



ELSEVIER

Contents lists available at ScienceDirect

Learning, Culture and Social Interaction

journal homepage: www.elsevier.com/locate/lcsi

Full length article

Striking a balance: Socio-emotional processes during argumentation in collaborative learning interaction

Jaana Isohätälä^{a,*}, Piia Näykki^b, Sanna Järvelä^b, Michael J. Baker^c^a Faculty of Education, University of Oulu, P.O. Box 2000, FI-90014, Finland^b University of Oulu, Finland^c Telecom ParisTech, Centre National de la Recherche Scientifique, 6 rue Barrault, 75634 Paris Cedex 13, France

1. Introduction

Productive interaction in collaborative learning requires a balance of engaging in deep-level joint thinking, while sustaining a socio-emotional climate that is favorable for collaboration, even during critical discussions (Baker, Andriessen, & Järvelä, 2013). This balance relates to the intertwined nature of the cognitive and socio-emotional processes of collaborative learning, which are reciprocally shaped by one another through social interaction as the collaboration unfolds (Kreijns, Kirschner, & Jochems, 2003; Miyake & Kirschner, 2014). The cognitive processes of collaborative learning encompass the group's efforts to co-construct knowledge and provide the opportunities for collaborators to learn (Van den Bossche, Gijssels, Segers, & Kirschner, 2006). However, the emergence of high-level cognitive processes, such as elaborating, justifying, negotiating, and reasoning (Baker, 1999; King, 2002; Volet, Summers, & Thurman, 2009) depend on the socio-emotional processes of collaborative learning, namely the group's ability and efforts to sustain cohesive, mutually respectful social interaction (Barron, 2003; Rogat & Adams-Wiggins, 2015).

The equilibrium of engaging in high-level cognitive processes, while sustaining socio-emotional processes that are favorable to this, is particularly precarious when students' interaction involves *argumentation*—that is, critical discussion of divergent claims. On the one hand, argumentation encompasses high-level cognitive processes, such as reasoning, co-elaboration, and negotiation (Asterhan & Schwarz, 2016; Baker, 2009; Osborne, 2010). On the other hand, argumentation is also emotional in nature (Polo, Lund, Plantin, & Niccolai, 2016), being often accompanied by irritation, anxiety, joy, empathy, or other affective feelings (Gilbert, 2004; Martinovski & Mao, 2009; Plantin, 2004). Emotions, thus, are a natural—even fruitful—part of argumentation (Goldberg & Schwarz, 2016; Polo et al., 2016), but intense reactions or insensitivity to others may cause unfavorable socio-emotional tension (Andriessen, Baker, & van der Puil, 2011; Asterhan & Babichenko, 2015) and threaten the face of the participants in the discussion (Brown & Levinson, 1987; Muntigl & Turnbull, 1998). However, avoiding confrontation and tension does not provide grounds for high-level critical discussion which may lead students to miss opportunities for learning (Andriessen, Pardijs, & Baker, 2013; Baker & Bielaczyc, 1995; Weinberger & Fischer, 2006).

Studies in the interactions paradigm in collaborative learning research (Dillenbourg, Baker, Blaye, & O'Malley, 1995) highlight that it is essential to empirically study the dynamics of productive interaction in order to foster learning in groups (Enyedy & Stevens, 2014). Regardless, the majority of past empirical studies arguing to learn as a group focused on cognitive processes of reasoning; it is only recently that studies have more explicitly addressed the socio-emotional processes that intertwine with cognitive ones (e.g., Andriessen et al., 2013; Asterhan, 2013; Polo et al., 2016). Since the research has yet to thoroughly document or untangle the complexity of collaborative learning interaction, it is necessary to explore how engaging in high-level cognitive processes—namely, argumentation—and sustaining favorable socio-emotional processes occur and intertwine in students' interaction.

* Corresponding author.

E-mail addresses: jaana.isohatala@oulu.fi (J. Isohätälä), piia.naykki@oulu.fi (P. Näykki), sanna.jarvela@oulu.fi (S. Järvelä), michael.baker@telecom-paristech.fr (M.J. Baker).<http://dx.doi.org/10.1016/j.lcsi.2017.09.003>

Received 6 February 2017; Received in revised form 24 September 2017; Accepted 25 September 2017

2210-6561/© 2017 Elsevier Ltd. All rights reserved.

1.1. Socio-emotional processes in collaborative learning interaction

Different concepts have been used to describe the social and emotional dimensions of collaborative learning, including *social and socio-emotional processes* (Kreijns et al., 2003; Rogat & Adams-Wiggins, 2015), *the relational space* (Barron, 2003; Janssen, Erkens, Kirschner, & Kanselaar, 2010), and *group processes* (Rogat & Linnenbrink-Garcia, 2011). What these concepts essentially try to capture are the learners' abilities and efforts to sustain cohesive, mutually respectful social interaction (Barron, 2003; Rogat & Adams-Wiggins, 2015), including developing trust and fostering safety for collaboration, and building a sense of community with a shared goal (Kreijns et al., 2003; Wegerif, 1998).

Socio-emotional processes in collaborative learning are *social* processes in the sense that they are dynamically created within the interpersonal setting through the social interactions that the learners engage in and also influenced by students' beliefs about the social context (Van den Bossche et al., 2006), which include, for example, students' perceptions of interdependence (Van der Vegt, Emans, & Van de Vliert, 1998), social cohesion (Sargent & Sue-Chan, 2001), group potency (Guzzo, Yost, Campbell, & Shea, 1993), and psychological safety (Edmondson, 1999). Socio-emotional processes are also *emotional* in the sense that learners' perceptions of the social context are related to their emotions as subjective inner appraisals and responses (Frijda, 1988). The emotional appraisals are both expressed in and influenced by learners' social interaction and activities (Cahour, 2013; Pekrun & Linnenbrink-Garcia, 2012). These elements dynamically shape each other during the flow of collaborative learning, which motivates reference to the socio-emotional dimension of collaborative learning as a temporally unfolding process.

The present study explores learners' socio-emotional processes in groups' social interaction, revealing how learners engage in collaboration and how they express their emotions and relate to each other during collaboration (Linnenbrink-Garcia, Rogat, & Koskey, 2011). Observing learners' social interactions can shed light on how collaborative processes unfold over the course of collaborative learning (Enyedy & Stevens, 2014), giving insight into the temporal evolution of collaborative learning. Socio-emotional processes can be traced in interaction by observing the degree of joint participation as an indicator of how learners engaged in collaboration, but also the emotional valence of students' communicative exchanges as an indicator of how emotions were expressed and how students related to each other in interaction.

Studies have shown that productive collaborative learning is facilitated by active participation in social, task-focused interaction (Cohen, 1994; Dillenbourg, 1999) and students' mutual engagement in joint discussion (Barron, 2000, 2003). It is known that joint participation is not self-evident when people work together (Miyake & Kirschner, 2014); nevertheless, participation in social interaction is a prerequisite for students to make use of the affordances of learning as a group (Clark & Brennan, 1991). In interaction, joint participation is manifested as group-level behavioral engagement, where the whole group is focused on a task and each other's contributions and when students actively contribute to the discussion (Sinha, Rogat, Adams-Wiggins, & Hmelo-Silver, 2015). A lack of participation, in turn, is manifested as non-engagement and social loafing (Karau & Williams, 1993; Salomon & Globerson, 1989). In collaborative learning situations, it may not be necessary for joint participation to be completely continuous, but activities and attention must regularly converge in order for students to sustain mutual engagement (Barron, 2000; Roschelle & Teasley, 1995).

Socio-emotional processes in collaborative learning are also linked to the emotional valence of students' interaction. Studies have shown that favorable socio-emotional processes are fostered by *positive socio-emotional interaction*, such as encouragement, inclusion of ideas, listening, and conveying group cohesion (Kwon, Liu, & Johnson, 2014; Rogat & Adams-Wiggins, 2014, 2015; Rogat & Linnenbrink-Garcia, 2011). Such exchanges sustain cohesive and mutually respectful social interaction (Barron, 2003; Kreijns et al., 2003). For example, Sinha et al. (2015) reported that a collectively engaged case group of 7th graders showed evidence of soliciting opinions, a respectful and responsive tone in their interaction, and a sense of cohesion through the frequent use of the first person plural pronoun "we." Similarly, Arvaja, Häkkinen, Rasku-Puttonen, and Eteläpelto (2002) observed that a case group of 9th graders was able to reach a high level of collaboration through an open and relaxed atmosphere with the safety to disagree. In other studies, favorable socio-emotional processes have been shown to be impeded by negative socio-emotional interaction, such as overruling, undermining, exclusion, insulting, ignoring, and discouraging participation, which may trigger further negative emotions and lead to non-engagement (Chiu & Khoo, 2003; Linnenbrink-Garcia et al., 2011; Näykki, Järvelä, Kirschner, & Järvenoja, 2014; Rogat & Linnenbrink-Garcia, 2011; Webb, Ing, Kersting, & Nemer, 2006).

In sum, studies have shown that favorable socio-emotional processes for productive collaborative learning are characterized by cohesive, attentive and respectful interaction. However, the more cognitively challenging the interaction becomes, the more challenges it can pose for sustaining favorable socio-emotional processes (Järvenoja & Järvelä, 2009). The tension raised by cognitive challenges in interaction can pose a threat to the group's socio-emotional climate but can also accompany cognitive affordances (Andriessen et al., 2011; Polo et al., 2016). As discussed next, this is particularly the case when the collaborative learning interaction involves interpersonal socio-cognitive conflict, resulting in argumentation.

1.2. Argumentation and socio-emotional processes in collaborative learning interaction

It has been shown that, given the right conditions, argumentation can be an effective way of learning as a group (Asterhan & Schwarz, 2009; Clark & Sampson, 2008; Felton, Garcia-Mila, & Gilabert, 2009; Yeh & She, 2010). Argumentation deepens knowledge construction from quick consensus building to conflict-oriented consensus building, where students subject each other's contributions to critique rather than simply accepting them as such (Weinberger & Fischer, 2006). Critical discussion allows learners to mirror opposing opinions and facilitates the recognition of multiple views (Kuhn, Shaw, & Felton, 1997) and discrepancies in one's own and others' understanding (Nussbaum & Sinatra, 2003). Thus, as argued by Baker (2009), argumentation has the potential to broaden, deepen, and refine understanding, as it fosters justification, negotiation of meaning, and opinion change.

Download English Version:

<https://daneshyari.com/en/article/6844171>

Download Persian Version:

<https://daneshyari.com/article/6844171>

[Daneshyari.com](https://daneshyari.com)