



Université
de Toulouse



Retour d'expérience d'un projet sur l'émergence d'une co-conceptualisation

Hadj Batatia, Pascal Dayre



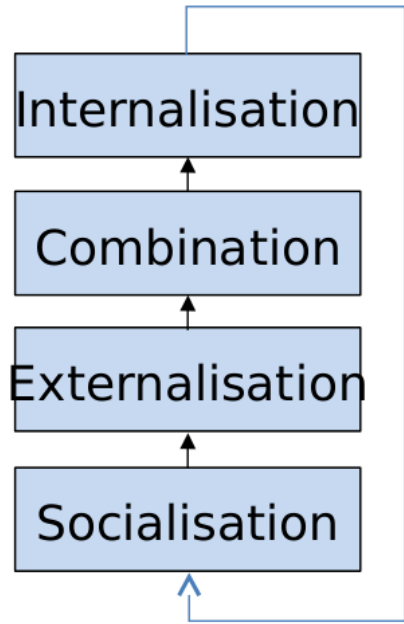
Context

Learning and innovation in knowledge intensive environments : tacit knowledge based framework

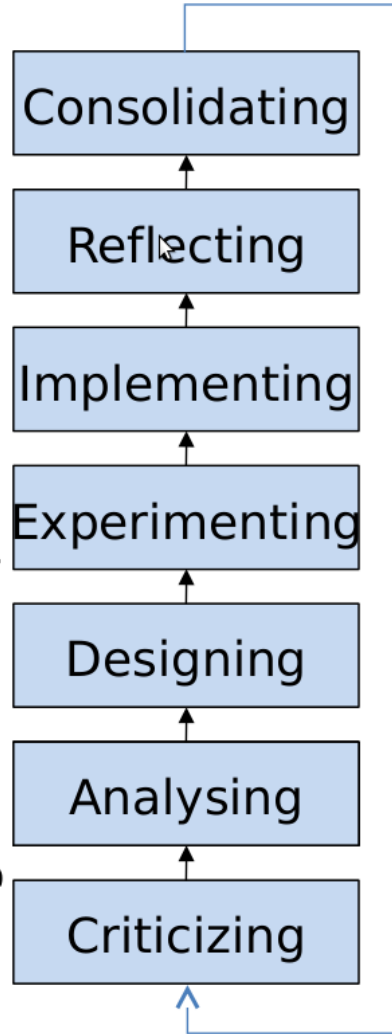
- Domains
 - Innovation in workplaces
 - Learning in higher education
 - **Research processes**
- Collaboration
 - Experts building an artefact
 - Company improving business processes
 - Teams solving problems

Different theoretical approaches

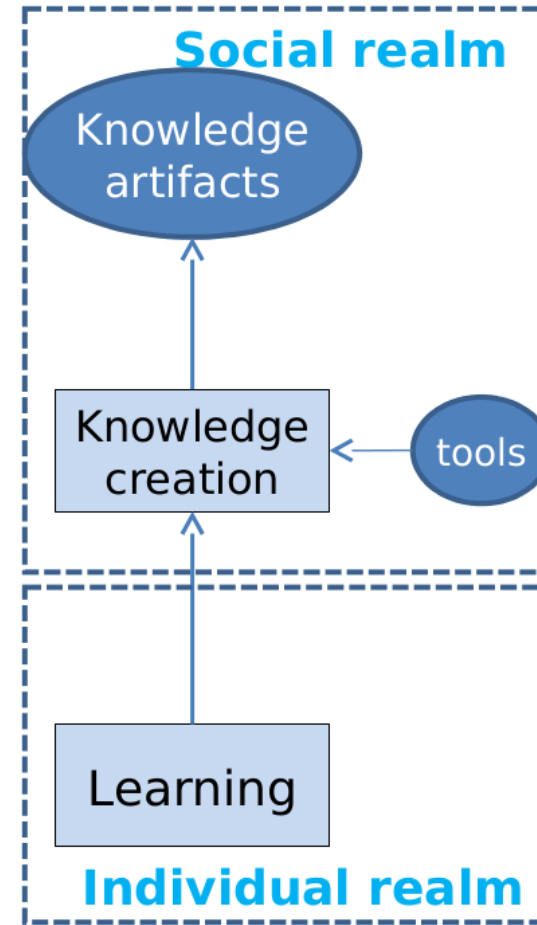
Knowledge creating company (Nonaka, 1995)



Cultural historical activity theory (Engström, 1999)



Knowledge building company (Breiter, 2002)



Principles of the proposed framework

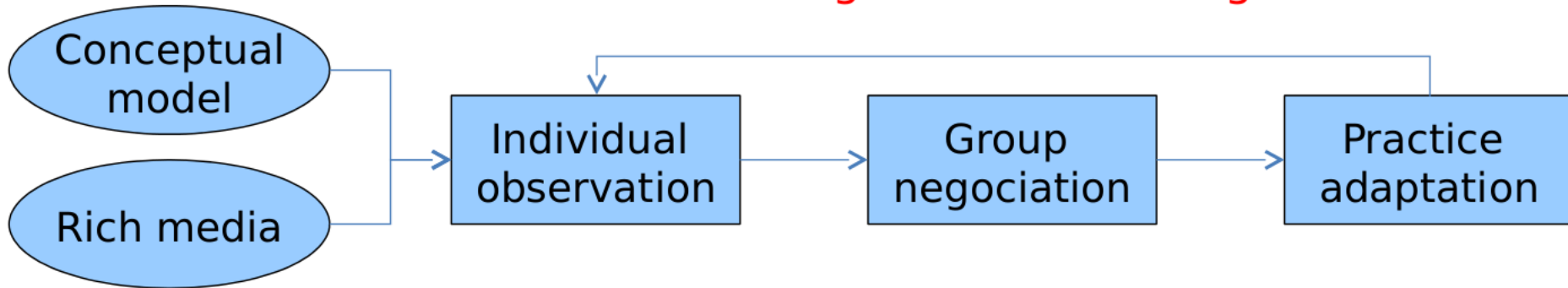
- Tacit knowledge is a key factor to innovation and learning
- Learning goes beyond cognitive and social perspectives
- Collaborative Knowledge creation is the ultimate level of learning
- Collaboration must be mediated technologically

SMAT Principles

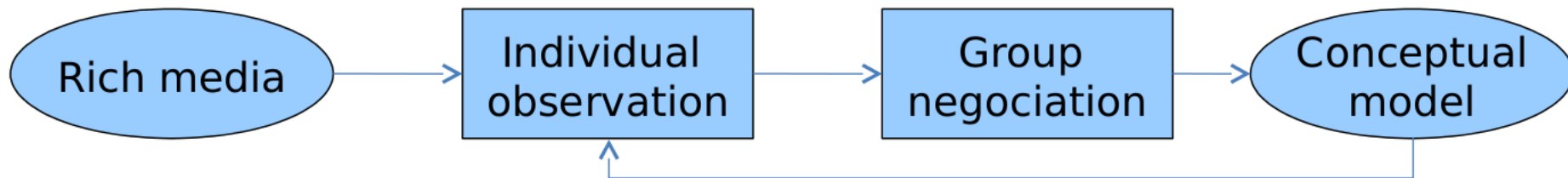
- Rich media as means of representing activity (story telling approach)
- Semantic schemas and ontologies to represent explicit knowledge
- Semantic annotations, links to capture thoughts, ideas
- Scenario based organisation of collaborative activity
- Group negociation of common understanding
- Capture knowledge practices

Supported processes

Internalisation : making formal knowledge tacit



Externalisation: making tacit knowledge explicit



View of the annotation activity

The screenshot displays the SMAT web application interface. At the top, there is a navigation bar with the SMAT logo and buttons for 'Last Annotation', 'Logout', and 'Help'. Below this is the 'Annotation Editor' section, which includes a toolbar with various drawing tools and a dropdown menu for 'None Interpolator'. The main area is divided into two panels: 'Semantic' and 'Video player'.

The 'Semantic' panel contains a grid of annotation categories, each with a green '+' button and a red '-' button. The categories are:

- Team Leader**
 - Takes / Gives cap
- Team Member**
 - Presents oneself
- AssignedRole**
 - Plans shared by thinking aloud
- Plan**
 - Prepares, one step ahead
- Communication**
 - Clear / directed orders
 - Confirms
- Evaluation**
 - Evaluates continuously
 - Reacts and offers advice
- Resources**
 - Calls for help in time
 - Draws attention to needs, supports others

The 'Video player' panel shows a video titled 'childbirth2.flv.[demo2011]'. The video frame displays a timestamp of '2006/04/15 14:03:29' and a red circle highlighting a specific action. Below the video is a progress bar and playback controls.

At the bottom of the interface, there is a table listing annotations:

Type	Value	Author	Date	Start Frag.	End Frag.
formal	GoodLeaderPlans	pascal	06/10 11:54	26.91s.	199.63s.
formal	GoodLeaderResources	pascal	06/10 11:54	209.87s.	211.51s.
formal	GoodLeaderResources	pascal	06/10 11:54	206.76s.	207.91s.
formal	BadMemberCommunica	pascal	06/10 11:54	194.95s.	195.35s.
formal	GoodMemberPlans	pascal	06/10 11:54	189.89s.	190.29s.
formal	BadLeaderPlans	pascal	06/10 11:53	157.68s.	158.08s.
formal	BadLeaderPlans	pascal	06/10 11:52	95.24s.	95.64s.
formal	BadLeaderEvaluates	pascal	06/10 11:52	89.13s.	89.53s.
formal	GoodLeaderEvaluates	pascal	06/10 11:52	86.99s.	87.39s.
formal	BadMemberPlans	pascal	06/10 11:52	82.39s.	82.79s.
informal		pascal	06/10 09:29	29.30s.	29.70s.
informal		pascal	06/10 09:29	0.00s.	0.40s.

At the bottom of the browser window, there is a taskbar with various application icons and a system tray showing the date and time as 'ven. 10 juin, 11:56'.

Critical care team training (a SMAT usage scenario)

Collaboration with
Karolinska institute

Context



Context



Bloc opératoire



Context



Context



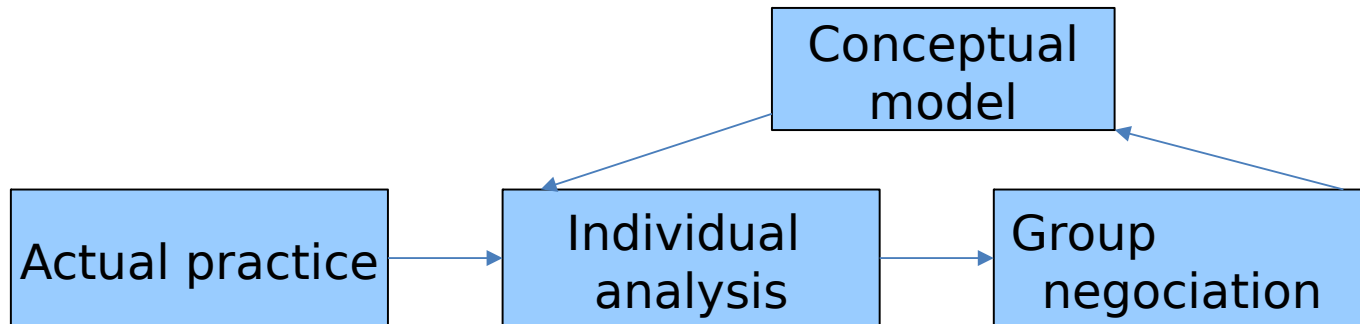
Context



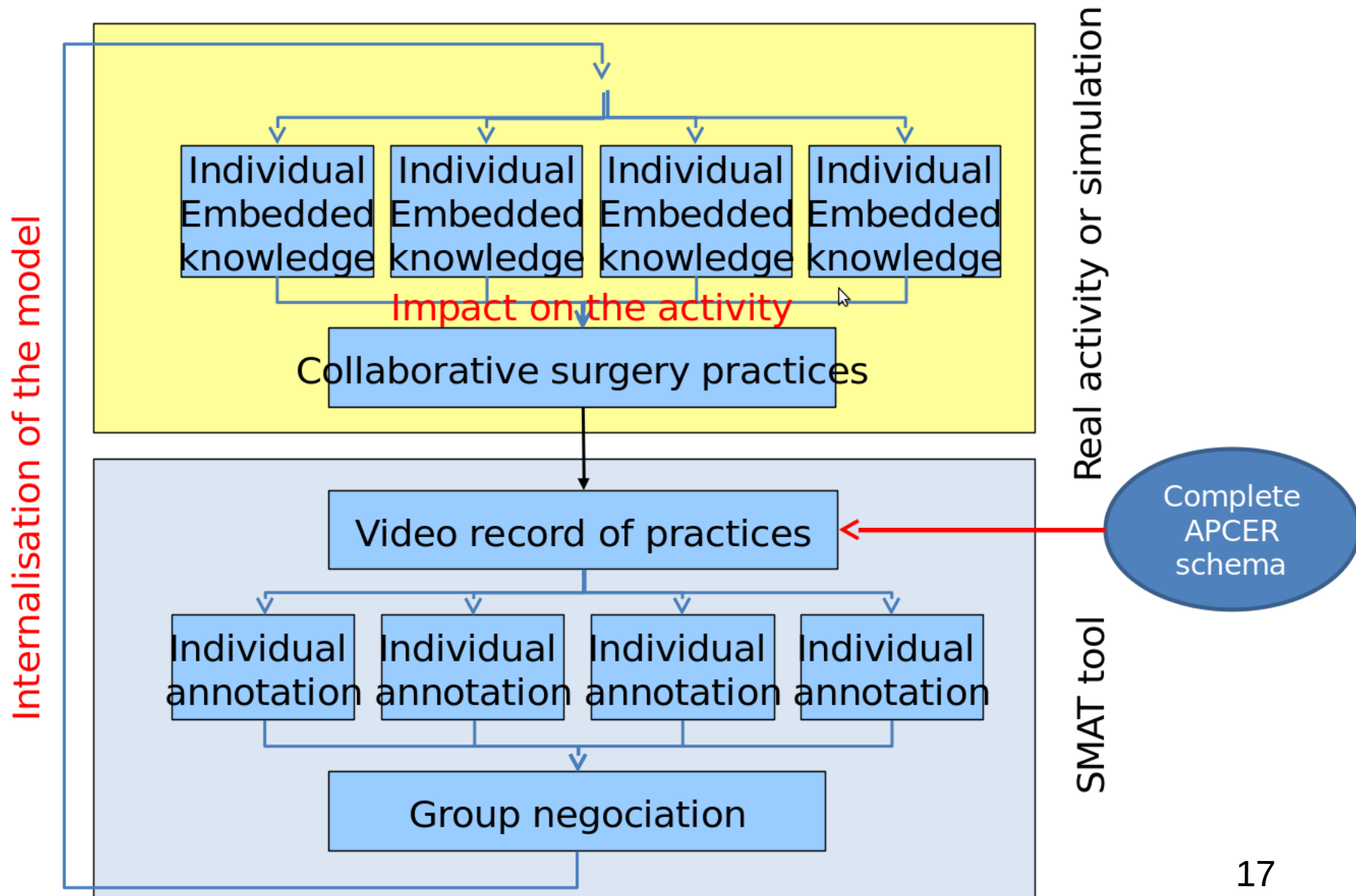
Problem

- The team of trainees does not perform well
- Lack of coordination and understanding of roles and responsibilities
- How to allow changing the practices in order to improve the process?
- How to help the team develop a common understanding of the activity ?

A learning scenario with SMAT



Learning scenario : collaborative knowledge creation



View of the annotation activity

The screenshot displays the SMAT web application interface. The top navigation bar includes the SMAT logo, a user profile icon, and buttons for 'Last Annotation', 'Logout', and 'Help'. The main interface is divided into two primary sections: an 'Annotation Editor' on the left and a 'Video player' on the right.

The 'Annotation Editor' section is titled 'Semantic' and features a 'Formulaire' dropdown menu. It contains several categories of annotations, each with a green '+' button for adding and a red '-' button for removing:

- Team Leader / Team Member:** 'AssignedRole' (Takes / Gives cap, Presents oneself)
- Plan:** 'Plans shared by thinking aloud', 'Prepares, one step ahead'
- Communication:** 'Clear / directed orders', 'Confirms'
- Evaluation:** 'Evaluates continuously', 'Reacts and offers advice'
- Resources:** 'Calls for help in time', 'Draws attention to needs, supports others'

The 'Video player' section displays a video titled 'childbirth2.flv.[demo2011]'. The video frame shows a medical professional in a green uniform and a red cap performing a procedure on a patient lying on a table. A red circle highlights a specific area of the patient's hands. The video player includes a progress bar, playback controls, and a timestamp of 52.22. The video title and timestamp '2006/04/15 14:03:29' are visible in the top left of the video frame.

Below the video player is a table listing the annotations:

Type	Value	Author	Date	Start Frag.	End Frag.
formal	GoodLeaderPlans	pascal	06/10 11:54	26.91s.	199.63s.
formal	GoodLeaderResources	pascal	06/10 11:54	209.87s.	211.51s.
formal	GoodLeaderResources	pascal	06/10 11:54	206.76s.	207.91s.
formal	BadMemberCommunica	pascal	06/10 11:54	194.95s.	195.35s.
formal	GoodMemberPlans	pascal	06/10 11:54	189.89s.	190.29s.
formal	BadLeaderPlans	pascal	06/10 11:53	157.68s.	158.08s.
formal	BadLeaderPlans	pascal	06/10 11:52	95.24s.	95.64s.
formal	BadLeaderEvaluates	pascal	06/10 11:52	89.13s.	89.53s.
formal	GoodLeaderEvaluates	pascal	06/10 11:52	86.99s.	87.39s.
formal	BadMemberPlans	pascal	06/10 11:52	82.39s.	82.79s.
informal		pascal	06/10 09:29	29.30s.	29.70s.
informal		pascal	06/10 09:29	0.00s.	0.40s.

The bottom of the browser window shows a taskbar with a 'SMAT Guide.pdf' file and a 'Show all downloads...' button.

Conclusion/Perspectives

- An original conceptual framework for collaborative learning and knowledge creation
- A multimedia tool based on semantics and social interaction to internalize/externalize knowledge
- Application to training medical staff
- Transposable to other workplace processes