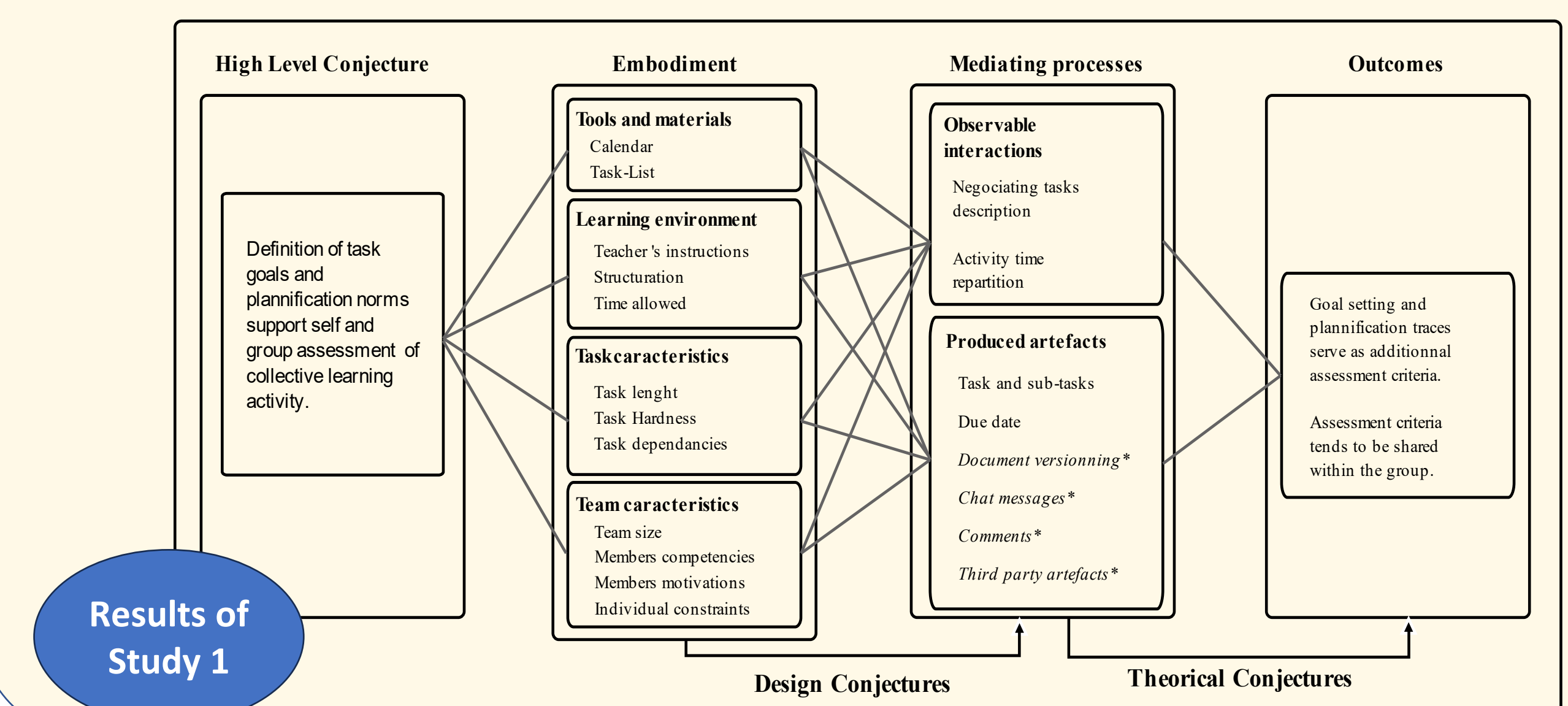
A representation of the design and theoretical conjectures [2] concerning the planning phase of self-regulation.

### Design conjectures :

- "If students engage in a team activity with goal-setting and planning tools, we'll observe a time of debate and organization of the collective activity."
- "If students engage in a team activity with goal-setting and planning tools, they will create intermediate milestones in the calendar and make the planned activity explicit with task lists."

### Theoretical conjectures :

- If students clarify their representations of the task and adapt their work plans, they will share the conditions of the task and use them in the execution and adaptation phase that follows."



## 2. LabNbook : a web-platform for learning Sciences

- In the LabNbook platform, students use 5 types of document to write a collaborative report
- Objective:** Enhance the platform with new tools to foster learners' planning behavior.

## 5. Mock-ups of tools for planning and goal setting

Following analysis of the interviews and literature review, we decided to design two types of tool: a to-do list and a calendar.

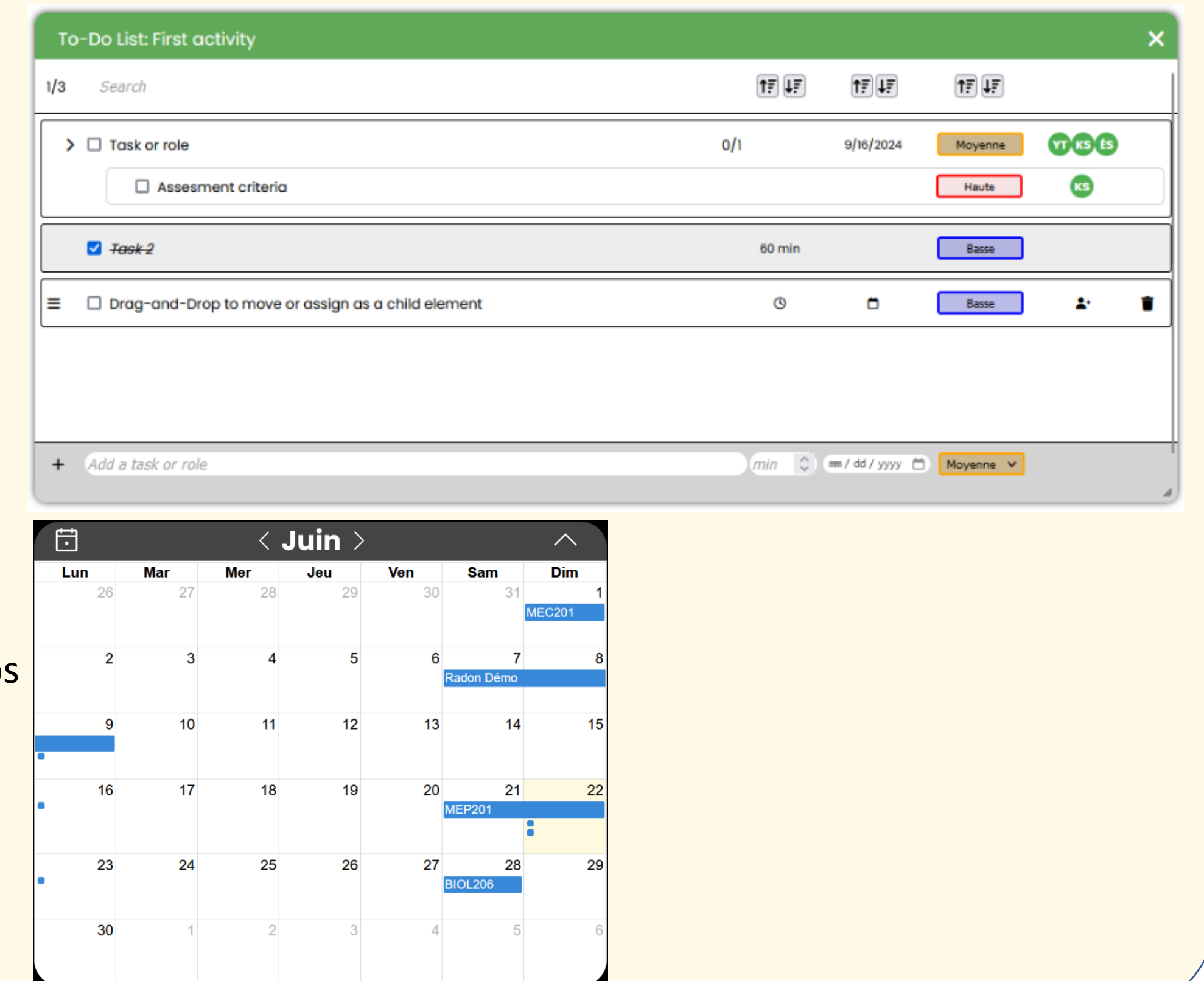
### To-do list :

Enabling translation of task perception..

- Task Duration
- Due date
- Child elements
- Priority
- Assignment

### Calendar :

- Monitoring further steps
- Track multiple learning activity
- Configurable reminder



## 3. Design Process : Achieved and future work

- User-centered design process
- Iterative process based on ADDIE instructional design model [1]

DBR	Design phase 1			Evaluation phase 1		
	ADDIE Stages	Analysis	Design	Development	Implementation	Evaluation
Studies	Study 1 : Interview survey	Study 2 : Utility Assessment	Study 3 : Usability Assessment		Study 4 : Case Study	
Outcomes	Learners' factors of planification model Conjecture Map	Low-Fidelity Prototypes	High -Fidelity Prototypes	Adapted Learning Situation	Design Principles	
Actors involved	Learners	Learners LabNbook designers LabNbook developpers	Learners LabNbook designers LabNbook developpers	Teachers LabNbook developpers	Learners Teachers	
Progress	Done			Planned		

## 6. (Expected) Contribution to the Technology Enhanced Learning (TEL) community

First contribution and results in the ECTEL 2024 Doctoral Consortium paper [3]

- Model of factors influencing activity planning and goal setting in the context of team TEL and experimental science teaching.
- Formulation of CSCL design principles and recommendations to support individual and group activity planning and goal setting.
- Formulation of guidelines for the use of these results and design principles in similar teaching situations.

## 7. Bibliography

- Branch, R.M.: Instructional Design: The ADDIE Approach. Springer Nature, Netherlands (2009).
- Sandoval, W.: Conjecture Mapping: An Approach to Systematic Educational Design Research. Journal of the Learning Sciences. 23, 18–36 (2014). <https://doi.org/10.1080/10508406.2013.778204>.
- Lecuyer—Chardevel, S.: Modeling and supporting goal setting and planning in the regulation of learning activities in a CSCL environment (2024)



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