Participation in VGroups : From Measurement to Scaffolds

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PROBLEM

Activity support for communities of practice engaged in online collaborative problem solving is the design problem. Educational online activities need structure, but in a way coherent with the pedagogical principles (socio-constructivist perspective) that justify them in the first place. One such principle is authentic context-based learning. First, we inquired into how participants came to use, when encouraged to do so, a discussion forum for collaborative problem solving and reflective analysis of classroom situations. A descriptive and a dynamic models capture those interactions.

Second, we studied how to offer participants ways of tracking an online conversation, and ways of visualizing communications (instructor's assessment & self-assessment).

Thirdly, we look for ways for a given group to organize and regulate its online conversations. To this end, we identified scaffolds that structure and guide contributions by providing data on, and specific representations of, ongoing dialogues.

METHODOLOGICAL DESIGN

- **Quantitative/qualitative socialinteraction analysis of the four longest threads of the discussion forum**

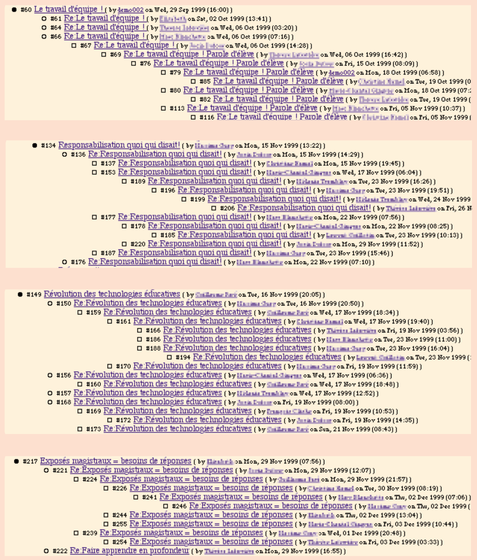
The analysis of the social interaction from a socio-constructivist perspective led to the development of models to capture behaviours such as the following ones : posing questions, asking for help, seeking diverse viewpoints, offering emotional support, building argumentation, and revising one's understanding or interpretation following others' contributions. A four-dimensional descriptive model (socio-affective, cognitive, meta-cognitive et socio-cognitive contributions) was elaborated. A dynamic model of participation was also elaborated. Both display specific patterns that reflect specific successive contributions.

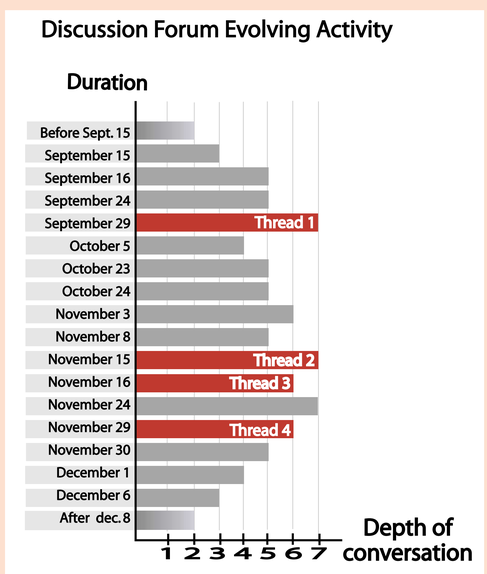
- **Automated quantification**

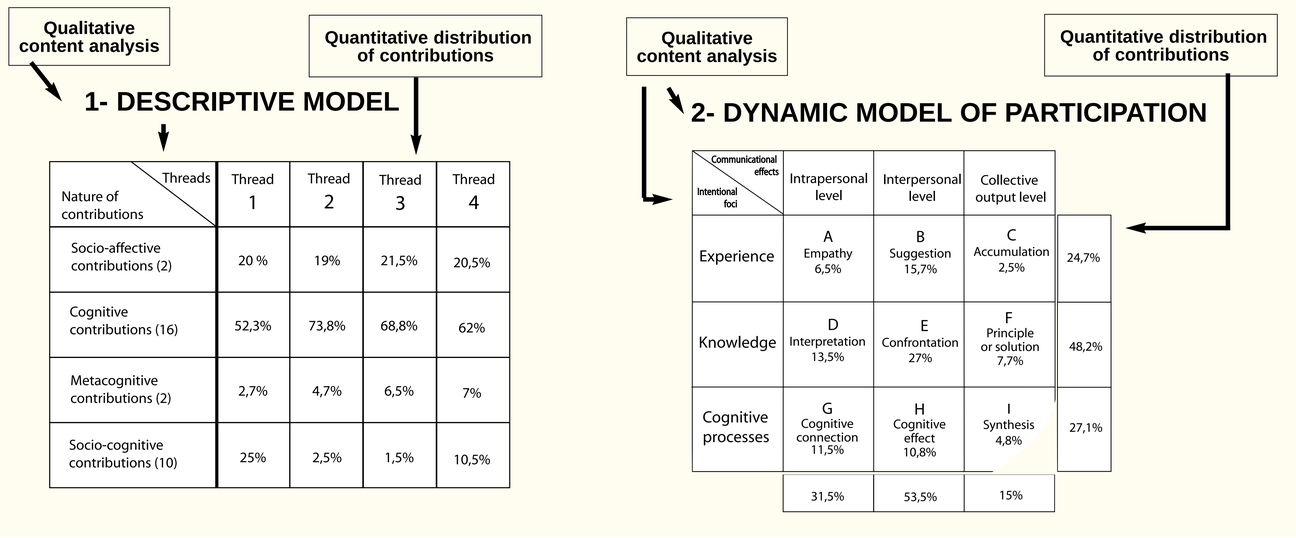
Additional quantitative analyses revealed above-average activity levels in the four longest threads of the discussion forum. The comparisons were based on new measurements of member activities:
- extent of member participation in the discussion;
- frequency of message access by members;
- timeliness of message access by members;
- timeliness of member contribution to the discussion.

By automating these measurements of member activities, applications emerge that facilitate instructor's assessment of the discussion, individual student's self-assessment, and overall group activity building.

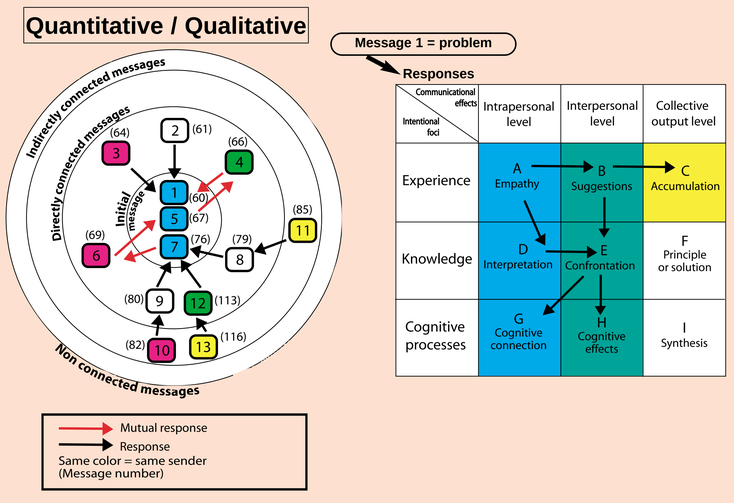
RESULTS

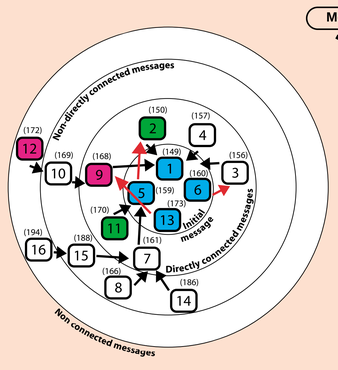


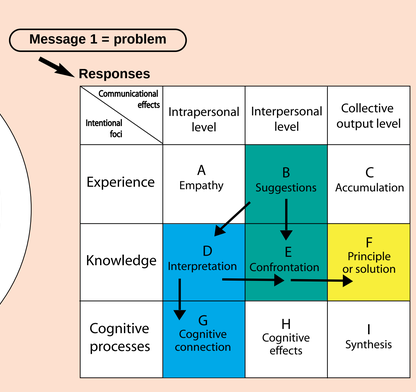




Nature of contributions \ Threads	Thread 1	Thread 2	Thread 3	Thread 4
Socio-affective contributions (2)	20 %	19%	21,5%	20,5%
Cognitive contributions (16)	52,3%	73,8%	68,8%	62%
Metacognitive contributions (2)	2,7%	4,7%	6,5%	7%
Socio-cognitive contributions (10)	25%	2,5%	1,5%	10,5%







Suggested participation scaffolding