Teaching and Teacher Education 46 (2015) 72–83

Contents lists available at ScienceDirect

Teaching and Teacher Education

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

Dialogic understanding of teachers' online transformative learning: A qualitative case study of teacher discussions in a graduate-level online course

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HIGHLIGHTS

- Bakhtin's Dialogism deepened our understanding of teacher discussions and learning.
- Dialogic online teacher-to-teacher discussions led to teacher transformative learning.
- Teacher transformative learning supported their educational use of technologies.
- Essential characteristics of dialogic teacher-to-teacher discussions were analyzed.
- Developing a supportive online course CoP facilitated dialogic teacher discussions.

ARTICLE INFO

Article history:
Received 22 January 2014
Received in revised form
28 October 2014
Accepted 3 November 2014
Available online 20 November 2014

Keywords:
Teacher professional development
Transformative learning
Community of practice
Online course design
Dialogue
Teacher-to-teacher discussion

ABSTRACT

Teachers are expected to implement new educational technologies and adapt to new teaching environments. However, it involves a complex learning process that can lead to their perspective transformation. We have developed and taught a discussion-based online course to facilitate teachers' transformative learning. This qualitative case study examines teachers' perspective transformation in our course to understand the nature of effective online teacher-to-teacher discussions. Based on a theoretical framework that integrates Mezirow's transformative learning model and Bakhtin's dialogism, this paper builds on previous literature on teacher-to-teacher discussions as well as providing a fresh perspective to inform the current globalized teacher education context.

1. Background

With our fast-changing social conditions, schools are increasingly expected to help students acquire critical and other skills to assist their adaptation to environmental changes throughout their lifetime (Lynch, 2000; Trilling & Fadel, 2009). This expectation further implies that teachers themselves must be similarly adaptable in order to effectively teach their students. Changing teaching practices evidenced through adopting new technologies in one's classroom is often considered as explicit evidence that a teacher has effectively adapted to a new educational environment (Lawless & Pellegrino, 2007). In the field of teacher professional development (TPD), therefore, there have been great research efforts to understand how teachers effectively learn and implement new technologies into their classroom teaching and the impediments that may prevent this from happening.

Avidov-Ungar and Eshet-Alkalai (2011) argue the successful implementation of innovative technologies in teaching requires teachers to have not only technological competencies but also content knowledge and pedagogical understanding, that is collectively, "technological pedagogical content knowledge" (known as the TPCK model, Koehler & Mishra, 2008). The authors demonstrate that teachers having a higher level of TPCK tend to be more positive towards classroom change and to perceive their school as a learning organization, which increases their willingness to attempt to use technologies in teaching. Similar studies about the relationship

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http://dx.doi.org/10.1016/j.tate.2014.11.001
0742-051X/

between teachers' TPCK and their implementation of technologies also suggest that without all three components of this multidimensional knowledge, teachers are likely to face a wide range of challenges with teaching in technological environments (Cunningham, 2009; Harris, Mishra, & Koehler, 2009). King (2001, 2002) and Kitchenham (2006) use a transformative learning framework to describe such teachers' journeys of learning using educational technologies, in which critical self-examination and perspective transformations were evident. Thus, we would argue that pedagogical change using new technologies can involve a complex learning process that leads to potential transformation of teachers' attitudes, perspectives, and so practices.

However, changing perspectives can be very challenging for individual teachers and is often accompanied by negative emotional reactions such as hostility, denial, or distress (Servage, 2008). In this context, socio-cultural understanding of learning as active participation in shared practices of social communities has been suggested as one of the most promising approaches to TPD (Lave & Wenger, 1991; Wenger, 1998; Wenger, McDermott, & Snyder, 2002). A teacher community of practice (CoP), and particularly one which has created a shared trust among its members, enables teachers to learn new knowledge and perspectives through interacting with other teachers and transforming their teaching practices *with* community supports (Darling-Hammond & Ball, 1997; Hawkins, 1996; Lock, 2006; MacDonald, 2006; Wang & Lu, 2012). Teacher CoPs, therefore, further facilitate organizational improvement in school settings through teachers' collaborative efforts to change their teaching practices and contexts (Hargreaves & Fullan, 2012). Considering the growing social pressure on individual teachers for classroom innovation and the challenging nature of transformative learning that teachers experience when implementing new technologies in their teaching, building teacher CoPs has become a significant and important means of TPD.

There has been a parallel emphasis on encouraging technological integration into TPD practices through means such as online courses, which can offer teachers various forms of interaction as a way to construct meaningful knowledge for teaching (e.g., Hramiak, 2010; Slaouti, 2007). Online TPD practices, similar to the CoP approach, are rooted in a theoretical base of social constructivism that views learning as social interactions and values dialogues between learners who are in different stages of cognitive development (Vygotsky, 1978). The major purpose of online learning design, therefore, is not to deliver particular knowledge to teachers but to provide them with various opportunities to interact with peer-teachers, reflect on their own learning processes; and furthermore, transfer the learning outcomes of their classroom practices (Laferriere, Lamon, & Chan, 2006; Schlager, Fusco, & Schank, 2002; Thompson, Schmidt, & Davis, 2003). This TPD approach to teachers' learning and implementing of new technologies has at least two advantages. First, teachers have opportunities to interact with other teachers online without leaving their classrooms and homes unlike face-to-face TPD workshops. Second, teachers gain practical knowledge, which is more likely to be applied in their teaching practices because of the actual learning experiences of using those technologies.

Unfortunately, these two current approaches to TPD have not been practically integrated with each other although there have been several attempts to build online teacher CoPs (e.g., MERLOT, Tapped In, The Math Forum). Furthermore, their collective effects on changing teachers' teaching practices remain unexplored although each approach has been separately reported effective in teachers' transformative learning (Servage, 2008). To explore the potential value of integrating these two approaches, the two authors of this paper have been engaged in a multi-year effort to deliberately integrate a CoP model into an online TPD course. Since 2011 when we first developed a theoretically-driven "double-layered CoP model" for online course design, our iterative design-and-teaching attempts have been situated in a graduate-level discussion-based online course titled 'Educational applications of Computer-mediated communications (CMC)' at a leading Faculty of Education in a very multicultural urban center in Canada. The effectiveness of the model has been examined through analyzing teachers' perspective transformation in the course discussions and we have suggested that the course structure of the double-layered CoP fosters teachers' transformative learning. We have also found Bakhtin's dialogism (1981) a useful perspective to inform and evaluate our teaching practices in this particular educational context.

This paper, therefore, aims to suggest some general theoretical implications of our design-and-teaching experiences that may be effectively implemented in diverse teacher education settings not only in North America but globally. For that purpose, we will describe how teachers' perspectives are changed through open-ended dialogues in our online TPD course, leading to teachers' transformative learning for educational use of technologies. It will be then argued that the Bakhtinian approach to dialogue may help deepen teacher educators' understanding of how effective online teacher discussions support perspective transformation. In our methodology section, we will also provide a brief description of the structure of our online course, viewed as a double-layered CoP, connecting the course experience to teachers' professional communities outside the course environment.

2. A theoretical framework: dialogue and transformative learning

The theoretical framework of our inquiry lies in the intersection of Bakhtin's dialogism (1981) and transformative learning theory (Mezirow, 1991). A number of teacher educators have examined teacher-to-teacher discussions (or talks) using diverse research foci and methods to understand teachers' learning processes (e.g., Dudley, 2013; Kosko & Herbst, 2012; Sannino, 2010). In this study, we used the Bakhtinian concept of dialogue to examine teacher-to-teacher discussions in our online course as a way to understand teachers' transformative learning processes. This theoretical approach was useful for this particular teacher education context in the following three aspects.

2.1. Designing a course as a dialogic community

First, in order to address educational issues of which teachers are not often conscious (e.g., limitations of their pedagogical practices), teachers need to uncover and examine the seriousness and relevance of those problems in their own teaching practices (Servage, 2008). This problem solving process requires teachers to challenge and transform their taken-for-granted assumptions and beliefs about effective teaching and being a good teacher. One way to transform long-held beliefs and practices, involves individuals engaging in critical reflection on a "disorienting dilemma," which refers to a situation where one's expectations and assumptions do not match (Mezirow, 1991). Kitchenham (2006), for example, demonstrates how teachers transform their perspectives during self-reflective learning to resolve conflicting teaching situations experienced while using educational technologies:

> Perspective transformations occur when people become critically aware of how and why their psychocultural assumptions are constrained, determine what to do to revise those assumptions to make meaning from given situations, and then take