Full lenght article

Knowledge building in teacher professional learning communities: Focus of meeting matters

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HIGHLIGHTS

- Knowledge building indicators in teacher PLC meetings were assessed.
- Meetings where teachers discussed assessment systems showed more knowledge building.
- Meetings where teachers discussed their instruction showed little knowledge building.
- Interactivity and inquiry stance were more evident in assessment than instruction meetings.

ARTICLE INFO

ABSTRACT

Professional learning communities (PLCs) of teachers have potential as powerful professional development contexts. However, efforts to characterize and document teacher PLCs suggest that productive learning is the exception rather than the rule. This mixed methods case study derived indicators of knowledge building discourse and examined their prevalence in nine PLC meetings among English Language Arts teachers within the same school (3 grade band teams x 3 meetings each). Analyses indicated significantly more knowledge building in meetings focused on assessment systems as compared to meetings focused on instructional practices. Implications for ways in which PLCs could foster knowledge building are discussed.

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Teacher professional learning communities (PLCs) are increasingly mentioned as important contexts for teacher professional development (DuFour, 2004; Grossman, Wineburg, & Woolworth, 2001; Hadar & Brody, 2012; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006; Vescio, Ross, & Adams, 2008). Nationally and internationally, PLCs are designed with the assumption that individual and collective pedagogical understandings are deepened through social interactions and discourse that fosters the collective construction of knowledge (Dobie & Anderson, 2015; Dooner, Mandzuk, & Clifton, 2008; Hadar & Brody, 2010; Lieberman & Miller, 2011; Putnam & Borko, 2000; Stoll et al., 2006; Wells, 2000). However, because PLCs are relatively new forums for teacher professional development, our understanding of the dynamics of productive PLCs is still limited. There is an emerging research base that addresses this issue, but it is largely limited to

science or mathematics content (e.g., van Es, 2009; Little & Horn, 2007; Sherin & Han, 2004; Zhang, Lundeberg, & Eberhardt, 2011). Far less of the research base looks at PLCs focused on literacy and language arts teaching. The current study addressed this gap by focusing on PLCs comprised of grade-bands of pre-kindergarten through sixth grade language arts teachers.

Specifically, this study examined the discourse of three grade-band teams of elementary school teachers to ascertain if and how the intended focus of the meeting and related meeting tasks played a role in supporting the collective construction of pedagogical content knowledge. The theoretical framework of the current study is grounded in prior theoretical and empirical efforts devoted to characterizing interactions and discourse associated with knowledge building and learning, whether in students or teachers. We review the conception of knowledge building per Scardamalia and Bereiter (2003) and its relation to what the research on PLCs indicates are characteristics of productive PLCs. We then present content and discourse analyses of a sample of PLC meetings for evidence of knowledge building. To preview our findings, meetings

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focused on assessment systems were associated with characteristics of knowledge building moreso than meetings focused on instructional practices.

1. Defining knowledge building

Scardamalia and Bereiter (2003) define knowledge building as, "the production and continual improvement of ideas of value to a community, through means that increase the likelihood that what the community accomplishes will be greater than the sum of individual contributions and part of broader cultural efforts" (p. 1371). Three features of knowledge building can be derived from this definition. First, knowledge building is a *collaborative* effort. All participants are valuable contributors and accountable for advancing the community's understandings rather than participating solely for their own learning. Second, ideas discussed in learning communities are *improvable*. The goal is to progress from "weak" to more robust ideas. Even if ideas only improve incrementally, the process of scrutinizing ideas can support learning and advance the shared resources of the group (Scardamalia & Bereiter, 2003, 2006; Zhang, Lundeberg et al., 2011). Finally, the ideas groups work to improve are those that are of *value* to the community, such as those that address authentic questions, challenge conceptual understandings, or lead to developing solutions to common problems (Scardamalia & Bereiter, 2003, 2006; Zhang, Hong, Scardamalia, Teo, & Morley, 2011). These features of knowledge building align with characteristics that have been observed in PLCs under certain circumstances, as detailed below.

2. Characteristics of PLCs and parallels with features of knowledge building

One key characteristic of talk in PLCs − interactivity among participants - reflects the *collaborative* feature of knowledge building. Interactivity among participants is reflected in distributed participant engagement and back and forth dialogue between participants (Crespo, 2006). Interactive talk can be contrasted with monologic talk, with the latter characterized by extensive, uninterrupted turns of talk by one speaker at a time and involving fewer group members contributing to the topic (Crespo, 2006). An abundance of literature espouses the merits of distributed participation and discussion that is more dialogic than monologic to support group learning (Nelson, Deuel, Slavit & Kennedy, 2010; Nystrand, 1997; Reznitskaya, 2012; Wells, 2000; Zhang, Lundeberg et al., 2011).

A second characteristic of talk in PLCs − the extent to which ideas are explored − reflects the *idea improvement* feature of knowledge building communities. Furthermore, what the community *values* can be inferred from the topics discussed and the related questions, concepts, and problems explored. Although the specific terminology varies, researchers of PLCs make the distinction between what Crespo (2006) labeled exploratory and expository talk (see Kinz, Lane, Gotwals, & Cisterna, 2015; Lord, 1994; Mercer, 1995; Nelson et al., 2010 for a similar distinction). Discourse that is exploratory focuses on the collective examination of ideas. Exploratory talk involves joint questioning and elaboration of ideas generated by the group and investigation of alternative ideas in discussion that is both critical and collegial (Lord, 1994; Nelson et al., 2010). It can be described as tentative, uncertain, and focused on joint revision and understanding of ideas and therefore aligned with idea improvement. In contrast, expository talk is descriptive and does not involve close inspection of ideas (Crespo, 2006). Expository talk involves narration, description, individual interpretation of events, and a lack of conferral or disagreement (Barnes, 1976; Crespo, 2006).

The review of this literature suggests that five types of discourse moves tend to be indicative of talk that is exploratory: *questioning, proposing, elaborating proposals, negotiating,* and *explaining thinking. Questioning* can serve to elicit, clarify, or expand group members' ideas (Zhang, Lundeberg et al., 2011), and in particular, questions that elicit explanations and deep forms of reasoning are associated with learning (Hmelo-Silver & Barrows, 2008). *Proposing* is suggesting ideas to the group for conferral (Sabourin & Geist, 1990), with the assumption that participants will attempt to develop a shared understanding about a conceptual issue or make a decision about a course of action. Proposals are necessary to build collective knowledge because an idea needs to be suggested in order to work together to improve it. *Elaborating proposals* involves the re-articulation of existing ideas, such as providing examples or rephrasing/revoicing a proposal. Rephrasing/revoicing has been identified as a way for group members and facilitators to invite others to weigh in on their interpretation or restructuring of the initial idea (Carroll, 2005; Zhang, Lundeberg et al., 2011). *Negotiation* involves resolving conflicts and determining the level of agreement about ideas through moves such as disagreeing, challenging existing ideas, or proposing alternative ideas. Many studies highlight negotiation moves as promoting knowledge building because such moves are evidence that group members are engaged in critical examination of ideas and working with each other to build consensus about complex topics (Achinstein, 2002; Crespo, 2006; Dobie & Anderson, 2015; Males, Otten, & Herbel-Eisenmann, 2010). *Explaining thinking* moves can involve providing rationale for a proposal (e.g., explaining *why* it is a sound idea), revealing one's assumptions about a concept, or identifying aspects of an issue that one doesn't understand. It has been theorized that explanations have the potential to benefit both the explainer and the listener, and many studies highlight a link between explaining thinking and individual or group learning outcomes, such as facilitating conceptual understanding (Chi, De Leeuw, Chiu, & LaVancher, 1994) or catalyzing the organization and retrieval of information (Fuchs et al., 1997; Rochelle et al., 2010).

These five types of moves are indicative of participants jointly exploring ideas in a tentative manner, and are thus reflective of knowledge building. They stand in contrast to moves that represent more polished, finalized talk about ideas, such as *describing*. When talk is expository, describing has been reported as a prevalent discourse move (e.g., Crespo, 2006).

Research indicates that more often than not, in teacher PLCs there is an absence of the type of interactivity and discourse that are aligned with knowledge building. Reports indicate that it is difficult for teacher groups to move beyond being merely polite to being critical (e.g., McLaughlin & Talbert, 2006; Nelson et al., 2010). For example, based on work with over 30 science teacher collaborative inquiry PLCs, Nelson et al. (2010), reported that teacher groups often avoided conflict and attributed "fault" to others. However, several studies suggest that the focus or purpose of teacher PLC meetings affects the tendency to engage in discourse aligned with knowledge building. Specifically, there was a greater likelihood of such discourse when teachers engaged in inquiry related to their discipline such as solving math problems (Crespo, 2006) or reading professional materials (Males et al., 2010) than when they focused on classroom instruction. However, Slavit and Nelson (2010) found that a focus on instructional *improvement* in teacher PLC discussions showed evidence of knowledge building. As well, lesson study, with its explicit focus on close examination of instructional practices, has been shown to be a powerful means of surfacing and increasing teachers' pedagogical content knowledge (Dudley, 2013; Lewis, Perry, & Hurd, 2009; Yarema, 2010). These studies suggest the importance of examining the focus or purpose of meetings in relation to the presence of knowledge building in PLCs.