

When collaboration fails: Drawing upon sociocultural approaches to analyzing a breakdown in student – teacher collaboration

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Abstract

Introducing students to learning contexts that focus on collaborative creation of knowledge creates tensions with the traditional culture of learning that is characterized by acquisition of knowledge through transmission. Consequently, both teachers as well as their students face the challenge to learn to go beyond their individual efforts and to collaborate for the advancement of their knowledge. Several cognitive, sociocultural and developmental educational perspectives on learning view these breakdowns as important motives behind potential change that open up the students' zone of development leading to improved learning and development. However, the current paper questions this premise and argues that breakdowns in collaboration mostly lead to detrimental effects. The argument put forward is that inappropriate ways of dealing with breakdowns will prevent or even obliterate collaborative learning. Overcoming breakdowns requires the construction of relations that would ultimately lead to grounded ways of working. But what happens when students and their teacher fail to bridge this gap? Purpose of this paper is to report on a case study that draws upon the notion of intersubjectivity in interpreting breakdowns in collaboration that occurred between a teacher and his students which eventually resulted in students departing the course. The course involved a 10-week second-year bachelor level educational sciences course at the faculty of Social Sciences at Utrecht University, the Netherlands. The concept of intersubjectivity is employed as tool to explicate the relationship between the situational aspects of the breakdowns that occurred on the one hand and the cultural-institutional and historical contexts in which they occurred on the other. Based on Matusov (2001), the paper presents data from the course to elaborate on three aspects of intersubjectivity which help to explain the failing collaboration: 1) proactive and continuous grounding, 2) sharing contradictions in considerate ways and 3) supporting and recognizing agency.

Keywords: Collaboration, Intersubjectivity, Sociocultural Approaches to Learning, Breakdown

INTRODUCTION

In general, the tendency in a growing body of research in the educational sciences is that it implicitly presupposes collaboration between learners as necessarily beneficial to learning and development (e.g. Springer, Stanne, & Donovan, 1999; Van den Bossche, Gijssels, Segers, & Kirschner, 2006; Van der Linden, Erkens, Schmidt, & Renshaw, 2000). Collaboration is hereby perceived as a situation wherein two or more learners engage in a process of interaction to create and maintain a shared understanding of a particular problem and building common ground (Dillenbourg, 1999; Roschelle, 1992; Roschelle & Teasley, 1995). This conceptualization presumes that during interactions with others, learners externalize their thoughts so that they are accessible to collective reflection and negotiation (Devi, Tiberghien, Baker & Brna, 1996). Accordingly, this eventually leads to an attunement and/ or extension of existing knowledge and understanding working towards increased awareness of shared goals (Chan, Burtis, Scardamalia & Bereiter, 1997; Wegerif, 1996; Wegerif & Mercer, 1997).

The idea of group cognition is proposed as a central issue in understanding effective collaboration between learners. Clark & Bannan (1991) and Hutchins (1995) argued that group cognition provides learners with a basis to coordinate their individual actions as well as to plan future communication and activity of the ongoing collaboration. Moreover, Roschelle (1992) and Webb & Palinscar, (1996) pointed out that the development of group cognition is related to the learning potential of groups. According to this perspective, the development of group cognition is a process of negotiating and interrelating diverse perspectives of partners (i.e. interaction processes). Although literature on group cognition is neither consistent in labelling nor defining the concept (Akkerman et al., 2007), several authors have argued that these processes enable learners to increase their understanding of concepts and ideas (Miyake, 1986), to support them in resolving misconceptions (Clement, Brown & Zeitsman, 1989) and eventually to internalize knowledge practices of expert or professional communities (Bereiter, 2002; Hakkarainen, Palonen, Paavola & Lehtinen, 2004). However, although particular kinds of interactions among learners are expected to occur which are beneficial to learning, there is no guarantee that the expected interactions will actually occur. Moreover, Andriessen, Baker & Van der Puil (in press) inferred that what is perceived as successful collaboration is very particular to each specific situation. For evaluating collaboration in educational practice this means that not only desired outcomes in a specific situation can vary but also the significance of such outcomes in the particular learning context.

Throughout the social sciences it has been argued that diversity in collaboration between people is a resource for generating new meaning (Engeström, Engeström, & Kärkäinen, 1995; Gutiérrez, Baquedano-López & Tejada, 1999; Wenger, 1998). This diversity emerges when common frames of reference (i.e., group cognition) are established based on the conflicting perspectives that have been explicated by partners in the collaboration (Barron, 2000). Bakhtin (1981) introduced the concept of multivoicedness referring to multiple perspectives, interests and traditions which can be a source of trouble and breakdown as voices bring their own diverse histories, rules and conventions into the collaboration (Engeström, 2001). Breakdown in collaboration, thus, results from the confrontation of subjective plans and goals with practical circumstances. Several prominent perspectives on collaborative learning have maintained that breakdown is more than a simple disruption of ongoing collaboration, it is a vital precursor to learn-

ing and development (Barab, Barnett & Squire, 2002; Dewey, 1966; Engeström, 1987; 1999; Schön, 1983). Suchman (2007) and Stahl (1993) contend that creative externalization is required to overcome breakdowns providing the opportunity to repair understandings and resolve these breakdowns by reinterpreting meaning structures to arrive at new understandings.

The purpose of the present paper is to question the presumed beneficial role of breakdowns in collaboration. The paper expands on the concept of intersubjectivity in a sociocultural account of a breakdown observed in the collaboration between a teacher and his students. In concurrence with Matusov (1996) intersubjectivity is described as “a process of coordination of individual participation in joint sociocultural activity rather than as a relationship of correspondence of individuals’ actions to each other” (p. 26). The position taken in this paper is that to develop pedagogical contexts which increase the probability that some types of interactions occur that may contribute to learning, we need to complement the above mentioned presumption by investigating and describing the conditions under which collaboration proves to be detrimental for its partners. Thus, although research on collaboration has traditionally focused on processes in and through which group cognition is developing and how these processes may lead to improved learning, we need also to consider and to specify the potential obstacles that may occur in this process. To take the distributed character of collaborative activities over time, space and meaning into consideration, the study draws upon sociocultural approaches in interpreting a breakdown in collaboration that occurred between a teacher and his students. The concept of intersubjectivity will be employed as tool to explicate the relationship between the situational aspects of the breakdown that occurred on the one hand and the cultural-institutional and historical contexts in which this breakdown occurred on the other.

PRODUCTIVE BREAKDOWNS IN COLLABORATION

When people start to collaborate, a space is generated which inherently requires that collisions between perspectives, interests, practices, norms and traditions occur. Consequently, collaboration involves the interweaving of cognitive-epistemic with socio-relational and affective aspects which may generate conflicts or breakdowns (Sins & Karlgren, 2009). Many scholars in psychology and organizational behaviour have explored the positive functions of breakdowns in collaboration (e.g., Amason, 1996; George & Jones, 2005; Jehn & Bendersky, 2003; Pondy, 1992; Prins, 2005; Tjosvold, 1998; Van de Vliert & De Dreu, 1994). Breakdown has been linked to learning, to higher levels of creativity and innovation, to improved quality of group decision-making and to increased overall performance. Socio-cognitive conflict theory (Doise & Mugny, 1984), cognitive dissonance theory (Festinger, 1957), the theory of cooperation and competition (Deutsch, 1973; Tjosvold, 2007) and cultural-historical activity theory (Engeström, 1987; 1999) propose that some form of breakdown renders elements of current tacit understanding and knowledge problematic. Drawing upon the seminal work of Heidegger (1962), Dewey (1966) and Leont’ev (1981) breakdowns are viewed as a means for revealing the nature of our understanding and are conceptualized as the antecedents of opportunities for creative efforts in collaboration and are as such the driving forces behind learning and development (cf. Koschmann, Kuutti & Hickman, 1998). Perkins (2003) employs the metaphor of “creative destructions” to describe that the displacement of old understanding and knowledge by new ideas and practices is the

natural response to creative conflicts or breakdowns. Although above mentioned authors do not claim that breakdowns are the sole impetus to learning, they are put forward as important constituents.

Breakdowns in collaboration are evidenced through resistance that is experienced by the members of a group. Engeström (1987) conceptualize them as the concrete manifestations of the underlying systemic contradictions caused by divergence or mismatches between voices that are explicated and acknowledged during collaboration. A breakdown occurs when meticulous, ongoing collaboration is interrupted by a collapse of shared intelligibility (Guignon, 1983), for instance when people press for conflicting answers about something that calls for resolution in the context of limited resources and differences in the exercise of power and authority. In addition, individuals may experience difficulties in constructing a connection between the goals or their actions and the object and motive of the collective activity, which may give rise to breakdowns (Barab Makinster & Scheckler, 2004). Consequently, it is expected that this event precipitates a denouement in which the root causes of problems in the current situation are brought to the surface.

The underlying mechanism that explains how breakdowns in collaboration relate to learning and development is based on the premise that awareness of ignorance motivates learning (Nevis, DiBella & Gould, 1995). This means that in order to overcome breakdown, learners have to reflectively analyse their collaborative activities and question and deviate from established norms and practices. This awareness of shortcomings and subsequent search for solutions to overcome resistance may lead to creative externalisation or new ways of doing (Giddens, 1984). These new ways of doing can consequently become materialized as artefacts that serve to mediate the collaboration. For instance, rules and procedures can be formulated that allow coordination and fine-tuning of ongoing or future collaboration. Engeström (1999) maintains that in some cases this escalates into collaborative envisioning and deliberate collective effort toward change. This suggests that breakdowns are not only an opportunity to improve, they are also of crucial importance to coordinate this improvement.

According to this line of reasoning, learning occurs when a breakdowns triggers an aggravating awareness of problematic aspects of the collaboration that enables learners to consequently adapt their practices to arrive at a new shared understanding. Collaborative practices are similar to a physical infrastructures in the sense that when everything is working well one does not pay deliberate attention to their working. Consequently, learners rely on them even when they are not fully aware what constitutes them. Additionally, these practices have been evolved over a long period. Breakdowns in collaboration instigate learners to step outside their taken-for-granted world and espoused theories (Argyris & Schön, 1978) to actively search for or construct new strategies to overcome these disturbances. Thus, the argument put forward is that breakdowns serve an extremely important cognitive function, revealing learners the nature of their practice and equipment, making them present-to-hand to them (Winograd & Flores, 1986). As such, breakdowns help learners to counter the blindness that is inherent to the way things are normally done and they may uncover a space of alternative actions in taken-for-granted activity.

According to Wickman & Östman (2002) this process rests on learners noticing and filling gaps by construing new differences and similarities in relation to what is imme-

diately intelligible to them. To resolve breakdowns, learners need to negotiate and to reflect on current conventions, rules, procedures, norms, perspectives, and goals to arrive at new shared understanding and collaborative practices. Suchman (2007) has even argued that when learners transpose conventions without the occurrence of breakdown this does not lead to development. On the other hand, when there is an implicit consensus about existing conventions, and utilisation according to these conventions does not cause breakdown, then learners may arrive at the stage of collective utilisation without substantial reflection on their activity. If this is the case, learners merely reproduce their regular activity with new mediational means, without any of the intended improvements. The challenge in this argument is not only to identify problems and opportunities for enhancement, but also to create a tension in the implicit conventions of the collaboration in such a way that breakdown and reflection occurs and an opportunity towards learning and development emerges.

Despite the potential of breakdowns to result in learning and development, this does not necessarily occur. In fact, Nelson (2002) argued that the extent to which breakdowns can either enable learning to progress, or they can actually disable it depends on whether they are acknowledged and resolved by learners themselves. This means that tensions or contradictions in collaboration may not be easily identifiable or they may not be easily recognized, visible, obvious or even openly negotiated by those experiencing them (Capper & Williams, 2004). Capper & Williams (2004) conceive of these invisible or tacit tensions which include shared cultural conventions as the most problematic in the path towards learning and development. But this argument does not exclude the possibility that even if tensions are identified, this does not necessarily lead to improvement.

However, we cannot simply assert breakdowns to be essential to learning without questioning its complex and hybrid nature. This means in investigating the impact of breakdowns on learning, it is crucial to incorporate: (a) *a multi-level perspective to the analyses of its effects*, (b) *to differentiate between different kinds of breakdowns* and (c) *to examine the nature of the collaboration, relationships and circumstances in which they occur*. First, positive outcomes at one level (e.g., group cognition) may co-occur with negative outcomes at another level (e.g. individual frustration and satisfaction with the collaboration). In addition, breakdowns can have both immediate as more distal, long-term effects which do not necessarily align (O'Conner, Gruenfeld & McGrath, 1993; Saunders, 1995). Also, breakdowns may have effect that counter, or even reverse the balance from being seemingly positive into utterly negative. Moreover, to weigh between several outcomes to determine whether breakdowns have been positive or negative for learning is exceedingly difficult. Second, Jehn (1994) differentiated between task and relationship conflicts or breakdowns, noting that the former generally interferes with task performance, the latter can be beneficial to performance. Simons & Peterson (2000) corroborated on this argument noting that task conflicts encourages greater shared understanding of the issues being considered whereas relationship breakdowns limits that information processing ability of the groups since learners spend their efforts focusing on each other rather than on the shared task-related problems. However, in a meta-analysis of the literature, De Dreu & Weingart (2003) concluded that task-related conflicts was found to be equally disruptive to effectiveness of the collaboration compared to relationship conflicts. Third, in his theory of cooperation and competition, Deutsch (1973) developed a distinction between two kinds of interdependence in col-

laborative relationships that interacts with how learners manage breakdowns in collaboration: promotive and contrient. Promotive interdependence involves that people perceive their goals and interests as shared. Contrient interdependence refers to situations of inherent opposition of interests and goals. In an analysis of Deutsch's concepts, Tjosvold (1998) argued that the degree to which learners may engage in more or less productive collaboration as a result of the occurrence of a breakdown, is dependent on how they perceive either cooperative or competitive goal interdependence. In spite of these more specific and straightforwardly stated expectations of the effects of breakdowns on learning, an extensive review of De Dreu (2008) convincingly shows that as research progress more and more boundary conditions have been identified, meaning that positive functions of conflict or breakdowns are found only under an exceedingly limited set of circumstances. Thus to determine the impact of breakdowns in collaboration on learning and development we need to consider the complex interplay between aforementioned aspects.

In this paper we report on a case study wherein a breakdown in collaboration between a teacher and his students is explained employing the concept of *intersubjectivity* (Matusov, 2001). The concept of intersubjectivity will be employed as tool to explicate the relationship between the situational aspects of the breakdown that occurred on the one hand and the cultural-institutional and historical contexts in which this breakdown occurred on the other. Based on Matusov (2001), the paper presents data from the course to elaborate on three aspects of intersubjectivity which help to explain the failing collaboration: 1) proactive and continuous grounding, 2) sharing contradictions in considerate ways and 3) supporting and recognizing agency.

PEDAGOGICAL SETTING

The context of this case involves a 10-week second-year bachelor level educational sciences course at the faculty of Social Sciences at Utrecht University, the Netherlands. During this course (Web-Based Learning Environments), students collaboratively generate a report about a small-scale study they have conducted within the domain of collaborative learning supported by computer tools. Previous iterations of this course centred on the acquisition of declarative knowledge by a system of lectures, textbooks, and testing. To challenge students more towards meaningful learning, the teacher redesigned the course according to principles of knowledge creation (Paavola & Hakkarainen, 2005). In this approach to learning, the focus is on the creation of new knowledge through the construction of shared artefacts with this process itself also being an object of reflection. This means that students' learning activities and the object of reflection are equivalent: collaborative learning mediated through collaborative computer-supported tools. This means that students learn about how these tools may support learning by conducting and reporting on a small-scale study which focuses on how students learn using these tools in collaborative settings.

All students activities are collaborative in nature and aim to accommodate students in authentic practices involved in collaborative scientific inquiry. Students are to produce their research report in groups of three or two, using their understanding of scientific literature, their self-guided research interests and their experiences with collaborative computer-supported tools to design and subsequently perform their study. Authentic practices are reflected in the fact that students will go through an iterative cycle of progressive inquiry in which they negotiate and decide on a research plan, read relevant

scientific literature, design and conduct their study, analyze their data, and write their research report in which all elements are integrated. The process of conducting and reporting on a study present student with a rather complex task, therefore students are encouraged to collaborate with educational scientists and other professional experts during their research.

Students are stimulated to engage in discussions, using collaborative computer-supported tools themselves. These discussions are fuelled by their growing knowledge of scientific literature on CSCL, argumentation, and the use of graphical software for the support of collaboration and learning. Any initiative for changing the direction of the research report is welcomed, but requires negotiation to be implemented, with the other students as well as with the tutors of the course. The report is written collaboratively, with shared responsibility of students as well as their teacher.

Introducing students to learning contexts that focus on collaborative creation of knowledge creates tensions with the traditional culture of learning that is characterized by acquisition of knowledge through transmission. Consequently, both teachers as well as their students face the challenge to learn to go beyond their individual efforts and to collaborate within communities for the advancement of their knowledge. Although these tensions can be viewed as important motives behind potential change that could open up the students' zone of development, however, they can also lead to breakdowns in collaboration. Inappropriate ways of dealing with these breakdowns will prevent or even obliterate collaborative learning that should take place between teachers and their students. The student group that is the focus of this case left the course after 6 weeks following an episode in which the teacher expressed his annoyance with the group not turning their paper in time.

METHOD

An ethnographic approach to the analysis of the rich qualitative data was employed involving a continuous dialogue grounded by theory as well as data leading towards an explanation of the impact of the breakdown employing the concept of intersubjectivity. As the collaboration between the teacher and the group of students resulted from the interaction between two activity systems working on boundary artifacts that were shared in the process of constructing them, the nexus of these activity systems was taken as the unit of analyses taking the agency of its individuals into consideration.

To assess the impact of the breakdown in the collaboration, we combined data collected from different instruments, namely: pre-questionnaires that were contextualized to this particular course (categories: understanding and expectations of the course's purpose, prior knowledge of the domain, aspects of collaboration, epistemic agency, working on shared object, and tool usage), video recordings and observations of the interactive lectures provided by the teacher, audio recordings of students' meetings, the produced artefacts that were placed on the Blackboard system, e-mail correspondences, and semi-structured interviews with students and their teacher.

As a first step in our analysis all observational data and recordings of interviews were transcribed and ordered chronologically. Data was closely scrutinized based on ideas taken from grounded theory to interpret all partners' actions, accordingly a process description of the whole investigated period was generated. Secondly, episodes in the data that expressed problems and materialized as developmental tensions were selected and

thematically coded. We employed relevant concepts obtained from literature to describe the sociocultural situated nature of the breakdown in the collaboration observed, employing the premises taken from the concept of intersubjectivity as the general frame of interpretation. In addition, triangulation was applied to gain an elaborate insight into these observations but also to substantiate particular inferences made. As such, a hybrid thick description of the data was obtained that enabled to capture sequences of events and conditions that could explain the ways in which partners managed the breakdown and their effects.

RESULTS

Proactive and continuous grounding

Collaboration between people involves negotiation between multiple perspectives, interests, practices and traditions. This characteristic of group work provides a platform for breakdowns to arise that are related to indistinct roles, diverging agendas, different practices or routines and mismatched time lines. Productive collaboration involves that partners invest effort in developing a common ground (i.e., group cognition) and that they have a shared object of activity. Nevertheless, to serve as springboards for growth, it is necessary that partners recognize the need for explicating underlying issues and maintain in creating a shared focus.

Wertsch (1979) conceptualizes this process as *sharing definitions of the situations* in collaboration which is similar to Engeström's (1990) notion of the *object of activity*. Like Wertsch, Engeström argues that for a successful collaboration partners need to have a shared object of activity which implies the development and advancement of common goals, interests and motives. Rommetveit (1985) expanded the focus on sharedness of partners' subjectivities to include both future expectations and past experiences of the partners in the collaboration (cf. Matusov, 2001). He introduced the term *prolepsis* which refers to a communicative move wherein a speaker presupposes that the hearer has particular relevant understanding available that is shared among them. According to Rommetveit (1985) intersubjectivity is achieved when partners when partners in a collaboration have similar prolepsis. Achieving and maintaining proleptic intersubjectivity is a dynamic, complex and recursive process. This means that partners have to constantly adjust their assumptions and expectations in reaction to each other's contributions and feedback. This means that individual contributions in collaboration have to mutually constitute each other taking into consideration the understanding of others in the ongoing collaboration.

One of the problems that teachers commonly face is how to create a common focus of learning activity or discourse in the classroom. This is especially important in a case when the teacher tries to organize a discussion among the students. The lack of proleptic intersubjectivity related to the aims of the investigated course is exemplified in the excerpts below.

- Teacher* *I did not have a clue what the progress was of this group, they had a very general research question. I had told them this two times already, that I did not agree with their rather simplistic comparison between synchronous and asynchronous communication, but they appeared to persevere, I did not have any idea what they were doing [...] In supervising the students it is important that they indicate what they understand and do not understand and what they think of something. Otherwise I can do nothing.*
(post-interview)
- Student1* *And then suddenly the teacher did not agree with the difference between synchronous and asynchronous, he told us to investigate something else or in a different way much more elaborate. So we thought, what should we do then? Because we knew, but we should have asked this, whether we should had written a revised version or that we should had started with out idea, this was not clear so we did nothing.*
- Student2* *It was vague what the teacher expected of us, the steps we have to go through when doing research were unclear and we received no guidelines.*
(post-interview)

These excerpts show that both students and their teacher raised concerns with respect to the status of students' research question. This issue represented the lack of grounding or proleptic intersubjectivity which becomes manifest in the teacher's last remark. Here activities, motives, goals and interests of both the teacher as well as his students are not shared which impeded collaboration between them.

Another problem related to the need for proactive and continuous grounding is the existence of invisible contradictions or false consensus (see Murphy & Rodriguez-Manzanares, 2008). Invisible or unrecognized contradictions can be potentially extremely detrimental to the process of grounding. An invisible contradiction is taken for granted, members of a group may even not recognize it as a problem and includes assumptions about how things are done and how relationships are managed. Resolving breakdowns consequently has numerous pitfalls since underlying contradictions may remain unnoticed or may yield false consensus. Moreover, Linehan & McCarthy (2001) have argued that social practices of many classrooms enable learners to avoid providing evidence of not knowing.

An example is provided in the excerpts below which were respectively taken from a meeting between the teacher and his students two weeks before they left the course and from the post-interview with the students:

- Teacher* *Do you know what to do now?*
Student1 & 2 *We need to do a lot! <laughter>*
- Teacher* *Yes, when you have questions please ask immediately! [...]*
Teacher *We expect a complete research proposal from you, you get graded for that. Expectations, framework has to make sense. If you have questions for literature, let me know*
<silence> [...]
- Teacher* *Do you foresee any problems?*
Student1 *No*
(transcription meeting; 3rd week)
- Student2* *We should have mailed Jerry much sooner, asking him what we had to do for our research proposal, what are your comments and what are our next steps, we did not do this, why we do not know*

- Student1* *At the end of the week we thought that we have to hurry up so that we at least have something to investigate that we can show him or otherwise quit the course. This is what we eventually did.[...]*
- Student1* *Mostly we do things on our own. We mailed sometimes but we only received an answer very late, so we could not use the answer, so we had to do it on our own. That is more or less the cause of our leave.*
(post-interview)

These excerpts exemplify the devastating effect of students not sharing their concerns to the teacher. As they indicate in the latter part of the excerpt, their behaviour was dictated by their conventions regarding collaboration with the teacher and previous unsuccessful experiences regarding mail correspondence with the teacher. The interplay between these aspects may thus be an account for the false consensus observed in the meeting between students and their teacher.

Sharing contradictions in considerate ways

Collaboration between people requires the creation of a space wherein partners can disagree in respectful ways, support each other when breakdowns occur and suggest alternatives. Breakdowns among partners have the potential to coordinate joint activities, but it is essential that partners share their concerns and value each other's emerging concerns as valid. This involves that the students and their teacher need to considerably acknowledge discrepancies by considering each other's conventions, cultures, beliefs, procedures, interests and goals.

In the investigated course the teacher decided to redesign it based on principles of knowledge creation. According to this knowledge creation, which stems from a socio-cultural approach to learning and development, the students and the teacher have collaboratively shared responsibility and ownership for guidance and learning where the students are responsible for learning how to manage their learning and the teacher has responsibility for guiding the students in this process (Paavola & Hakkarainen, 2005). This effort obviously creates a tension since both students and teacher need to cope with the consequent epistemological shift from knowledge acquisition and transmission of knowledge to the self-directed creation of knowledge. This means that contrary to a traditional learning setting in which a teacher dominates and structures the practice of learning and where all participants know what is expected of them, students are now placed in an interactive culture of collaborative learning. Thus by introducing collaborative learning tasks that focus on knowledge creation and transformation in the regular classroom environment a discrepancy between two cultures is created that provide grounds for breakdowns to occur. As argued by Rogoff, Matusov & White (1996) people who are raised in traditional institutions with a one-sided educational philosophy, it is often difficult to learn a community of learners approach to teaching and learning. Students' focus in a traditional undergraduate classroom is often on how survive the classes, to get good grades, to successfully guess what the instructor wants from them, to learn disciplinary techniques for their future classrooms, and to deliver all this to the teacher's satisfaction (Matusov & Rogoff, 2002). They argue that the deconstruction of a traditional educational system alone often can lead to students' frustration with and withdrawal from the learning process. Without expectation (or threats) of tests, exams, and grades many students may stop reading assigned literature, doing assigned projects, and coming to class to save their time and energy for other classes and responsibilities, and/or just leisure. Edwards (2007) described this as the contradiction between "the

strong vertical accountability within educational system of university and the horizontal connections between different disciplines and professionals that is proposed by the teacher in this community of practice” (p. 9).

Still, what is important is that this tacit discrepancy has to be explicated and acknowledged in a considerate way between collaboration partners in order to cope with breakdowns whether or not this would lead to productive outcomes. This means that it is important to consider that the personal understandings and conventions gained in other situations mediate interpretations of new situations (Billett, 2006). The teacher in the investigated course was found to be not taking these differences into account as exemplified in the following excerpts

Teacher *I want you to investigate whatever you want to, you have to do research and write a research article. It's up to you*

Student2 *When do we need to finish the research proposal?*

Teacher *Let's say at the end of the 3rd week*

Student1 *What literature do we need to read then?*

Teacher *Depends on your research question of course
(transcription meeting 1st week)*

Teacher *In my teaching I try to give comments and want to stimulate my students to think and to make statements themselves, to know what their insights are at that moment and maybe to add something to that. This hopefully leads to discussions that lead to knowledge in the field which result in interesting and realistic research questions which can provide nice answers
(pre-interview)*

Teacher *I get the feeling that I provided them with too much freedom which led to chaos in this group [...] Most students cannot cope with this and that's a shame and a missed opportunity [...] The educational system students are used to is not designed for students that want to learn more [...] although I did not do much to support them in this different approach
(post-interview)*

Student1 *I would had like to have more lectures, something else than what we did now*

Student2 *We should have been provided with a basis, literature or whatever so that we could do our assignment [...]*

Student2 *I had the idea that we were left too free to decide what we wanted to do, but as long as it was something the teacher had in mind. First he said that we could investigate whatever we would like to, but when we came with our shared plan, he did not agree and we should have not done this in this way
(post-interview)*

The contradiction between the two educational cultures is nicely depicted in both post-interviews and the transcription of the meeting between the teacher and his students. However, this had never been considerably explicated during the lectures. Whereas students indicated that they wanted to have more support and guidelines from the teacher, the teacher indicated he wanted to stimulate students to become active agents over their own learning process. Although he acknowledged the different and conflicting educational background and institutionally-motivated conventions of his students, he admitted not to have supported them explicitly in introducing his students to the knowledge creation approach.

Interestingly, the teacher's epistemology of teaching was shown to comply with the naturalistic position of Dewey (1966) towards the role of breakdowns on reflection and learning. Growth, according to Dewey, is most often achieved by inquiry resulting from a breakdown: "inquiry, institutes new environing conditions that occasion new problems. What the organism learns during this process of inquiry, produces new powers that make new demands upon the environment" (Dewey, 1966, p. 117). According to this view, the teachers need to question and criticize the work of the students in ways that create appropriate breakdowns of the learner's situation and lead the learner to initiate a sequence of inquiry. This view is exemplified in the following excerpt which was taken from the pre-interview with the teacher:

Teacher *Learning is about to do things that you could not perform at first but than you do. Everything that you already could do and do again now is useless, so they have to encounter problems or breakdowns otherwise it makes no sense. [...] I want to create chaos by giving as less answers as possible and to provoke, trying to have students think for themselves, for instance that to continuously question their answers. But I have to do this with care so that everyone can handle this, not all students appreciate this approach.*
(pre-interview)

The teacher assumes that the occurrence and resolving of breakdowns is essential to the process of learning. However, this view was not shared with his students, as shown in the answers of his students to the evaluation of the course:

Student1 *The course was chaotically organized and the teacher continued to question our research questions, which was not productive*
(Answer to evaluation course form)

According to Perkins (2003) thoughtful trust between people can convert breakdowns from regressive to progressive. Not only does trusting a common vision encourage resolutions of breakdowns but effective resolution also builds trust in the common vision. When there is trust in a common vision, many breakdowns are not fundamentally adversarial. Trust is inspiring and may enhance commitment; partners' belief in the positive attributes of others often strengthens those very attributes. Although trust is one of the building blocks of cohesiveness of collaboration it is a fragile one since of its categorical nature. This means that it is not sufficiently nuanced and sensitive to circumstances, so a considerate and open appraisal of the extent to which partners in collaboration can be trusted is needed to ensure the collaborative relationship (cf. Andriessen et al., in press). In the following excerpt, which was taken from the meeting between the teacher and his students just before they decided to quit the course, the teacher explicates his discontent with his students' progress which was due to a lack of trust in their commitment:

Teacher *{screaming} I did not receive your research proposal, now I do not know what you want or what you are doing maybe we should leave it this way!*
(transcription meeting 6th week)

According to Perkins (2003) when an individual's judgements of commitment are mistaken, than he or she feels betrayed. The teacher in the above excerpt shares this feeling with his students but without leaving the floor open for framing his discontent collectively. Prins (2005) describes that between frame breakdowns are often fundamentally

about identity an attempt to answer the questions of who we are and how we do things collaboratively. The above dispute was not about instrumental results but rather the problematic social relation among the teacher and his students, about what partners should do and how to communicate. However, students not their teacher made an effort at framing and resolving the above conflict which ultimately resulted in students' renouncing the course.

In the post-interview, students did frame the underlying contradictions of their conflict with their teacher:

Interviewer How did you experience the conflict with the teacher?
Student2 Strange, somewhere I understand it, 'why have you done nothing, why did you not come to me earlier'. The teacher also stated that he did not know what to do. But I did not understand why he screamed. Maybe he sees that differently, because he spend time on us and did not receive anything back from us
(post-interview)

The fact that students and teacher did not explicate their conflicting expectations, interests, goals, and conventions during meetings can thus be partially related to experienced shortage of reflective and shared trust. This finding complies with Katriel (1986), who suggests that if a group does not have language (i.e., genre) for respectfully dealing with disagreements to preserve the integrity of the collaboration, either the group's integrity or the quality of the collaboration in which the partners are involved will be jeopardized.

Supporting and recognizing agency

In collaboration, partners need to decide about how to accomplish common goals, trying to understand each other, having to negotiate appropriate roles, requiring effort in establishing shared history and have to relate between diverse views and perspectives. This means that collaboration requires that partners have to define *dialogic agency* (Matusov, 2001) in each other. This process involves that partners have to stimulate each other towards construing deliberate and intentional choices which lead to collaboratively generated actions aimed at creating and sustaining new and shared understandings of common goals, problems and solutions. Agency involves partners to engage in both epistemic and social regulative processes of developing and prioritizing goals, problems and choices, problem solving and realizing shared outcomes. Edwards (2005; 2007) introduced the relevant concept of relational agency which describes one's capability to select the relevant material and/ or conceptual resources that are available in order be able to flexibly respond to interpretations of partners' knowledge and understanding. Instead of following procedures or conventions, relational agency involves that learners are able to capitalize on available resources to contribute to collective sense-making and development. More specifically, stimulating learners' agency may help them to handle emerging disagreements or tensions in collaboration.

As already shown previously, the teacher's generic epistemological approach to his teaching involves stimulating his students to become agents of their own learning. In the following excerpt he mentions this explicitly:

Interviewer What is your ultimate goal as a teacher?
Teacher That students know where they are, that they can make clear what their status and understanding is, that they are able to state what they want to achieve and

how. [...] In collaboration this means that students listen to each other and do what the other says ultimately leading to knowledge construction or something sensible and constructive. But in order to do so, you need to have the willingness, commitment and skills to make something out of it. That has social, cognitive, structural strategic components, technical insight, well let's call it agency. (pre-interview)

A main challenge to foster agency in a learner, still, is the question of how to engage him/ her in the agency process and avoiding the teacher to take over the learning process in case of breakdowns or even endangering the well-being of the learner (Matusov, 2001). Agency in the student is rejected when in case of a breakdown the teacher develops a deliberate control system to ensure students' learning and development. When for instance students violate the expectations of the teacher's expectations a feeling of helplessness or discontent overwhelms him/ her. To release this feeling and to resolve the situation, the teacher may decide to regress back to transmissive mode of instruction and teaching (Noddings, 1992). The harmful care often damages agency in the teacher because he/ she rejects considering his or her own expectations and teaching approach as faulty. It also often damages guiding agency in the student because the teacher rejects the students' participation in crafting guidance. Rogers & Freiberg (1994) have found that harmful care often starts a cycle of adversarial relations between the student and teacher.

In the next excerpt it is shown that the teacher rejects students' development of agency rather than guiding them how to develop it, as a reaction to the previous conflict where he showed his annoyance with students not having sent their paper:

Teacher I try the more direct approach, hope this helps. What you need to do for your research proposal is:

- 1. From the literature state sensible expectations or framework related to the two roles of media that you want to investigate. Write a short intro in which you substantiate these and write down your questions;*
- 2. Design one or two tasks your participants have to perform that fits with your expectations and questions;*
- 3. Describe how you are going to design research instruments*
- 4. Describe how you are going to measure outcomes/ relevant variables*
- 5. Provide a tentative timeline for your study*

*I will grade your research proposal which is expected end of next week. If you have questions, search for literature, let me know.
(E-mail correspondence with students 6th week)*

Although it was previously shown that the teacher's primary aim was to foster students' agency, he regressed back to more traditional interventions to ensure students' learning as a consequence of the previous conflict. Matusov (2001) described this as jeopardizing the collaborative relationship since this behaviour leads away from sensitive guidance towards increasing social distancing.

DISCUSSION

The present paper questioned the idea of breakdowns as the driving force of learning and development in collaboration. The mechanism proposed by several cognitive, sociocultural and developmental perspectives to learning is that as breakdowns in collaboration are aggravated, partners begin to question and deviate from its established norms.

According to this argument, learning is accomplished when these breakdowns lead to a reconceptualization of the object and motive of a particular activity to embrace a more diverse horizon of possibilities. Based on a review of a selected set of literature and on a case study, this paper showed that breakdowns in collaborations do not straightforwardly lead to collective reflection and envisioning of new strategies but that its impact is dependent on the interplay between several aspects that are encapsulated under the concept intersubjectivity.

Elsewhere (Sins & Karlgren, 2009) I have argued that productive breakdowns follow similar pattern which describe how professionals stabilize out of flux by changing their practices (Rasmussen & Ludvigsen, 2009). This pattern consisted of the following processes: labeling an issue, identifying the conflict, framing the conflict and constructing solutions. In the current paper, the notion of intersubjectivity proved to be relevant to understanding how breakdown in collaboration played out leading to detrimental effects. The paper presented qualitative data from the course to elaborate on three aspects of intersubjectivity which help to explain the failing collaboration between a teacher and his students: 1) proactive and continuous grounding, 2) sharing contradictions in considerate ways and 3) supporting and recognizing agency.

When collaborating, partners have to negotiate the meaning of individual contributions in order to establish common ground (i.e. shared knowledge). According to the collaborative model of communication (Clark & Wilkes-Gibbs, 1986; Isaacs & Clark, 1987) achieving shared understanding and knowledge is essential for communication. The way in which mutual understanding is established is through grounding., a process that involves all partners in a conversation. It is a collective process that ensures that partners understand each other to guarantee collaboration to prosper. Breakdowns in collaboration proved to be detrimental when partners do not contribute to achieving and maintaining intersubjective prolepsis. In addition, the existence of invisible or unarticulated contradictions may lead to false consensus which undermines partners' engagement in the process of grounding.

In addition, as argued by Matusov (2001) successful collaboration depends on the willingness and commitment of partners to respect other's as "authors of alternative views and acknowledging their contributions in development of their own positions" (p. 392). Fullan (1993) has argued that collaboration resolves around a space of shared problems rather than through common visions; nevertheless to cope with breakdowns one must consider the socio-historical origins of the conflicting perspectives that are explicated (Wickman & Östman, 2002). The reported case study showed that discrepancies in thinking, conventions, cultures and beliefs remained tacit and both teacher and students did not frame each other's contributions during interactions. In addition, when reflective trust is deficient in the collaboration between a teacher and his students, this undermines commitment to overcoming breakdowns having potential detrimental effects on a collaborative working relationship.

Finally, students who are capable of taking deliberate collective initiatives towards collaborative activities which are based on an elaborate analysis, reflection and negotiation of several perspectives, understandings and experiences are expected to cope productively in face of breakdowns. Still, teachers who design settings to stimulate students' agency may regress to transmissive modes of instruction when breakdowns occur.

Therefore, it is important that both teachers and students engage in a dialectic process in which they contribute in defining each other's agency (Matusov, 2001).

The current study is limited in scope and focus and more extensive research is needed to disentangle the particular circumstances and conditions that may explain the nature of the impact of breakdowns on collaboration between learners. I concur with De Dreu (2008) that we need to investigate the effects of different types of breakdowns or even compare different settings in which learners collaborate where breakdowns do or do not occur. A no-breakdown baseline is needed to investigate whether the ways in which learners manage breakdowns produce positive outcomes or whether they merely diminish negative outcomes. In the latter case we may need to consider whether learners are truly better off when they have to invest effort in overcoming breakdowns than when they have no breakdown to begin with. In addition, we need to conduct more longitudinal studies to investigate the immediate, delayed and more distal consequences of breakdowns in collaboration on the individual, group and institutional level (i.e. multi-level approach). Finally, we need to be much more critical in weighing and comparing the outcomes of breakdowns on collaborative practices to provide a more detailed insight into functional versus dysfunctional consequences of breakdowns.

Acknowledging the current study's shortcomings, some implications for implementing collaboration in education can be discerned. First, both students' as well as their teacher's concerns should be acknowledged as valid and have to be perceived as resources that can be exploited for further collaboration. Second, disagreements and misunderstandings should be expected and managed rather than always avoided and not resolved. Third, collaboration can be coordinated not only through shared vision but through specially designed boundary objects (Star & Griesemer, 1989). For instance, the conflict observed in the present case study can be transformed into a shared object (e.g. a reflection report). Fourth, mutual respect has to be preserved in case of serious conflicts. In short, collaboration requires creating space where members can disagree in a respectful way, help each other even when they disagree, and allow each other to work on alternatives.

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