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Teachers at the zone of proximal development – Collaboration promoting or hindering the development process

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HIGHLIGHTS

- Qualitative analysis makes collaborative development visible.
- Trajectories of collaboration differ between differently successful teams.
- Cumulating and accepting of ideas do not develop or create knowledge and practices.
- Accepting as collaborative action in a group level prevents collaborative development.
- Further development of ideas and questioning promote collaborative developing.

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ABSTRACT

This study focuses on collaborative teacher learning during an in-service education course that supports teachers in creating knowledge and practices for teaching. The study investigates what types of activity support or hinder collaborative development within more-or-less successful teacher teams' group discussions. The findings indicate that collaboration that supports collaborative development consists of ideation, further development of ideas and raising questions. Excessive agreement appears to prevent successful collaborative development. The study suggests that in symmetrical peer-to-peer collaboration, equals are able to support creative collaboration by revising and questioning developed constructions and the developmental process itself, through the application of theoretical knowledge.

1. Introduction

Maintaining teachers' expertise and good practices are essential for successful education and an international concern (Avalos, 2011). One method that contributes towards that goal is teacher collaboration. Collaboration supports the development of teachers' skills and helps to sustain professional development of teachers in a more across-the-board manner such as facilitating teachers professional growth and development (Day, 1999; Grossman, Wineburg, & Woolwort, 2001; Meirink, Meijer, & Verloop, 2007; Putnam & Borco, 2000). Social support also helps teachers to learn from each other, develop distributed expertise and gives teachers access to a far wider range of ideas than what would have been possible without collaboration (Fishman & Davis, 2006, p. 542). Teacher collaboration also supports the construction of knowledge (Bereiter, 2002; Day, 1999; Woods, Jefferey, Troman, & Boyle, 1997). However, teachers' opportunities to engage in collaborative learning events are resource-bounded. They rarely have the opportunities to reflect together on their work practices or to review the underlying theoretical knowledge of teaching and learning (Day, 1999, p. 150).

Previous research shows that teams or groups' outcomes or successes in collaboration vary, and collaboration does not always result in innovative teacher learning or generate new knowledge or practices (Kuusisaari, 2010; Meirink, Imants, Meijer, & Verloop, 2010; Tillema & van der Westhuizen, 2006). Collaboration does not necessarily contribute to successful learning of students in 'collaborative groups' in classroom settings (Barron, 2003). Thus, there is much uncertainty with respect to how and when collaborative learning is beneficial.

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Collaboration as a process of development is an interesting topic for research. The collaborative development process needs to be studied in order to gain more knowledge on how collaboration itself affects more-or-less productive development and how groups collectively bear development in discussion. In this study, I investigate collaborative development processes within three teams of teachers during the actual group discussions. These discussions aimed at the collaborative development of teaching practices. The Vygotskian approach is the theoretical basis of this study, and it emphasizes the importance of collaboration in learning.

Academic teacher education contributes to the excellent and highly reputed sustained results of Finnish students' evaluation in the OECD Programme for International Student Assessment (PISA, 2000, 2003, 2006, 2009, 2012). The Finnish teacher education system relies on research-based education, where all the students graduate as Masters with the scientific abilities for sustaining their professional expertise. However, in Finland and globally, there is a need to develop academic in-service education to sustain teachers' professional development. In-service education of teachers is a necessary part of the teachers' professional development as was highlighted by Day (1999). In-service education and training is a way to bring teachers together and create the social context for collaboration.

In 2005–2006 an academic in-service education course for teachers was implemented in order to help Home Economics teachers to improve their teaching by assisting them to create new knowledge and work practices. The teaching practices and methods in the context of this article entail ways of orchestrating teaching to support and guide students' learning. This includes the learning environment and the role of a teacher in addition to the designed learning task (The Finnish National Board of Education [FNBE], 2004.) The objective of this voluntary course was for participants to respond to the demands of the latest learning theories, constructivism and social-cultural: approaches present in the national curriculum. The curriculum itself is a description of the general goals for teaching and learning; not an exact guide of used practices. Therefore the teachers themselves are responsible for developing and using teaching methods and practices that comply with the latest curriculum. The teachers aimed to integrate these new learning theories into their established practices and insights based on their teaching experience. In this manner participants should have created novel forms of teaching practices through the collaborative process. The focus of this article is to study the process of collaborative development that took place in the abovementioned teachers' group discussions.

This article contributes to the further development of theory in the area of teacher development. Vygotsky's (1978) concept of the zone of proximal development (ZPD) offers a theoretical approach to the research of teacher development in this study. The broad theoretical framework of this research is the use of ZPD as a tool for understanding the process of collaborative knowledge creation. According to Vygotsky's (1978, 86) original definition, the ZPD: ‘ … is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers’. This concept is often applied in research that explores facilitated or scaffolded collaboration of children in a classroom setting (Berk & Winsler, 1997; Hedegaard, 2002; Quintana et al. 2004; Wood, Bruner, & Ross, 1976). The focus of interaction research is usually on teacher–student collaboration, in a classroom setting. This research applies Vygotskian ideas to adult learning, namely teacher collaboration, by focusing on the peer-to-peer collaboration of equally capable adults who have the same level of expertise.

Many researchers within the learning sciences study the role of collaboration in the context of learning by analysing collaborative discourse. Sawyer (2006) argued that the tradition of peer group learning research has hitherto focused on individual outcomes, task structures and incentive structures. However, there have been few studies on the discourse processes in collaborative peer groups and on the features that are associated with the most effective forms of collaboration. Sawyer's (2006) solution is an interaction analysis that identifies specific discourse processes that make collaboration an effective learning environment.

When considering the analyses of interaction processes, Sawyer (2006, p. 190) widened the understanding of interaction analysis to refer broadly to all methodologies used to study verbal and non-verbal interactions, including detailed conversation analytical (CA) methods, various coding techniques etc. He only made a distinction between the two extremes of the full range of interaction analysis methods, namely: narrow and broad interaction analyses extremes. The narrow extreme refers to a method that documents the mechanisms whereby learning occurs; transcription detail is CA and qualitative analytical methods are applied. The broad extreme refers to a method able to generalize larger patterns that enable the comparison of data across settings, in which transcription detail is screenplay meaning a word level, and which may combine qualitative and quantitative analytical methods (Sawyer, 2006, p. 200). The methodology adopted in the present study lies somewhere in the middle of these two extremes. It focuses on peer-to-peer collaboration by presenting data-driven analysis of the content of verbal interaction within teacher groups' discussions. The present article takes up the challenge of developing both theory and analysis in the area of teacher learning and professional development.

2. Collaboration in educational research

2.1. Settings for collaboration in educational research

Collaboration in educational research has been studied in a wide range of settings. The settings for collaboration research vary: between peer-to-peer settings of symmetry and asymmetry; between classroom and work contexts; between children and adults; between the openness of the task and aim of the group.

Collaborative learning, problem solving, and development, have been studied in two different group configurations: symmetrical or asymmetrical arrangements. In the context of this study, asymmetry in collaboration occurs in the following situations: peer-to-peer collaboration where an authoritative figure such as a teacher, or adult or some other figure provides mentoring and is also involved in group discussion or in a shared learning situation that often takes place in the classroom context. In other words, asymmetrical collaboration involves a scaffolded setting that contains different levels of support or facilitation within group. For example, a scafflolded setting occurs when, a facilitator with a higher level of expertise is present and takes part in the discussion or supports finding a solution (e.g. Hmelo-Silver, 2003; Jenlink & Kinnuncan-Welsch, 2001; Orland-Barak, 2006). In contrast, symmetrical peer-to-peer collaboration refers to team-work by which all the group participants work as equals, and their expertise is at the same level. Of course, their expertise need not be similar because individuals' experiences, knowledge and skills do vary (Dillenbourg, 1999, pp. 7–8.). In symmetrical collaboration, there is not a ‘more competent’ or authoritative facilitator present in the group in contrast to asymmetrical collaboration. Symmetrical peer-to-peer collaboration has been investigated by Barron (2003) in the school context of 6th year students' joint problem-solving and Kumpulainen and Mutanen (1999) among 12-year old students in a