Understanding Teachers’ Cultural Models about Technology

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Abstract: This poster draws on educational psychology, cognitive anthropology, and sociolinguistics to build a theory of teacher learning. By using a microthnographic approach to discourse analysis, I show how secondary English teachers use language and contextualization cues within a learning community to reflect their cultural models, or everyday beliefs, about technology. The analysis suggests that the implementation of educational reforms, including those associated with technology, may be dependent upon teachers’ skills, values, and cultural models.

Introduction
Professional development is a cornerstone of educational reforms that seek to improve student achievement and engagement. Moreover, it can play a critical role in developing teachers’ instructional practices in the content areas, knowledge of standards-based assessment, and innovative use of new tools and strategies (Lawless & Pellegrino, 2007). Scholars have identified five core features of effective reform-oriented professional development, which includes a content area focus, opportunities for hands-on and active learning, coherence with previous professional experiences, collective participation with colleagues, and a considerable duration of contact hours (Desimone, 2009). However, due to issues with time and cost, professional development available to teachers remains inadequate. This is particularly evident in terms of technology integration.

In this poster, I draw on educational psychology, cognitive anthropology, and sociolinguistic ethnography to build a theory of teacher learning. I then take an ethnographic approach to discourse analysis to show how teachers’ situated language within technology-focused professional development reflects their learning and sense making processes. The study was designed to address two gaps in the literature. First, it explores the role of situated language in constructing teachers’ cultural models, or everyday beliefs, about technology. Second, it examines micro-level interactions within a professional learning community to understand how teacher learning occurs in social and cultural contexts. The analysis suggests that the effectiveness of technology integration at a local level is closely tied to teachers’ cultural models.

This analysis was guided by the following research questions: How does a discourse analysis of teachers’ situated language within a professional learning community reveal their cultural models? What are English teachers’ cultural models about technology?

Research Context
This ethnographic case study took place during the 2009-2010 school year. I designed and facilitated professional learning communities at two high schools. All names of cities, schools, and participants have been changed. In this paper, I focus on the learning community at Avon High School, which is located within close proximity to a large Midwestern city in the United States. Participants in this learning community included five English teachers. Over the year, they regularly shared their own lessons, brought in examples of student work, and engaged in critical dialogue about the role of technology in the English curriculum. They were veteran English teachers who had between 16 and 27 years of teaching experience.

Methods
I collected multiple forms of data, including: 1) initial survey of teachers’ knowledge of technology, content, and pedagogy; 2) audio recordings of two semi-structured interviews with each research participant; 3) video and audio recordings of ten learning community meetings; 4) field notes of my observations within the learning communities; 5) teachers’ mid-year written reflections; and 6) artifacts, including school district policies and teachers’ lesson plans. All told, this yielded 20 hours of videotaped discussions of the learning community as well as two-hour-long interviews with each individual participant.

In this analysis, I focus on an event, which Bloome, Carter, Christian, Otto and Shuart-Faris (2005) define as “a bounded series of actions and reactions that people make in response to each other at the level of face-to-face interaction” (p. 6). Within an event, utterances are acts that are part of a series of actions and reactions. In this analysis, I broke each utterance into a line, which generally consisted of one to two clauses. The focal event for this analysis involved a discussion on the use of social networks in the English curriculum. To answer my research questions, I examined teachers’ utterances within this singular event, which encompassed 61 lines and 11 turns at talk. I began with a transcript of the event and broke it down by speaker and then by utterance. I developed three layers of analysis, which build from the micro-level to the macro-level. This process of analysis will be more fully detailed in the poster, but the guiding questions were:
1. Situated language and contextualization cues: How does the speaker use language and related contextualization cues within this utterance?
2. Social interaction: How does this utterance contribute to social interaction?
3. Cultural models: How does the speaker’s utterance reveal his or her cultural models of technology?

Findings
Quinn and Holland (1987) define cultural models as “pre-supposed, taken-for-granted models of the world that are widely shared (although not necessarily to the exclusion of other, alternative models) by the members of a society and that play an enormous role in their understanding of that world and their behavior in it” (p. 4). Within this four-minute event, teachers used language and contextualization cues in complex ways to advance the social interaction and express cultural models related to technology. By engaging in a three-layer approach to microethnographic discourse analysis, I was able to break the event into sections: 1) lines 1-13, which serve to initiate the event and introduce cultural models related to pedagogy and technology; 2) lines 14-50, which turn to cultural models on language and technology; and 3) lines 51-61, which conclude with cultural models related to learning and technology. Rebecca initiated the event when she turned our discussion from social networks to issues of teachers’ pedagogy and responsibility and stated:

1. what I’m saying is that I feel like as a teacher (.)
2. I need to teach kids how to use that (.)
3. so they won’t be >shut out from access to the information<
4. >because they lack the skill< (2)

In the poster, I will share all 61 lines and the related analysis. For this proposal, I will discuss just the first four lines, which show two competing cultural models of pedagogy. While Rebecca had no experience with social networks, she suggested in lines 1-2 that she had a responsibility as a teacher to instruct students on the function of such online spaces. In earlier interviews, Rebecca noted that many of her students were well versed in social networks, particularly with Facebook. However, Rebecca presented a cultural model of learning that was unilateral, from teachers to students. In effect, she didn’t account for her students’ prior experience with social networks or consider how she could capitalize on this knowledge within her classroom. In Lines 3-4, Rebecca added that if students do not have the technical skills to access social networks, the consequence was that they will be denied access to information. In this respect, Rebecca held a cultural model that conceptualized knowledge as a commodity that could be given or withheld by an authority figure. In contrast, critical theorists propose a cultural model of knowledge as a social construction. Depending on which cultural model a teacher applies to their pedagogy, it will shape their instructional design and how they position teachers and students in the learning environment.

Implications
The National Education Technology Plan calls for “episodic and ineffective professional development [to be] replaced by professional learning that is collaborative, coherent, and continuous” (p. 40). Learning communities embody this kind of reform-oriented professional development (Curwood, 2011). By studying discourse within a professional learning community, I identified some of the ways that teachers used situated language and contextualization cues to contribute to the social interaction and express cultural models related to technology. In this four-minute event, a three-layer approach to microethnographic discourse analysis revealed some of our cultural models: 1) Knowledge is a commodity; 2) Knowledge is a social construction; 3) Asynchronous communication is an affordance of online spaces; 4) Synchronous communication is an affordance of physical spaces; 5) Teachers must take a critical approach to technology integration; and 6) Students’ future success depends on their access to and experience with technology. These cultural models directly inform teachers’ approach to technology integration, instructional design, and assessment within the English curriculum.

References