

ESF Exploratory Workshop on

**SOCIAL, COGNITIVE AND AFFECTIVE
DIMENSIONS OF COLLABORATIVE
LEARNING INTERACTIONS:
TOWARDS AN INTEGRATED
ANALYSIS**

Paris (France), 25-27 May 2009

Convened by:

Michael Baker, Sanna Järvelä and Jerry Andriessen

SCIENTIFIC REPORT

Executive Summary

Research on collaborative learning grew out of the cognitive revolution of the middle of the twentieth century. The shift of emphasis, from studying learning in individuals, to learning in groups of people, was largely carried out whilst preserving essentially the same theoretical-methodological approach (symbolic information processing psychology and controlled laboratory experiments), the verbal interaction between learners being viewed essentially as a conduit for transfer or sharing of information.

After an initial focus on the conditions that favoured collaborative learning, researchers gradually moved to trying to understand how different types of interactions between students could be more or less productive in this respect. The major emphasis has been on cognitive processes in interactions, such as restructuring knowledge and understanding in learners' explanations of the task and each other.

However, it became increasingly clear that the types of 'social', or interpersonal, relationships between students (such as friendship or animosity) were major determinants of the way that groups functioned and learned. For example, on empirical grounds, a broad consensus emerged on the necessity of creating "friendship groups" of learners, in order for collaborative learning to be effective (otherwise students might spend more effort in getting to know each other, or in dealing with interpersonal conflicts, than on the learning task). However, such groups can precisely also expend more effort on such friendship (having fun together) than on solving the school-based problem. So it remains unclear as to exactly how socio-relational factors, such as friendship and animosity, influence cognitive dimensions of interaction, and thus learning.

Although some researchers have also argued that cognitive and social dimensions of collaborative problem-solving and learning are inseparable (it is not possible to separate a cognitive skill from its expression in a given social situation), we presently lack theoretical approaches and local models that would enable going further in the cognitive/social relation. Such theories should avoid the pitfall of "cognition behind dialogue" (it is not possible to identify independent individual cognitions in dialogue, given mutual influence) and the pitfall of the elimination of the psychological subject (e.g. in situated learning). A genuine theory of the elaboration of cognition in and by social interaction remains to be defined.

Finally, it is also generally recognised that the same cognitive revolution has largely neglected the study of affect or emotion, although it is known to play a major role in learning (as well as in memory, problem-solving, decision-making, ...). Students who have a positive mood have more creative thinking and flexible problem-solving. Although it has always been clear that too much emotion hinders rationality, so does too little. Again, the precise role of affect in group socio-cognition remains to be determined. Affect is inextricably intertwined with cognition, whether in individuals or in groups, in which latter case, its circulation in the mutual influence of social interaction is especially important.

Thus, the aim of this workshop was to explore, in theoretical and empirical terms, the relationships between cognitive, socio-relational and affective dimensions of interactions produced in collaborative learning situations. A major emphasis was put on defining precise methods for analysing interactions between students, along the conjoined three dimensions. For this, a common corpus of interactions (two short CHAT interactions, on the debate concerning Genetically-Modified Organisms) was circulated to participants before the workshop.

Scientific content

Studying the interrelations of cognitive, social and affective dimensions of interactions requires an interdisciplinary approach in social sciences, with contributions from, and collaboration between, researchers in different social science disciplines that study structures and processes of communication and learning in interaction. This workshop therefore brought together specialists in educational sciences (studying the socio-institutional context of learning), linguistics (linguistic

interactionists, conversation analysts, working on the roles of social relations and identities in interaction structures) and (social, cognitive) psychology (working on emotion and interactive knowledge elaboration).

No research fits so neatly into the set of relations between cognitive (C), social (S) and emotional (E) dimensions of interactions; each participant's research covered each dimension with more or less prominence being given to particular relations. Therefore, the workshop was organised around three more complex or subtle themes (corresponding to the three main sessions), with a fourth and last session aiming at integrating the previous ones:

- Session 1: Collaborative knowledge construction, regulation and motivation
- Session 2: Experience, emotion, collaboration and learning
- Session 3: Language, learning and social context
- Session 4: Cognition, emotion and social interaction - integrating perspectives

The majority of presentations were focussed on methods for analysing interactions between students along the three dimensions considered by the workshop, as a means of precisely instantiating theoretical approaches, and comparing approaches in a principled way (sets of theories, models, methods, data). A common reference of most presentations was the attempt to apply the proposed methods to the common workshop corpus of interactions.

Session 1: Collaborative knowledge construction, regulation and motivation

This first session aimed establish a common starting point for the workshop, by discussing the processes by which knowledge construction takes place and how collaboration is regulated within groups. Beginning primarily from the cognitive dimension of interaction, we explored how it was possible to extend analysis approaches to include certain aspects of social relations, motivation and affect. The session was introduced by Maarit Arvaja, Päivi Häkkinen, Anne Meier, Hans Spada, Klas Karlgren, Sanna Järvelä, Hanna Järvenoja, Pierre Dillenbourg and Khaled Bachour.

Maarit Arvaja and Päivi Häkkinen argued for the need to situate students' discourse in its social context, in order to analyse its 'quality'. Their work was based on the analysis of small groups of teacher education students, and revealed that these students drew mostly on their own experience (rather than, for example, on course materials) as contextual resources, within largely suggestive (rather than, for example, "elaborative") discourse. With respect to the workshop common corpus, they highlighted the importance of students' different general "perspectives" with respect to the GMO debate: either subjective (concerning "us") yet critical with respect to science ("nothing can be proven"), or else objective (concerning "others") yet humanitarian and ecological.

The concern with understanding the "quality" of collaboration, in relation to learning, was pursued in Anne Meier and Hans Spada's communication. Studying the quality of collaboration of course requires an operational definition of collaboration itself, which was seen here as exchange of complementary knowledge and joint information processing. These authors proposed a descriptive framework for structuring the assessment and promotion of collaborative learning interactions. The quality of collaborative learning interactions was conceptualised on a set of collaboration dimensions addressing central communicative, cognitive, coordinative, interpersonal, and motivational factors involved in collaborative learning. It appeared that good quality collaboration does not only involve effective knowledge co-construction, but also the management of interpersonal relations and mutual understanding.

The study of collaboration in school learning situations can benefit from studies carried out in other task-oriented situations, such as in the workplace. Along these lines, Klas Karlgren discussed his work on how critical care teams in hospitals function, as well as their self-reflexive actions when they study videos of how they themselves worked. In this case, the cognitive dimension concerns decision-making (what treatment should be applied), the social dimension involves the necessity for all members of the team to be motivated and involved in the decision-making, and the emotional dimension of the activity is very salient here, given the stress involved in the risks involved in performing the right actions to save someone's life. In this case, there did not seem to be a univocal role for emotions in decision-making and shared action: in some cases, (subjects say that) emotions

get in the way of their task; in others, a degree of emotional arousal can be stimulating. The general issue here was that of *regulation* of emotions: in some cases they should be ‘mastered’, in others, not. In some cases, expression of emotions — so-called ‘negative’ such as anger or frustration, or ‘positive’, such as happiness and mutual support — can have positive effects on group cohesion and on the cognitive dimension of decision-making, in others, it can have the opposite effects. The discussion following this presentation enabled us to at least define more clearly the problem to be solved.

The presentation by Sanna Järvelä and Hanna Järvenoja came to a similar conclusion to the preceding one: in some cases emotions should be blocked, and in others not, in order to facilitate joint problem-solving; and the decision as to what would be more advantageous depends on situational characteristics. In other words, it is difficult to propose a generalisable solution to the problem of the relations between emotion and cognition, in social interaction.

Pierre Dillenbourg and Khaled Bachour extended the debate in arguing that much of group regulation functions on a behavioural (gestural, perceptual) level, ‘below’ that of that of meaning (semantics), as communicated in interaction. This has the consequence that recent technologies can automatically detect certain relevant features of collaboration. Thus, factors such as the amount of time that each collaborator speaks can be automatically detected (using a specialised meeting table) and displayed to participants, who thus self-regulate their speaking duration, moving towards more equality of contribution (at least in quantitative terms). In terms of the workshop topic, this research reminded us that the way that students’ cognitive processes are influenced by interpersonal mutual consideration is partly a process of unconscious mutual alignment or adaptation.

The three discussants for this session were Charles Crook, Åsa Mäkitalo and Baruch Schwarz. Charles Crook reminded us that collaboration should not necessarily be seen as ‘a good thing’ in itself, as social psychology research has proven: in fact, he called for a greater intersection between research in social psychology and in collaborative learning. In addition, he pointed out that we should not only focus on what happens in the here-and-now of a particular interaction, but should situate that in a broader social context.

Åsa Mäkitalo echoed this more general concern with defining what collaboration actually is, from both the researchers’ and the participants’ perspectives. A general discussion ensued on the nature of analysis (of interactions), which classically (in Cartesian terms) involves breaking up a phenomenon into its component parts. This then poses the (artefactual) problem of putting together those parts into a coherent whole. With respect to the notion of context, mentioned in several presentations, it should be remembered that the social context of interaction should not be reified into a fixed entity, since it is transformed and co-created during the interaction itself. The intervention of Baruch Schwarz similarly drew attention to importance of considering the dynamics of interactions, and not viewing the dimension studied in the workshop as being in some way fixed.

The (co-)convenors summarised the progress made thus far in the workshop in six main points:

1. We are still far from an overarching theory of collaboration and learning that integrates cognitive, social and emotional dimensions of group activity. It is not sure that such a purportedly unique theory is realistic or desirable, given the complexity of the phenomena. The precise nature of collaboration, in its diverse manifestations, remains elusive. It is clear that collaboration is not necessarily a ‘good thing’.
2. The way that analysis — here, of communicative interactions — itself is conceived, as well as its importance, depends on epistemological points of view (to simplify: holism vs. reductionism). Although all dimensions are salient and agreed to be unified as a phenomenon, researchers disagree as to the usefulness of considering them separately. The question of the analytic point of view remains (that of the research, the first person); we should pay more attention to the students’ own perspectives.
3. The “social” dimension needs to be considered on different ‘levels’: that of interpersonal relations, of the class group, of the school and its institutional rules, of societal groups,

4. The precise way in which cognition, social relations and emotions interrelate depends on the context and situation.
5. Collaborative learning research has emerged as a kind of independent domain of research, and has reached a certain degree of maturity. But now it needs to open up to take other domains into account, such as social psychology and studies of cooperative work.
6. Technology is no longer a 'special' issue to be dealt with in education, since technology is now everywhere.

Session 2: Experience, emotion, collaboration and learning

Whilst the previous session aimed to start from processes of collaboration and knowledge co-construction, and see how social relations and affects could be taken into account, this session was more directly focussed on students' affective experience in collaboration and learning, in relation to technological mediation.

Charles Crook pointed out that a "post-test" mindset sees collaboration and interactions as necessarily having "effects" or "outcomes", and that we should pay more attention to the actual experience (or feeling) of collaboration. The way that children experience collaborating together will be a major factor determining whether they decide to have that experience again and of their motivation to learn. This relates to the question as to precisely when students collaborate. One specific occasion for collaboration is when students are revising for examinations. In studies of students freely deciding to collaborate or not, carried out at the University of Nottingham, there are no measures of "outcomes", but rather studies of students' collaborative experiences. The term "learning" should be deconstructed in this case, becoming akin to "mutual experiencing".

Béatrice Cahour followed the theme of personal experience in presenting her research on subjects' phenomenological experience, in bodily, cognitive and affective terms. Citing Vygotsky, she argued that without consideration of subjects' experiences and emotions, psychology becomes the study of "thoughts that think themselves". Affects are situated between bodily and cognitive experience, they can be reduced to neither individual cognitions nor physiology. She reviewed research on emotions that showed clearly their effects on reasoning, action and decision-making. In collaborative (learning) interactions, the way that affects are mutually regulated or "coped with" collectively and individually is very important.

Baruch Schwarz (in a joint paper with Tsafir Goldberg) discussed studies of students discussing 'hot', emotionally charged, historical topics (such as Sefarade and Azkehenaze students discussing the relatively recent 'melting pot' policy in Israel). Differing points of view on these issues are associated with narratives of social groups and their values: clearly, these will not change easily. In fact, his studies showed that the more students heard arguments against their views, the more those initial views were strengthened. In this case, therefore, emotionally-charged counter-argument was a force for cognitive stability rather than for change.

Patrick Sins pursued the question that had cross-cut all the previous discussions: when is emotional tension productive for groups and when is it not? He again showed that 'prodding' people, stimulating tension between them, can be productive, and that this needed to be considered on micro-, meso- and macro-leves (tension might not be productive in the short term but could be in the longer term).

This session, more specifically focussed on the role of emotional tension between students collaborating, was closed by a paper presented by Jerry Andriessen (co-written with Michael Baker and Mirjam Pardijs) on patterns of tension and relaxation in educational dialogues. Considering — as had many other participants — the paradigmatic case of socio-cognitive conflicts in educational argumentative dialogues, this work showed the variety of ways in which interpersonal, emotional tension can be built up and released in debates, depending on the nature of the collaborative working relation and its development. A more mature (or 'close') working relation appears to be able to bear greater amplitudes of tension/relaxation. Emotional expression, of a greater or lesser intensity, is neither bad nor good for collaboration and learning; what seems crucial is the way it is

situated within the interpersonal relation. In simple terms, students who have an immature or distant collaborative working relation can not take the risk of intense emotional expression, and thus can not benefit from its stimulation.

The discussants to this session were Pierre Dillenbourg, Christian Hudelot and Roger Saljö. The ensuing discussion attempted to situate the problem addressed by the workshop within the broader context of the domain of collaborative learning research. The discussants warned against researchers inventing problems that education never really had, and pointed out that group work in school is only a small and circumscribed activity. We need to be able to give practical and 'normative' advice to teachers as to how to effectively 'engineer' potentially productive socio-cognitive tensions. In methodological terms, it was recognised that it is not possible to analyse 'everything' in collaborative learning interactions, that we need to focus on those aspects that are relevant to learning ... which brought us back to the very objective of the workshop: what theoretical approaches can link emotion, interpersonal relationships and learning, within a dynamic, process-oriented point of view?

Session 3: Language, learning and social context

This last session of papers was focussed on the third 'pole' of the workshop, interpersonal relations and social context of interactive language-use.

Roger Saljö discussed, from a cultural-historical-psychological perspective, the roles of "inscriptions" (written language, images, any semiotic means) as mediators of human learning. He pointed out that sign-systems do not only have the role of external collective memory, or of enabling distal communication, but that they also always have a certain beauty. The role of aesthetic emotions and experience, in motivating people to work and learn, should not be forgotten.

Christian Hudelot dealt with an issue that is often not given enough prominence in collaborative learning research, focussed as it is on interactions between students, i.e. the role of the teacher or more experienced adult in scaffolding interactive learning. Within (post-Brunerian) research on scaffolding language acquisition in young children, Hudelot saw scaffolding as the trace of the processes of co-elaborating a linguistic formulation, profitable to the speaker and of benefit to the ongoing interaction, whether or not this process was the result of a request, a prevention or a repair. He showed that teachers do spontaneously adapt the way that they scaffold to the children and the situation.

Nathalie Müller-Mirza dealt with the "social" dimension of collaborative learning, and proposed that its relations with cognition and emotion need to be considered on different 'levels' of activity and analysis: the intra-personal, the interpersonal (the microanalytic level of interaction analysis), the institutional level and the level of culture (cf. the notion of social harmony and the known cultural situatedness of emotions).

Richard Joiner dealt with one important aspect of 'the social': social identities and gender, in relation to collaborative learning and computer support for it. Whilst it is now viewed as 'common knowledge' that groups of girls and of boys have different dominant speech genres ("affiliative" and "assertive/directive", respectively), and that women are seen as generally more talkative than men, Joiner presented results of a series of experiments that showed that these ideas can certainly not be generalised to all task situations (e.g. in some cases, boys can be more "supportive"). An important result was that across many tasks, the use of computers to carry out learning tasks in single or mixed gender groups actually exacerbates gender differences. Can computer-based learning therefore be designed to take such gender-related effects into account?

Åsa Mäkitalo discussed the notion of "accountability" in conversation analysis. It concerns the social appropriateness of (communicative) actions, and the way that conversational participants locally negotiate such appropriateness with respect to norms of social conduct. This is important with respect to the interactive circulation of emotions, since this too is subject to shared standards of (in)appropriateness.

François-Xavier Bernard closed the session, presenting a paper (co-written with Michael Baker) on the longitudinal process by which collaborative learning technologies, specifically designed for pedagogical debates, are appropriated in the classroom. The authors showed that these processes go beyond the development of cognitive and joint action schemas, to include the shaping of action in terms of the elaboration of institutional rules (e.g. that the final product, an argument diagram, must be evaluable by the teacher). Within the appropriation processes, given that the learning task is essentially inter-discursive, the students need to articulate classroom and everyday discourse genres. These results can be seen as relating to the different ‘levels’ of ‘the social’ (interpersonal, institutional, cultural) evoked by Nathalie Müller-Mirza, as they impinge on the interactive elaboration of meaning and knowledge.

The discussants for this session were Päivi Häkkinen, Klas Karlgren and Hans Spada. Two shared issues emerged from their rich reflexions on the presentations of the session. Firstly, collaborative learning research is characterised by a wide diversity of methods — controlled laboratory experiments, design-based in situ researched, ethnomethodology, interaction analysis, Does this therefore count as a unified “research domain”, in the classical sense of the term, or is it rather an interdisciplinary enterprise, focussed on similar social situations? Secondly, sharing of meanings and knowledge, “mutuality” is not necessarily a goal in itself (cf. shared and fanatical religious and political ideologies); it is only of interest to us if it concerns important knowledge to be acquired.



At the end of this second day, the co-convenors had realised that the in-depth discussion of the specific workshop theme — relations between cognitive, affective and social dimensions of collaborative learning interactions — had inexorably led to a broader and more fundamental discussion concerning the nature of the field of collaborative learning research, within which the theme was situated. Why was it important to understand how students collaborate? How important is this in terms of educational research? What should be the future research directions for collaborative learning research?

All participants were therefore asked to write down, during the evening, a small number of “hot topics” for the future research agenda in collaborative learning research, and to give their written reflexions to the co-convenors at the end of the evening.

Session 4: Cognition, emotion and social interaction - integrating perspectives

This final session of the exploratory workshop occupied all of the Wednesday morning. The co-convenors had collected the contributions concerning the collaborative learning research agenda, and organised them during the evening into five thematic groups:

1. Group “E”: Emotions; emotional states; interpersonal relationship in collaboration
2. Group “I”: the individual and the collective in collaborative Learning
3. Group “C “: CSCL (Computer-Supported Collaborative Learning): the next generation, new views and visions
4. Group “T”: Educational technology, technological support for collaboration
5. Group “M”: methods and analyses

Participants formed small groups (of diverse sizes) around these themes, to reflect on them and produce a powerpoint slide summarising their main conclusions, to be presented to all workshop participants in a plenary discussion.

The main output of this was a common future research agenda for collaborative learning research, integrating the specific exploratory workshop theme and situating it within a broader context. This research agenda is discussed in the next section of this scientific report, as an important contribution to the field.

The closing session concerned practical outcomes — a collective book and future research projects — that are also discussed below.

Contributions to the future of the field, outcomes

Research agenda in relation to collaborative learning

Group “Emotion”.

With respect to the role of emotions in collaborative learning, it was generally agreed that it was necessary to identify, within an appropriate theoretical framework, the specific emotions that were most relevant to influencing collaborative learning, particularly in relation to a model of knowledge elaboration. The most important research problem was perceived to be that of trying to understand the way that emotions emerge and are regulated within interactions between students.

Group “Individual-collective”.

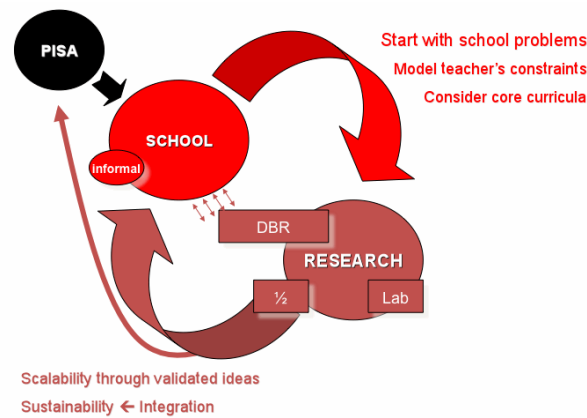
This group of was concerned with reflecting on the empirical question as to how best ‘blend’ individual and group study and learning, as well as the theoretical question of how to reconcile models of learning as a property of the individual and of the group (what should be the unit of analysis?), how to go beyond conflicts between monological and dialogical ways of knowing. In institutional terms, there is resistance to the culture of collaboration, given the prevalent ‘ecology of [individual] assessment’. An interesting research topic would be to study the historical-cultural emergence of such educational cultures, as a means of contextualising the ‘space’ available in education for collaborative learning. A wealth of issues to be explored were discussed, of which the following:

- we need to carry out longitudinal studies of how students learn to collaborate, of how and when they develop a ‘collaborative mindset’;
- we need to work on how people establish or design spaces or platforms for collaborative activities, within new architectures for educational activities;
- how can we represent collective forms of knowledge, as they are embedded in various educational practices? What is the role of material (including technological) design in this process?
- Since collaborative learning takes place over a series of related episodes, we need to study collective remembering and *re*-formulations of past group experiences that maintain thematic continuity over practices.

In sum, the general thrust of the reflexions of this group was that of the need for *in situ* studies of collaborative learning, as it develops over a long period of time in real educational settings.

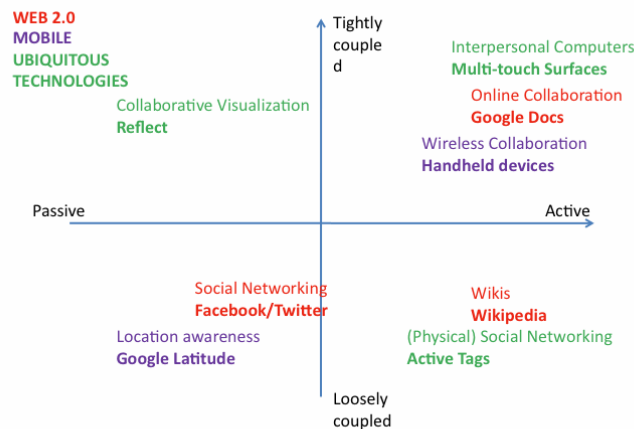
Group “Computer-Supported Collaborative Learning (CSCL)”.

This group of researchers argued that CSCL research should aim to move beyond the kinds of experimental systems, devised in research laboratories, to embrace real educational problems. In other terms, researchers should start with the problems that schools really have, with modelling teachers’ professional constraints, with core curricular issues (CSCL systems usually deal with very small and peripheral aspects of curricula). Research on CSCL should aim for scalability and sustainability through validated ideas. The group’s reflexions and conclusions for the research agenda were summarised in the form of the following diagram:



Group “T”: Educational technology, technological support for collaboration.

This working group called for broadening the scope of technologies and associated practises that are usually considered in relation to collaborative learning. They produced a map of technologies and practises in two dimensions, in terms of the extent to which technologies and users are “active” or “passive” and tightly or loosely coupled:



Group “M”: methods and analyses.

This working group proposed that we should integrate tools for data collection and analysis of collaborative learning, into collaborative technologies themselves. Such tools could also play a second role, that of “intrusive awareness”, to facilitate group metacognition. The idea is not to produce extensive tracing and awareness tools, but rather to produce sets of independent lightweight tools that could inform student users, teachers and researchers alike.

In terms of the exploratory workshop theme, such a common future research agenda implied that we needed to understand how emotions within interpersonal relations relate to cognitive elaboration within a *longitudinal, developmental* approach, put into effect by *in situ* studies that respected educational practices and constraints.

Practical outcomes: book project, projets and programmes

The co-convenors presented a project for a joint book to be published on the workshop theme, within the EARLI book series. This project was generally accepted; it will be co-edited by the convenors, with the goal of publication within one year of the workshop dates. The work of the exploratory workshop has enabled new connexions to emerge that will be the basis for collaboratively written chapters, following a rational order (cf. books that contain collections of individuals' articles).

Sanna Järvelä discussed ESF-funded programmes and projects. With the collaboration of the other two co-convenors, she proposes to request funding for an ESF research network on the theme of analysing collaborative learning interactions.

Jerry Andriessen presented EU seventh framework programmes within which participants in the workshop could pursue its theme. The main targeted theme was "Objective - 2009.4.2 technology enhanced Learning".

Final workshop programme

Monday 25th May 2009

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| Morning | <i>Arrival</i> |
| 12.15-13.45 | <i>Lunch and get-together (visitors' dining room, Telecom ParisTech)</i> |
| 14.00-14.20 | Welcome by Convenor Michael Baker (CNRS-Telecom ParisTech, Paris, France) |
| 14.20-14.40 | Presentation of the European Science Foundation (ESF) Þorlákur Karlsson (Reykjavik University, Iceland. Representative of the ESF Standing Committee for Social Sciences - SCSS) |
| 14.40-18.30 | Afternoon Session: [1] Collaborative knowledge construction, regulation and motivation |
| 14.40-15.10 | Presentation 1 "Contextual nature of collaborative knowledge construction" Maarit Arvaja, Päivi Häkkinen (Finnish Institute for Educational Research, Jyväskylä, Finland) |
| 15.10-15.40 | Presentation 2 "Dimensions of the quality of collaborative learning interactions" Anne Meier, Hans Spada (Institut für Psychologie, Abteilung Allgemeine Psychologie, Freiburg, Germany) |
| 15.40-16.00 | <i>Coffee / tea break</i> |

- 16.00-16.30 **Presentation 3 “Critical Care Teams Analyzing their Collaborative Work Using Video”**
Klas Karlgren (Karolinska Institutet, Stockholm, Sweden)
- 16.30-17.00 **Presentation 4 “Self-regulation and motivation in collaborative learning: a process analysis”**
Sanna Järvelä, Hanna Järvenoja, Tarja-Riitta Hurme (Department of Educational Sciences and Teacher Education, University of Oulu, Finland)
- 17.00-17.30 **Presentation 5 “Group Self-regulation during Collaborative Problem Solving”**
Pierre Dillenbourg, Khaled Bachour (CRAFT-EPFL, Lausanne, Switzerland)
- 17.30-18.30 **Discussion**
 Discussants: **Charles Crook** (School of Education, University of Nottingham, United Kingdom), **Åsa Mäkitalo** (LinCS, Department of Education, Göteborg University, Sweden), **Baruch Schwarz** (Hebrew University, Jerusalem, Israel)
- 20.00 *Dinner*

Tuesday 26th May 2009

- 09.00-09.30 **Review of progress so far**
Michael Baker (CNRS-Telecom ParisTech, Paris, France), **Sanna Järvelä** (University of Oulu, Oulu, Finland), **Jerry Andriessen** (Wise & Munro Learning Research, The Hague, The Netherlands)
- 09.30-13.00 Morning Session: [2] Experience, emotion, collaboration and learning**
- 09.30-10.00 **Presentation 1 “Re-thinking the collaborative experience of learning in a Web2.0 ecology”**
Charles Crook (School of Education, University of Nottingham, United Kingdom)
- 10.00-10.30 **Presentation 2 “Affects and subjective appraisal in collaborative interactions”**
Béatrice Cahour (CNRS-Telecom ParisTech, Paris, France)
- 10.30-11.00 *Coffee / tea break*
- 11.00-11.30 **Presentation 3 “Changes in narrative and argumentative writing by students discussing 'hot' historical issues”**
Baruch Schwarz, Tsafir Goldberg (Hebrew University, Jerusalem, Israel)
- 11.30-12.00 **Presentation 4 “Drawing upon cultural-historical approaches to depict mechanisms of tension resolution in interdisciplinary knowledge work”**
Patrick Sins (Research centre Learning in Interaction, Utrecht University, The Netherlands)
- 12.00-12.30 **Presentation 5 “Tension-relaxation patterns and uptake of information in educational dialogues”**
Jerry Andriessen (Wise & Munro Learning Research, The Hague, The Netherlands), **Michael Baker** (CNRS-Telecom ParisTech, Paris, France), **Mirjam Pardijs** (Utrecht University, Utrecht, The Netherlands)
- 12.30-13.00 **Discussion**
 Discussants: **Pierre Dillenbourg** (CRAFT-EPFL, Lausanne, Switzerland), **Christian Hudelot** (CNRS-Université Paris Ouest La Défense, Paris, France),
Roger Saljö (LinCS, Department of Education, Göteborg University, Sweden)
- 13.00-14.00 *Lunch (visitors' dining room, Telecom ParisTech)*

- 14.00-18.30** **Afternoon Session: [3] Language, learning and social context**
- 14.00-14.30 **Presentation 1 “Learning, inscriptions and knowing”**
Roger Saljö (LinCS, Department of Education, Göteborg University, Sweden)
- 14.30-15.00 **Presentation 2 “On some forms of support for verbal expression during the development of complex language skills in children”**
Christian Hudelot (CNRS-Université Paris Ouest La Défense, Paris, France)
- 15.00-15.30 **Presentation 3 “Identity dimensions in argumentative learning interactions: methodological and theoretical discussion from the analysis of argumentative productions mediated by Digalo”**
Nathalie Müller-Mirza (Institut de Psychologie, Université de Lausanne, Switzerland)
- 15.30-16.00 *Coffee / tea break*
- 16.00-16.30 **Presentation 4 “Gender, social comparison and stereotype threat in collaborative problem solving”**
Richard Joiner (Department of Psychology, University of Bath, United Kingdom)
- 16.30-17.00 **Presentation 5 “Conversation analysis, accountability and situated knowing”**
Åsa Mäkitalo (LinCS, Department of Education, Göteborg University, Sweden)
- 17.00-17.30 **Presentation 6 “Appropriation of collaborative learning technologies as an institutional, social and cognitive process”**
François-Xavier Bernard (Department of Educational Sciences, Université Paris Descartes, Paris, France), **Michael Baker** (CNRS-Telecom ParisTech, Paris, France),
- 17.30-18.30 **Discussion**
Discussants: **Päivi Häkkinen** (Finnish Institute for Educational Research, Jyväskylä, Finland), **Klas Karlgren** (Karolinska Institutet, Stockholm, Sweden), **Hans Spada** (Institut für Psychologie, Abteilung Allgemeine Psychologie, Freiburg, Germany)
- 20.00 *Dinner*

Wednesday 27th May 2009

- 09.00-09.15 **Introduction to the morning session’s work**
Michael Baker (CNRS-Telecom ParisTech, Paris, France), **Sanna Järvelä** (University of Oulu, Oulu, Finland), **Jerry Andriessen** (Wise & Munro Learning Research, The Hague, The Netherlands)
- 09.15-13.00** **Morning Session: [4] Cognition, emotion and social interaction - integrating perspectives**
- 09.15-10.45 **Perspectives on the future of collaborative learning research**
All participants (working in subgroups)
- 10.45-11.15 *Coffee / tea break*
- 11.15-12.00 **Presentations of working groups and discussion**
Representatives of participant subgroups
- 12.00-13.00 **Discussion on follow-up activities/networking/collaboration**
Discussants: **Michael Baker** (CNRS-Telecom ParisTech, Paris, France), **Sanna Järvelä** (University of Oulu, Oulu, Finland), **Jerry Andriessen** (Wise & Munro Learning Research, The Hague, The Netherlands)
- 13.00-14.00 *End of workshop, lunch (visitors’ dining room, Telecom ParisTech), departure*

Statistical information on 23 workshop participants

Institutional participation by country

| | | | | | |
|---------|---|-------------|---|----------------|---|
| Finland | 4 | France | 4 | Germany | 2 |
| Iceland | 1 | Israel | 1 | Netherlands | 3 |
| Sweden | 3 | Switzerland | 3 | United Kingdom | 2 |

Participation by gender

| | | | |
|--------|---|------|----|
| Female | 9 | Male | 14 |
|--------|---|------|----|

Participation by age

| | | | | | | | | | |
|--------|---|--------|---|--------|---|--------|---|------|---|
| 20-29: | 1 | 30-39: | 7 | 40-49: | 8 | 50-59: | 5 | 60+: | 2 |
|--------|---|--------|---|--------|---|--------|---|------|---|

Final alphabetical list of participants

- 1) *Convenor:* Michael BAKER CNRS - Telecom ParisTech, France
- 2) *Co-Convenor:* Sanna JÄRVELÄ University of Oulu, Finland
- 3) *Co-Convenor:* Jerry ANDRIESEN Wise & Munro Learning Research, The Netherlands
- 4) *ESF Representative:* Þorlákur KARLSSON Reykjavik University, Iceland

- 5) Maarit ARVAJA University of Jyväskylä, Finland
- 6) Khaled BACHOUR Swiss Federal Institute of Technology (EPFL), Switzerland
- 7) François-Xavier BERNARD Université Paris Descartes, France
- 8) Béatrice CAHOUR CNRS - Telecom ParisTech, France
- 9) Charles CROOK University of Nottingham, United Kingdom
- 10) Crina DAMSA Utrecht University, The Netherlands
- 11) Pierre DILLENBOURG Swiss Federal Institute of Technology (EPFL), Switzerland
- 12) Päivi HÄKKINEN University of Jyväskylä, Finland
- 13) Christian HUDELOT CNRS - Université Paris 10, France
- 14) Hanna JÄRVENOJA University of Oulu, Finland
- 15) Richard JOINER University of Bath, United Kingdom
- 16) Klas KARLGREN Karolinska Institutet, Sweden
- 17) Åsa MÄKITALO Göteborg University, Sweden
- 18) Anne MEIER Universität Freiburg, Germany
- 19) Nathalie MÜLLER-MIRZA Université de Lausanne, Switzerland
- 20) Roger SÄLJÖ Göteborg University, Sweden
- 21) Baruch SCHWARZ Hebrew University, Israel
(visiting professor, Oslo University, Norway)
- 22) Patrick SINS Utrecht University, The Netherlands
- 23) Hans SPADA Universität Freiburg, Germany