

Computer-Enhanced Dialogic-Reflective Discourse

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Abstract: Various studies on computer-supported collaborative learning have shown that attempts to implement collaborative learning in learning communities frequently encounter serious challenges. The current paper, following the philosophical approaches of Martin Buber and Nel Noddings, suggests a way to enhance students' positive appreciation of collaborative learning as well as the extent and quality of their engagement in it. To this end, we propose a preliminary conceptual framework, called Computer-Enhanced Dialogic-Reflective Discourse, which explains the dimensions of discourse in which students co-explore the challenges arising from their collaborative learning experiences. We illustrate and discuss the supposed potential of our proposed framework.

Key Words: Computer-Enhanced Dialogic-Reflective Discourse (CEDRD), Computer-Supported Collaborative Learning (CSCL), dialogue, learning community, reflection.

“The learning community gave me a lot. From being an individual learner, I learned to appreciate the importance of the community members who shared the learning process, to appreciate my ability to learn enormously from community members, and to grow with their support.” (Gali, member of the CATELT learning community)

Introduction

Previous studies of computer-supported collaborative learning (CSCL) environments have shown that efforts to implement collaborative learning in educational settings frequently encounter difficulties, such as lack of students' motivation to actively participate in online interactions, superficial or spurious collaboration (Salmon, 2000; Wegerif, 2007) and unequal contributions by students throughout the learning processes (Kerr & Bruun, 1983). Research suggests that collaborative learning should be designed more carefully and be mediated to a greater extent by teachers (Brown & Campione, 1994; Dillenbourg, 2002; Guzdial et al., 1997). In recent years, research has included a focus on socio-emotional aspects of CSCL (Bielaczyc, 2006), for example the significance of the relationships among students, emotions that accompany and affect collaborative learning and learning communities (Baker et al., 2013; Dillenbourg et al., 2009; Hod & Ben-zvi, 2013), interpersonal conflicts (Baker et al., 2013; Ben Zvi, 2007), and students experiencing a sense of alienation in online courses (Shner, 2012).

This proposal is situated within the discussion on socio-emotional aspects of CSCL. More concretely, it seeks to demonstrate how a conceptual framework, based on principles adapted from Buber's Dialogic philosophy (Buber, 2007) and from the Ethic of Care perspective (Noddings, 1995; 2012) can contribute to this discussion. In this paper we therefore introduce CEDRD, a preliminary conceptual framework of Computer-Enhanced Dialogic-Reflective Discourse. The CEDRD framework is based on a study of four rounds of a semester-long graduate course entitled Challenges and Approaches to Technology-Enhanced Teaching and Learning (CATELT, Hod & Ben-zvi, 2013) that was designed as a blended, computer-supported learning community.

We first introduce the theoretical background of the CEDRD's two core dimensions: the dialogic and the reflective. Then, we elaborate on the way they are manifest in the framework's third dimension: the design of the learning environment. Through examples, we illustrate and discuss the significance of the CEDRD framework.

Dialogue and Learning

Researchers have proposed various links between the concept of dialogue and CSCL, suggesting different understandings of relevance and applications (e.g., Burbules, 1993; Koschman, 1999; Wegerif, 2007). We believe that several principles of Buber's dialogic philosophy and Noddings' concept of moral education, may hold special importance to CSCL's research and practice in allowing us to not only discuss the significance of dialogic social relations in these settings, but also to discuss their necessary composition and nature. After a brief introduction of these perspectives, we will discuss their relevance.

Buber (2007) argues that human self-realization as an “I” emerges and develops through and within the dialogic encounter with the other (Bergman, 2007; Buber, 2007). Dialogue happens between equal participants, who perceive each other as an end in itself, mutually engaged in an open and direct relationship, which Buber

calls the “I–Thou” relationship (in contrast to “I–it” relationships, in which the other is seen as an object to be manipulated or a means to obtain other goals). The I–Thou relationship is characterized by its participants’ attentiveness and responsibility toward one another, as well as their mutual confirmation of their acceptance, affirmation and support of the other in its otherness (Buber, 2007; Kramer, 2013). Central to the possibility for a true dialogue to occur is what Buber called inclusion – meaning, making present (Kramer, 2013), or “experiencing the other side to feel an event from the side of the person one meets as well as from one’s own side” (Friedman, 1956, p. 96). It is through inclusion that one can perceive and recognize the others in their full humanness, as they really are. Furthermore, it is through inclusion that one can grasp, not only the other’s character and talents, but a view of the situation and of the other. This may happen only through opening up oneself to the other’s otherness without forgetting or relinquishing what he himself is (Buber, 2007; Friedman, 2002).

The educational dialogue differs from other I–Thou relationships in that the teacher and the student are engaged in one-sided inclusion (Friedman, 1956). Based on the notion that this asymmetry is central to the teacher-student relationship, the student does not and cannot experience the side of the teacher. Yet it is through inclusion that the teacher knows whether she acts in a manner that is appropriate for and serves to benefit her student.

Noddings, one of the most influential scholars of the ethic of care perspective (Alpert, 2008), emphasizes the importance of creating caring relations within the classroom. Noddings distinguishes between the teacher’s role as carer, and students’ role as the cared-for. This occurs when the teacher directs a receptive attentiveness (which Noddings described as containing and tolerance attention) to the needs expressed by students (Alpert, 2008; Noddings, 2007) and to the students’ worlds. Then, the teacher has to respond to these needs, either by addressing them or, in cases of conflict between a student’s needs and the needs of the education system in which both exist, by ensuring that caring relations between them will continue and not be harmed by the teacher’s inability to address these needs (Noddings, 2012).

Noddings connects Buber’s dialogic philosophy and the ethic of care perspective (Noddings, 1995; 2010; 2012). It is through and within dialogue that students can get engaged in discussion about the meaning of care, and reflect and critically analyze what may or may not be considered as caring behavior for themselves and towards others. In addition, dialogue contributes to the development of the cared-for since it is through dialogue that the teacher may invite her students to “examine their own lives and explore the great questions human beings have always asked” (Noddings, 1995, p. 191). Furthermore, it is through dialogue that the teacher may learn about her students, their worlds and their needs, to better direct her efforts as carer, as well as getting from them the necessary feedback regarding her efforts (Alpert, 2008).

The relevance and special significance of these two perspectives stem from their emphasis on the relationships among learning community members as the heart of the educational process and its impetus, and as the key factor affecting students’ engagement in this process. In the context of the proposed CEDRD framework, the importance of these perspectives comprises more concretely of: a) an acknowledgement of the central role of the dialogic communication, characterized by care, attentiveness and confirmation; b) an emphasis on participants’ deep, comprehensive, and frequently reworked knowing of each other; c) an understanding of the students’ position as equal in value yet different in essence from the position of the teacher; and d) an emphasis on the students’ expressed appreciation of the caring relationships and their trust in the teacher.

Reflective Interactions in CSCL Communities

Reflective interaction, considered as an interaction in which partners not only propose solutions to a problem, but offer explanations, justifications, and/or assessments of these solutions, has been found to be one of the three interaction patterns that most effectively promote learning (Baker & Lund, 1997). Salmon (2002) described reflective interaction as a process of suggesting ideas, receiving feedback, and reforming initial ideas in response to the feedback. While these understandings of reflective interactions relate to theoretical knowledge, in the CEDRD framework the focus of reflection includes also the students themselves and the learning processes in which they are engaged. By this, we integrate the above definition with the understanding of reflection as individuals’ directed critical examination of their own past conduct (including beliefs, thoughts, and emotions) for the purpose of drawing conclusions that may be implemented in the future (Bengtsson, 1995; Hatton & Smith, 1995).

The integration of the dialogic and reflective dimensions in the context of CSCL, was previously proposed by Wegerif (2007). Wegerif proposed a model comprising three partially overlapping types of dialogue, each encompassing the others to some extent: critical dialogue (solving problems and making judgments), caring dialogue (understanding the other), and creative dialogue (exploring solutions, raising arguments). In addition, this model emphasizes the opening, deepening and broadening of reflective and dialogic spaces between students that enhance creative learning and learning how to learn. Therefore, dialogue is viewed not just as a means for constructing knowledge but as an end unto itself.

While there are several similarities between this model and the CEDRD framework, we place primary emphasis on the significance of interpersonal relations and personal acquaintance and their leading role in the learning process. Another difference is the context in which the concept of reflectivity is used. For Wegerif, reflectivity entails an exploration of theoretical knowledge, perspectives, etc., while in the CEDRD framework, reflectivity first and foremost entails an exploration of the students themselves in different contexts.

The Conceptual Framework of CEDRD

Having presented the theoretical foundations of the CEDRD framework, we discuss its dialogic and reflective dimensions and their manifestation in a computer-enhanced learning environment. After elaborating on the essence of each separately, we illustrate the meaning of the integration of these dimensions into the framework.

The Dialogic Dimension: Engaging in an Attentive, Caring Learning Community

The dialogic dimension includes both the teacher's as well as the students' context (Table 1).

Table 1: The teacher and students' contexts of the dialogic dimension

The teacher's context	The students' context
1. A caring, attentive, and accepting attitude.	1. Tolerance, mutual trust, and caring for each other.
2. An educational approach that promotes ongoing acquaintance, attentiveness and care among learning community members.	2. Sharing experiences, feelings, insights, and ideas with each other, orally and in writing.
3. Integrating social activities to deepen students' acquaintance and caring for each other.	3. Responding (orally and in writing) to other's reflections and comments.
4. Treating the conflicts that arise from collaborative interactions not as obstacles but as opportunities to deepen relationships and enhance involvement.	4. A growing acquaintance with each other.
	5. Engagement in an on-going discourse about the dilemmas and conflicts that emerge in the learning process.

The Reflective Dimension: 'Reflecting on' and 'Reflecting within' Collaborative Learning

The reflective dimension first of all implies the integration of reflective observation on how learning content is connected to students' lives, and on the individual, team, and collaborative community learning processes, as an integral part of learning. Moreover, the reflective dimension also implies the presence of several elements in the discourse (Table 2).

Table 2: Reflective elements in the community discourse.

The students' context	The community's context	The teachers' context
1. Students' oral and written reflective expressions throughout the course.	1. Community reflective conversations regarding individual dilemmas, interpersonal conflicts and community challenges arising from collaboration.	1. Raising questions that are designed to clarify or refine students' reflections.
2. Students' mutual exposure to others' reflections.	2. Community exploration of the significance of experiencing collaborative learning in a community of learners.	2. Modeling how and in what ways one's questions may assist another's reflective exploration.

The Design Dimension: Creating Spaces and Devoting Time for Ongoing Discourse

The blended learning environment combines in-class community reflective conversation (CRC) sessions with an online learning platform with the following vital design features (Table 3).

Table 3: Design features of the blended learning environment.

In-class community reflective conversations	Online learning platform
1. A space designed for community conversation (such as sitting face to face in a circle), that supports open, informal talk.	1. A space to conduct discussions about the collaborative knowledge emerging in the collaborative learning process.
2. Time devoted for community conversation (Takes a substantial part of the in-class sessions' total time, and is repeated weekly).	2. A space devoted to students' written reflective expressions.
	3. The visibility of the students written reflections to all learning community members.

Engaging in Computer-Enhanced Dialogic-reflective Discourse

Over the four annual iterations of research in CATELT, we repeatedly observed the emergence and development of discourse among the learning community members about the socio-emotional aspects of collaborative learning. This discourse was mostly feasible in the students' diaries, located at the Wiki course website, used by students to record their experiences and reflective insights on the learning process, and the weekly CRC, which takes place in-class' face to face meetings. From the second iteration on, we used several principles of Buber's dialogic thought and Noddings' ethic of care perspective, both to analyze and to further enhance the learning community discourse. To make our description of the CEDRD somewhat less theoretical, we provide several examples that illustrate its nature and some key features. In addition, they provide an opportunity to highlight potential significance of CEDRD.

Adopting a New Perspective upon Oneself and about Learning Collaboratively

Three students are the participants of the first example: Ariel, Dalit and Michal (All the students' names have been changed to preserve anonymity). The three worked on a collaborative editing task that required them to jointly write a summative critique of a paper. They began during the face-to-face meeting, and continued in the Wiki course website. In the CRC that took place the following week, one student described that she had felt pushed aside in the course of the collaborative work. The dominant student in this group made no comment during the CRC, but later wrote the following passage in his personal diary:

Ariel: After a brief exchange with Dalit and Michal, I accessed the editing window and, at my typical pace, started to delete, modify, and rephrase, effectively pushing aside everything that had appeared in the original article. Only after I returned home and looked at it again, did I start to feel a strong sense of discomfort – What right did I have? Who says that my interpretation of the article's meaning is better or more correct than what they had written? I looked at how I had been working in class and it seemed to be very disrespectful of the others' work, very aggressive and overbearing, maybe even violent... This did not match the image that I had of myself in my mind, which did not include being insensitive and overbearing!

Several days later, the following comment was posted on the joining Wiki conversation page:

Michal: The easiest thing is to blame you for being overbearing and causing paralysis in those around you through the speed of your thinking and your work, but what about [my own] personal responsibility? I was not very happy with the answers that I was forced to give to myself.

The next day, another comment was posted, this time from the third student in the group:

Dalit: For the most part I felt that you prompted me to keep going forward. I did not get the feeling that you were taking control of the computer. In general, I think that our joint learning process was too short. You have to get to know the team you are working with, and everyone has to get to feel comfortable, get to know the strengths and weaknesses of each other, among other things.

This example illustrates one of the main elements of the CEDRD framework: a collaborative dialogic reflection. By this, we refer to the manner in which the encounter with the observations and contemplations of others leads students to think about themselves and to adopt a new perspective on themselves. In this respect, the students' exchanges can be seen as a process of negotiation of the meaning of the events—whose goal is not necessarily to arrive at an agreed interpretation, but rather to reach an understanding of the personal implications that apply to each student separately, to their relations, and to their fundamental view of the nature of collaborative learning. This example demonstrates the potential of the CEDRD framework to enable and promote this kind of written communication. Moreover, throughout each of the course's iterations, collaborative dialogic reflection was manifested in two main forms: reflections expressed in the CRC were commented on later in the Wiki's personal diaries, and written reflections were mentioned and discussed in the following CRC. In some cases, we also observed how a discussion over one theme continued from CRC to the Wiki, back to the

CRC, and so on. This dynamic flow sometimes involved a growing number of participants, branching out of ideas and insights and leading to a creation of new links between ideas.

The dialogic significance of this joint reflective process also concerns how the starting point of the statements of all three students is attentiveness and caring, and their acknowledgement that coping with the challenges of their collaborative learning is a significant issue that is worthy of their time and efforts. Furthermore, the way the three students express their self-criticism may testify to their appreciation of this learning community as a safe, protected space. However, as these exchanges are visible to comments from all community members, the meaning of the dialogic reflection is not limited to what is said by the three students. It also encompasses a view of this discursive event as part of the continuum of small discursive events in the overall context of the discourse taking place in the learning community, as they learn from and develop the ideas of one another.

Community Reflective Conversation as a Space for Coping with Interpersonal Conflicts

Although contrasting perspectives were often expressed during the CRC or in students' personal diaries, in most cases, it did not take the form of an argument, in the sense of an attempt to get to a single conclusion or to convince each other. Rather, in a tolerant and supportive atmosphere, disagreements were used to reveal new meanings and understandings. Many students considered such events as insightful and significant which is clearly evident in their personal diary reports. As an example of this, following an unsuccessful collaborative learning experience, one of the leading students used the next CRC to share her overall disappointment with the way the group handled that task. While criticizing her own part in that process as well, she raised doubts about the usefulness and the advantages of collaborative editing in general. This sharing evoked an emotional discussion about the social norms of the community in general and about the different roles students took during this specific event. Later on, the other leading student of that specific learning assignment wrote the following:

Raida: I thought that Ronit and I have talked this issue thoroughly, and solved all disagreements between us. However, only today in the [community] reflection session, I have understood that I didn't really listen to her carefully enough before, not giving her the opportunity to tell me: Raida, you too didn't show any interest in others and provide them freedom in their work... After this experience I think we should add more norms, such as roles definition and schedule...

The CRC gave Raida and Ronit an opportunity to say things and to listen to each other in a way that apparently wasn't possible before. In choosing to open this issue up in front of all the community members, Ronit expressed her trust and confidence in them and in that forum. By doing this, she involved and engaged all the members in a discussion about taking responsibility over the learning processes. Raida too, did something similar. While based her comments on herself and Ronit, she moved to the community level, referring to "we" and suggesting that all group members take a step forward in taking more responsibility over learning. Raida was fully aware at that time that what she wrote was public.

Building on and Developing Each Other's Ideas

The following excerpt is a different example of how ideas may pass along the students:

Rina: What is nice about Wiki—and this is an idea that I am developing a bit after hearing it from Ariel (who heard it from Shlomit)—is that the Wiki world is effectively a world with no borders...this sparked many questions in me: Does being dominant mean causing a kind of paralysis in someone else? Or is our goal as students in a collaborative community engaged in collaborative writing to find our place, to make our way, aspire to grow and develop as far as our abilities allow us, and at the same time be collaborative and attentive to others?

This excerpt illustrates a process of collaborative development of a theoretical idea. Moreover, Rina synthesizes an idea that she read in other student's personal diaries with a significant concept that appeared in the community reflective conversation in the context of a specific event. From this starting point, she continues to pose more general questions, and suggests answers that relate to the theoretical content learned in the course. This example shows the creative potential lies not only in the reflective writing in itself, but in the possibility of one student to connect with other's ideas.

A Growing Appreciation of the Community Dialogic-Reflective Discourse

The following excerpt illustrates a general approach to the learning experience and its significance:

Michal: Some of the things I wrote or said attracted responses of community members, and I am very grateful to them for that. I think that the most significant learning that I did in this course was to recognize my ability to learn from others and grow from the dialogue taking place with community members following the ideas and thoughts that I expressed. This discovery was new, surprising, and addictive. I find that this dialogue allows me to reach places that I never even thought about, it can help break through dead-ends, it is enriching, and especially very interesting and fascinating.

This quotation is brought also to point to one of the most interesting developments we were witnessing: the gradual opening of many students to the possibilities of communicating and sharing with others within the community discourse. The importance of these quotations is that they show that the students themselves appreciate the dialogic aspects of the course, and recognize them as beneficial for themselves. On the one hand, reading other students' reflections can enrich the perspective of other students, trigger new thoughts and understandings and make them aware of issues and people in a new way. On the other hand, when other people respond to a student's reflections, that student is "being noticed" and "counted," which creates the feeling that she can make a difference to somebody else. Furthermore, being part of a dialogue that is considered significant and meaningful is to acknowledge learning as a social process that benefits its participants.

Discussion and Conclusions

In the following section, we discuss the dialogic and reflective dimensions of the CEDRD framework in relation to the design of the learning environment. We focus on the mutual exposure to the students' reflections, and the possibility for communication through varied and rich channels, as central features of the learning environment that enable dialogic-reflective discourse to emerge.

Students' mutual exposure to different reflections regarding the socio-emotional challenges of their collaborative interactions, provide them with a diverse picture of collaborative experience. This may enhance their awareness of the potential fragmentary nature of any single personal perspective. In this respect, the diverse picture is not necessarily a single, uniform understanding of an event, but rather the understanding that the event may have different interpretations that may be in tension with each other. Synthesizing individual perspectives is not a harmonious process that is free of challenges. Creating the big picture entails coping with dilemmas, conflicts, and criticisms that arise as part of the learning process. Therefore, we argue that it is specifically this coping process that represents the greatest potential of the dialogic-reflective discourse. It invites a constructive, critical, and collaborative negotiation of meaning of the emerging, diverse picture. This negotiation deepens students' understanding that each can contribute to and learn from the others, and promotes their appreciation of the learning community as a social framework that enhances and supports them.

The mutual exposure to reflections about theoretical knowledge studied in the course and their relevance to students' own lives, allows for a similar yet different process. In this case, it enables students to reconsider their original understandings or perceptions regarding this knowledge, and be enriched by and contribute to the insights of others. This also includes the view of the community as a space in which ideas and insights evolve and each student can and may develop or build upon insights of others. The exposure to students' reflections about their personal lives allows students to learn more about each other, in addition to their performances as students in the classroom. The emphasis here on mutual respect, care and responsibility that grows out of students' appreciation for each other. Closeness among learning community members does take place, eventually, as they grow to learn more about each other and engage together in the dialogic-reflective discourse.

Our discussion up until this point has concentrated on the significance of the mutual exposure to students' reflections in deepening and widening their acquaintance. Furthermore, we suggested that by this exposure they gain a richer perception of themselves as members in a collaborative learning community and of collaborative learning in general. This exposure has an additional importance which may be viewed as a door to a unique kind of dialogic communication among the learning community members: unique in terms of the themes of discussion as well as the manner in which the discussion is carried on. This communication may start with one student approaching the other with questions about a reflection. In other cases, this involves trying to get a clearer or deeper understanding of the other's point of view, and sometimes as a combination of both. Moreover, communication may start with the students questioning their own conduct, doubting if the way they acted was the only possible way to act. By doing that, instead of closing in while justifying one's own opinion or conduct, the discussants are opening up spaces within themselves and towards the other dialogically.

The open-to-all reflective and communicative nature of the CRC and the online personal diaries supports the acquaintance between students. It is a cyclic process: As students' acquaintance deepens, students

give deeper expressions to their emotions and insights, and their interest in and desire to respond to others' expressions also grow stronger. This acquaintance entails more than the knowledge of who a person is but the attempt to understand what they are going through (Noddings, 2012). This comes out of a sense of caring and attentiveness to the singularity of each student, and on the basis of the reflective expressions of each. The seeds of this potential are grounded in the teacher's dialogic approach and attitude, and this becomes a part of the students' own experience. An important element in this experience is the growing understanding and feeling that there is enough space for everyone, there is a place for everyone, and everyone counts. While that alone may carry a great significance, getting comments from others becomes so important because it shows that you have been noticed, and that your voice has been heard. Comments may also indicate that what you have said is meaningful to somebody, and at the same time it shows that somebody else cares about you.

Overall, the CEDRD framework allows us to identify the conditions under which collaborative learning develops into a meaningful process. Likewise, the framework demonstrated how a general appreciation of the contribution of collaborative learning to the students themselves emerges.

Limitations and Challenges

Emphasizing the potential significance and contribution of the CEDRD framework, we do not imply for the possibility of integrating this model in its fullness in each and every class or discipline. Rather, we want to suggest that it can be integrated in different levels or forms in accordance with the different conditions available. In pioneering research, Gofer (2013) showed how a more modest model may be successfully implemented with eighth graders. In her model, while students wrote their reflections in Wiki-based public diaries, conflicting incidents were not discussed in the whole class forum, but within sub-groups, under the guidance of the researcher and the teacher. In our case we are also fully aware of the fact that not all conflicts were discussed among students and not all personal dilemmas and difficulties were raised and shared while engaging in the community discourse. Moreover, there were always some differences between students, regarding their level and depth of sharing and their actual participation in the collaborative effort to face conflicts or to share and discuss theoretical insights. Bearing this in mind, preliminary results indicate that most students did engage in the community discourse, as well as the learning communities were stable enough to contain the ones that stayed less involved.

Summary

This paper presents the potential of dialogic-reflective perspective to contribute to our understanding of the socio-emotional aspects in collaborative learning communities. Furthermore, we suggested that the CEDRD framework may allow us to propose possible conditions under which students are engaged deeply in the collaborative learning processes and acquire a general positive perspective of collaborative learning as learning that enhances and empowers them. If we want students to deeply understand the meaning of collaborative learning and adopt it as *an approach to life*, they need to experience and examine it. We stress that this learning may be enhanced by students' engagement in a discourse that allows them to jointly confront and cope with the conflicts and dilemmas that arise from collaborative learning, discuss the significance of their collaborative learning, and discuss the contribution of the learning community's discourse itself for them. Furthermore, a productive and empowering discourse requires close relationships that are based on acquaintance, attentiveness and care among the learning community.

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