

Toward a Framework for Collaborative Learning Based on Agent-based Technologies

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Background

The A&A Meta-model

An Example

Conclusion

Acknowledgements



Collaboration in Distance Learning I

Theoretical Perspective

- Today's scenarios in *distance learning* are characterised by tools, artefacts and courses that often replicate *uni-lateral knowledge transmission* from teacher to students
- Experimental studies in social psychology for education show that such learning strategies lead to *reasoning bias* and *convergent thinking*
- Other interaction forms like those promoted by the *collaborative learning* have been shown to foster different and more desirable cognitive activities
- These results have led to a growing interest on the collaborative learning and, in particular, on the technology in support of it



Collaboration in Distance Learning II

Technological Aspects

- *Learning* is not an inevitable consequence of allowing students to interact with each other and *social interaction* does not take place automatically
- The most used platforms provide collaboration tools which present two main limits
 - They are not conceived as learning tools
 - They do not share a common conceptual framework
- These limits makes such tools mostly ineffective from the stand point of collaboration learning
 - Learning activity is often carried on by students mostly through individual study
 - Students are encouraged to exploit more traditional or external tools



The A&A Meta-model for Collaborative Activities I

What is it Needed?

- A new infrastructure able to bridge the gap between the interaction forms of the collaborative learning and existing collaboration tools
 - Featuring an integrated set of tools for supporting collaborative learning
 - Embodying both new educational models and existing collaboration tools

Multi-Agent Systems

- Can be conceived as a set of autonomous, pro-active and interacting computational entities called *agents*
- Situated in an *environment* where they interact



The A&A Meta-model for Collaborative Activities II

Agents & Artifacts: the Notions

- item

Why A&A?

- item

Thank you
for
your time!