



# Boundary crossing of discourses in pupils' chat interaction during computer-mediated collaboration

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## ABSTRACT

This article presents a case study of the computer-mediated interactions of 21 primary school pupils, that is, "chats" while they collaborated in writing a school musical script both inside and outside school. Drawing on a sociocultural perspective and on the notion of boundary crossing, the study investigates the pupils' discourses during their chat interactions. Specifically, the study examines the ways in which the pupils established and managed boundaries between various discourses during their joint online activity. Boundary crossing in the pupils' chat interactions was found to give rise to hybrid spaces where the discourses of *schooling* and *everyday life* intersected. Characteristic of these hybrid spaces was the continuous fluctuation of socio-emotional features that mediated the boundary crossing of discourses in the pupils' joint online activity. In these hybrid spaces of chat interaction, the pupils negotiated a common ground and gained mutual inspiration, trust, and belonging. The study also demonstrates sociocultural tensions in boundary crossing and how these both facilitated and challenged the pupils' computer-mediated collaboration. The study enriches present-day understanding of the social, emotional, and cultural dimensions of chat interaction in computer-mediated collaboration.

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## 1. Introduction

In recent years, new media and online networks have become embedded in the everyday lives of many young people. The most recent time-use survey reported that 94% of Finnish 10- to 14-year-olds use computers in their spare time every week, and the most common activities include searching for information online, studying, playing games, reading email, chatting, and downloading and listening to music (Statistics Finland, Helsinki, 2009). In addition to these forms of self-sustained engagement, many formal institutions, such as schools, are increasingly harnessing technologies and media to support the engagement and learning of pupils. Consequently, it appears that for many young people, the boundaries between the various social contexts in which they live and learn are becoming blurred (Erstad & Sefton-Green, 2013; Hargittai, 2007; Lange, 2007; Sefton-Green, 2013).

Recently, researchers in education have drawn attention to the ways in which the intersection of social practices creates the potential for new forms of engagement and negotiation of meaning (Akkerman & Bakker, 2011b). However, very little information exists about the conditions that make such boundary crossing possible (see e.g. Akkerman & Bakker, 2011a; Grossen et al., 2012; Phelan et al., 1991). In particular, little attention has been paid to examining the mediating role of material, sociocultural, linguistic, and cognitive resources in boundary crossing and how these promote the construction of hybrid spaces, that is, spaces in which different discourses intersect and merge. Hybrid spaces are important because within them people can

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negotiate and translate discursive and material resources more freely, thus facilitating collaborative activity and meaning making (Gutiérrez et al., 1999; Konkola et al., 2007).

### 1.1. Social interaction in computer-mediated collaborative learning

At present, many computer-mediated collaborative learning environments include online chat facilities that enable synchronous social interaction among participants across contexts (Erkens et al., 2005; Garcia & Jacob, 1999; Hrastinski, 2008; Zemel, Cakir, & Stahl, 2009). Although technologically these environments have improved considerably, the social, emotional, and cultural dimensions of computer-mediated collaborative learning are often neglected or taken for granted (Kreijns et al., 2003). A review of the research on chat interaction during computer-mediated collaborative learning revealed that to date, very little research has focused on chat interaction during socially shared learning activities in the context of primary school. The use of chats and other communication tools during computer-mediated collaborative learning has been studied mostly in the context of higher education, particularly distance learning (Madge et al., 2009).

Much of the existing research on computer-mediated collaborative learning has focused on the ways in which social interaction contributes to the cognitive processing of collaborative tasks. This research has demonstrated that pupils' social interactions are often off-task, lack critical thinking and argumentation, and have little to do with instructional learning (see e.g., Gilbert & Moore, 1998). Existing research on computer-mediated interaction has also illuminated specific challenges in the establishment of a common ground and mutual knowledge, which are necessary requirements in any collaboration (see e.g., Jones, 2002; Edwards & Mercer, 1987). In a review of research on computer-mediated collaborative learning, Kreijns et al. (2003) also pointed out that existing research on computer-mediated collaborative learning has concentrated too narrowly on participants' cognitive processes. The authors argued that understanding how social interaction supports group development and how social spaces promote pupils' senses of trust, respect, and belonging are also important elements of computer-mediated collaborative work and learning. These findings were confirmed by other studies, which demonstrated that in order for pupils to engage willfully in collaboration and recognize collaboration as a valuable experience, they need to trust each other and feel a sense of warmth and belonging (Gunawardena, 1995; McPherson & Nunes, 2004; Rourke, 2000).

In this study, we go beyond the cognitive aspects of pupils' collaborative activity, extending our focus to the social, emotional, and cultural dimensions of computer-mediated interaction, or chatting, while pupils collaborate in writing a school musical script both inside and outside school. Drawing on the sociocultural perspective and on the notion of boundary crossing, the study investigates pupils' discourses during their chat interactions. The concept of discourse provides a way to examine the continuities and discontinuities that often distinguish pupils' everyday discourse from that of schools and other formal institutions (Gee, 1996). We contend that this sociocultural understanding can potentially illuminate the complexity of reciprocal person–environment interactions that comprise a unique configuration of social practices and resources (Barron, 2006). Specifically, we examine the ways in which pupils manage their online collaborative activity in a social context that is potentially open to various forms of participation.

## 2. Boundary crossing of discourses in collaborative interaction and learning: a sociocultural perspective

The sociocultural perspective in which this study is embedded advocates that learning is a complex, reciprocal process dependent on constructive, culturally relevant interactions between learners and their social ecologies that vary across temporal, contextual, and cultural spaces (Barron, 2004). The sociocultural perspective holds that all contexts of learning, both physical and virtual, are centers of multifaceted and complex activities: they are places where social, cognitive, and cultural mediation occur as knowledge and subjectivities meet, cross, and resist each other (Rex et al., 2006). By viewing context as a function of the dynamic interaction between multiple layers of activity, the sociocultural view foregrounds the fact that during collaborative work, participants are active in creating social and interactional contexts (Goffman, 1974; Kumpulainen & Mutanen, 1999; Schubauer-Leoni & Grossen, 1993). In this view, semiotic tools, characteristics of the task, and the sociocultural context of the activity, including participants' intentions and interpretations of the situation, shape the nature of the collaboration and emerging interactions (Moschkovich, 1996; Roschelle & Teasley, 1995). Canagarajah (2005) introduced the term “shuttling” to illustrate the ways in which individuals move between social–textual conventions during their participation in various communities and how they make use of semiotic resources to achieve personally relevant goals. From this standpoint, interaction is not determined by the medium or physical context; instead, it is negotiated dynamically in a social context. It is performative and context-transforming, facilitating the ongoing negotiation of meaning and presentation of self (Kumpulainen et al., 2013; Thorne, 2003).

In this study, we view discourse as the framework that guides how we make sense of the world. Discourses are enacted through the practices of the communities in which people participate (Wenger, 1998). Discourses offer membership in communities that involve ways of being, valuing, and speaking. Gee referred to such memberships as identity kits (1996), situated identities (1999), and affinity groups (2001). Discourses are considered an integral part of value- and belief-laden practices that are lived, talked, enacted, and carried out in specific places and at specific times (Gee et al., 1996). It follows that discourses can be understood only within the sociocultural context in which they originate (Gee, 2000).

At present, we have limited understanding of the processes by which young people interact in multiple communities and of how their learning is configured by the activities that they participate in and the social, symbolic, and material resources that they use (see also Greeno, 2006; González et al., 2005; Star & Griesemer, 1989). Furthermore, relatively little is known about how boundaries are created, manifested, and contested in computer-mediated collaborative work and learning. However, this strand of research has questioned arguments that unified and similar perspectives are prerequisite conditions for both collaboration and

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