Report on discussion group 1

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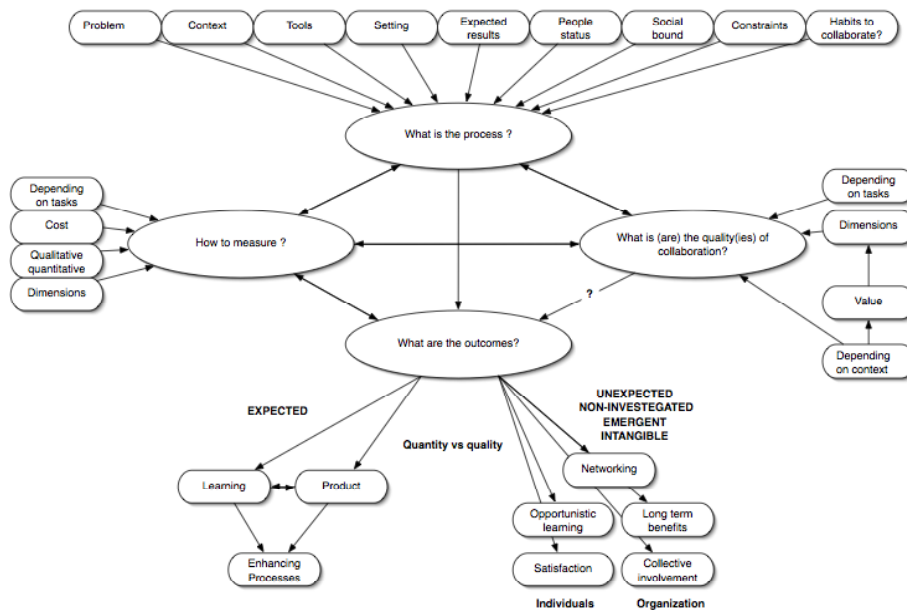
1 Introduction

Exchanges and discussion started by examining the various approaches to assess the "quality of collaboration" among the participants in the subgroup. We quickly agreed on viewing collaboration as a set of (dynamic) processes that emerge between participants when they work together to achieve an objective/a task. By the way, we also pointed that tasks may have a different status in CSL and CSCW. In CSL, task performance *per se* is usually of less importance compared to the (collaborative) processes associated to the acquisition of specific learning objectives by collaborators. Inversely in CSCW, task outcomes are usually of a primary importance while no specific learning outcomes are expected. The discussion also underlined that the quality (of collaboration) could be assessed in a quantitative or qualitative fashion based on the process itself or some of its dimensions, depending on the authors.

These points lead us to distinguish between (at least) 4 classes of issues that would be interesting to address in order to gain a deepened understanding of (the notion of) quality of collaboration. These classes are:

- What is (are) the determinant(s) of collaboration viewed as a process. Discussion elicited several factors (either intrinsic or extrinsic) that could determine the collaborative process related to the task at hand, both at the content and at the dynamics levels.

- What is (meant by) quality (or qualities) of collaboration? Quality of collaboration seems to refer primarily to a normative view of collaboration, where expected norms are confronted to data collected in the assessed situation? For example, Buisine (this workshop) defines the quality of collaboration as the equity of contributions between collaborators. She described "equity" as "the ideal collaborative situation". Other approaches like those of Kahrimanis & al. (this workshop) and Safin & al. (this workshop) have emphasized that collaborative processes have multiple and highly situated dimensions that assessment method should take into account, i.e. enabling to reflect these multiple "qualities".
- What can be expected/analysed in terms of outcomes when a "good" collaboration occurred? Although processes and their outcomes should not be confused, the discussion showed that the relationships between them are complex and probably not univocal. Depending on their relationships and their nature, outcomes can indeed provide or not the basis for assessing in an indirect manner the quality of collaboration.
- How then can we measure quality, process and its outcomes.

Schema 1. Conceptual map of issues discussed in group 1. Directed arrow from A to B denote that Element A (be it a concept, an issue) potentially influence /modify Element B.

In the following part, we refine what were discussed regarding these issues during the work done within the subgroup. In parallel to our discussion, we have attempted to reify it on a conceptual map (schema 1).

2 Quality(ies) of collaboration associated issues

2.1 Collaboration processes are situated

Processes are situated, that is collaboration processes can take a huge variety of ways and forms contingently to the history, actors, expectations and environment in its more extended sense. These forms depend indeed on several factors (intrinsic vs. extrinsic to group and individuals) describing the considered situation that may affect the process of collaborating itself. For example, the task as well as the phase related to the task in progress have an effect on the form and nature of emerging collaboration processes at a specific point in time (see e.g Safin & al. this workshop). Ergonomics studies have been interested for a long time in evaluating how tools and settings are modifying collaboration, in general terms (e.g. effect of distance as synthesized by Olson and Olson, 2000) as well as at the very concrete level of features of a specific computer-mediated system (see e.g. Burkhardt & al. 2008). We made an attempt to list some of these factors in Figure X. A first obvious consequence is that while collaboration processes are probably changing depending on values of the several factors identified in a specific situation, both investigated dimensions of the process and measurements approaches should be tailored to fit the situation as well. Furthermore, different collaboration processes imply to some extend that different measures of quality(ies) should be derived.

Among the set of issues that can be discussed from the "process" view, complex one deals with the overlapping between "production process" and "collaborative process" when a real group of participants collaborate to achieve a goal/task. Has the process of collaborating have to be considered, observed and measured independently of the process of achieving a goal (e.g. designing)? Or is collaboration intrinsically linked to the tasks, making comparisons between domains more difficult?

We finlly identify the necessity of carrying more longitudinal studies, examining the effect of the several factors previously listed, in order to complete the picture of collaboration processes. Indeed, most of studies are currently mostly constructed on the basis of short-scale and/or punctual observations of activities, which undermine both habits and social bounds determinants of collaboration.

2.2 Quality, qualities and collaboration (processes)

Collaboration is often seen from a normative perspective in CSCW as well as in CSCL studies. Specifically in CSL, there are dimensions described as indicators of "good collaboration". These indicators are usually associated to the same valence, i.e. a better score in those dimensions would mean a better quality. As an illustration, it is often stated in learning situations that reaching a consensus

among all participants is a key factors for experiencing a good collaboration and achieving goals.

During the discussion, this normative view have been partially questioned and the following alternate view has been proposed : depending on the situations situation (for example at work), the various dimensions do not necessarily have the same kind of valence: depending on the context, on the participants and on the tasks, some dimensions may be not important, or even negative. For example, it may be more efficient to have decisions taken quickly by the most experienced participant in highly time-constrained situations, like in emergency interventions.

2.3 Measures

There are several ways to measure, to assess and to describe collaboration processes, qualitative or quantitative, mono- or multi-factorial, depending obviously on resources, but also strongly on observed tasks. Indeed, in the workshop, two studies were based on the same paradigm (Spada's model of collaboration) but the method has been adapted to the specific tasks (architectural design and algorithmic) to be efficient. It seems thus that that no method is universal and, therefore, it raises the issue of the comparability of the results, their cost and efficiency, their adequacy to the (evaluation) contexts as well as to the specific form and nature of the assessed collaboration processes, etc.

2.4 Expected vs. less (or even non) considered outcomes

Rather unexpectedly, the main group reflections were about the outcome of the collaborative activities.
A first line of issue dealt with a real difficulty in linking the quality of collaboration and the quality of the outcomes. For example, the issue raised in several examples was "does a "good" collaboration leads automatically to a "good" result? Depending on the situations, the answer was sometime yes as in design situations or sometime no, the latter meaning that both dimensions are mostly independents.

A second line of issue was that the collaboration processes outcomes are much more diversified that what is usually measured. Some of the outcomes are those expected and in some extent measurable: the product, the amount of learning and possibly the gain in process effectiveness. But several other outcomes exist, which are less expected, less measurable, and thus far less investigated by scientists. These emergent outcomes may affect the individuals and/or the organization. The collaboration is strongly related to the satisfaction of the users : we can expect that a good collaboration increases the feeling of democracy in organizations. The individuals may also experience "opportunistic learning", i.e. learning of new knowledge or competencies through the other participants competencies an

expertises. The organizations can gain in collective involvement from their employees throughout an efficient culture of collaboration. Long-term benefits (organizational learning for instance) can also been expected in collaborative organizations. Finally, the networking as an outcome from collaboration is a positive aspects for individuals and organizations.

3 References

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