

Video Traces: Creating Common Space between University and Public Schools for Preparing New Teachers

Amit Saxena, Reed Stevens, University of Washington, Seattle
saxena@u.washington.edu, reedstev@u.washington.edu

Abstract: The preparation of new teachers has been an enduring issue of the field of education (Handbook on Research on Teaching, 1963; 1973; 1986; 2001). The objectives of this paper are to describe the interaction among different stakeholders in teacher education facilitated by a novel technology-based approach, *Video Traces*. The analysis suggests that this is a potentially effective approach for making mutual learning across public school and university-based teacher educators more concrete, visible and compelling. In our paper, we (a) present an overview of the pedagogical philosophy that guided the design of the *Video Traces* medium, (b) describe the enduring problem in teacher education we are using *Video Traces* to address, and (c) present data and analysis from our approach in the context of North American educational system.

Theoretical framework

Tensions between views of teaching and teacher preparation as constructed in university and public school contexts constitute one of the most pervasive and enduring problems in the work of teacher education. Feiman-Nemser and Buchmann cleverly characterized this as the “two worlds problem” over two decades ago (Feiman-Nemser & Buchmann, 1985). The two worlds problem refers to the tensions between pre-service teacher preparation at the university and the in-service classroom practice. Approaches to resolving some of these tensions have involved various proposals for creating a “third space”, in which university and public school educators could join in collaborative dialogue and inquiry around teaching and learning (Goodlad, 1994; Holmes Group, 1986). In addition, there needs to be more direct and compelling evidence of learning outcomes for teachers if institutional commitments to collaboration among arts and sciences, education and school-based faculty are to be sustained over time (Teitel, 2001).

The *Video Traces* (see Figure 1) is a software medium that gives the users ability to annotate voice, pointing, and drawing to “common objects” in visual forms such as still images and audio-video files (Stevens, 2005). The *Video Traces* medium supports features such as concrete and durable records of conversations and natural modalities of looking, pointing, and talking.



Figure 1. *Video Traces* software medium

In our study, the Teacher Education Program of a major research university (PNU) in the Pacific Northwest, public schools, and *Video Traces* came together to prepare new teachers. The student teachers scan student works from their classrooms and import them in *Video Traces*. These scans and videos are called bases. Then they annotate the bases, in *Video Traces*, via a microphone connected to the computer. In addition to audio annotation, student teachers also use the pointing and drawing tools in *Video Traces* to “jointly attend” to what is being referred to in the recorded questions. This combination is called a trace. Fellow student teachers, classroom

teachers, university faculty and supervisors reviewed and responded to these traces in the same manner. In terms of digital file formats, a trace is an audio-video file combining an image or a video with a voice and pointing overlay. A trace thread is the sequence of response traces to an initial trace.

Data analysis and findings

The analysis of actions and events in *Video Traces* is framed using concepts and techniques, such as interactional sequence, from Conversation Analysis (CA) adapted to new technologies (Goodwin & Heritage, 1990; Hutchby, 2001). The data for this study are 73 traces that were created within 23 threads by participants from May 2005 to November 2005. The participants were two each of student teachers, school faculty, university faculty, and one university supervisor. The traces were exported as audio-video files and transcribed using simplified conventions of CA. The start and end points of gestural annotations were located in transcripts within parentheses. This paper briefly reports on two categories of events—traces as recycling of questions and the traces as archival resources. Due to space limitations, we have included data presentation only for the first category.

Traces as Recycling of Questions

The thread featured Maya as student teacher, Anu as co-operating teacher, Jaya as university faculty, and Lakshmi as another student teacher. A very brief data excerpt is presented in the Figure 2 below.

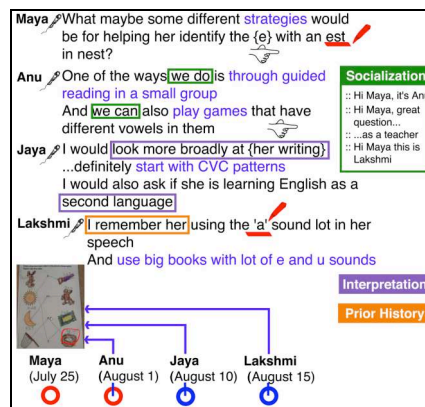


Figure 2. The figure shows a transcribed excerpt from the trace thread. The audio annotation is marked with mic icon, pointing annotation with hand icon and the drawing annotation with the red pen icon. The analysis is marked with boxes and further referenced with categories such as socialization etc. The different strategies are marked in lighter color. The bottom section shows the chronological sequence of trace thread.

Maya, in her initial trace, introduced the student and referenced the student work to the viewer by using the natural modalities of pointing, drawing and speech available in the medium. Maya described the student’s work, gave her observations, and asked about the different strategies. Anu (school based faculty) responding to Maya’s trace greeted her by name. She “thickened” Maya’s description by detailed descriptions. Anu suggested three strategies. Jaya (university faculty) complimented Maya on her question and responded with three suggestions about student assignments, classroom practices such as small group guided reading, and ESL strategies. Lakshmi (student teacher) introduced herself and reviewed Maya, Anu, and Jaya’s traces. She brought up her prior interaction history with the student as a teacher and made observations about student’s pronunciation and speech patterns. Lakshmi based her observations in Jaya’s suggestion of working on pronunciation as well as on visual representation.

The different collaborators in the teacher education process came together to interact around the student’s work as if they were in the same classroom. The analysis of the individual traces across the collection showed that the users created traces; to analyze practice around student’s works, to ask, to address content and practice specific questions, and to interpret and present hypotheses regarding literacy practices. The users took up the different suggestions and hypotheses in their practice and responded as new traces. In this manner, the users embodied traces in their classroom practice over and over again. This embodiment is defined in this study as recycling of questions.

This category of analysis relates to the “recycling of questions and consequently, of the knowledge”(Ladson-Billings, 1994). The recycling, as defined by Ladson-Billings, is situated in the discourse

between the teacher and the student in a classroom. In this study, the recycling of questions is spread asynchronously across time and space between a student teacher, her peers, and teacher educators. This recycling creates a common space around classroom activity.

Traces as Archival Resources

The thread featured Maya as student teacher, Sudha as university faculty, Anu as co-operating teacher, and Lakshmi as another student teacher. Maya started her trace with a description of classroom practice. The description was adapted from Anu's thickened description earlier in the findings section. Maya asked conceptual and procedural questions about the student's practice. She ended her trace by asking for advice and suggestions for strategies. Sudha (university faculty) introduced herself to Maya. Sudha then set up a small scenario to model possible engagement with the student in response to Maya's conceptual and procedural question. She made another suggestion of using stories as tools to understand math concepts. She supported Maya's way of engaging the student and pointed out that the student's practice is linked to the classroom practice. Lakshmi reviewed Maya and Sudha's traces. In her response, Lakshmi inferred from an earlier trace discussion between her and Sudha in a different trace thread. Her suggestions to Maya were referred from that discussion. Anu referenced Sudha's suggestion of story contexts. She stated that she would be using these ideas in her own practice and modeled a scenario for the next academic year.

The second category is informed by Shulman's advocacy of teaching in which "the principled skills and the well-studied cases are brought together in the development and formation of strategic pedagogical knowledge" (Shulman, 1986). The findings suggest that the traces can function as 'cases' to inform the routine indeterminacy of classroom practice. Within the thread, the different users reviewed and responded to previous traces. The users entered specific conversations but they also entered different kinds of conversations from their disciplinary perspectives. Within the collection, the threads act as archival resources. The users refer to specific suggestions from other threads while making their traces. There is an increased sophistication in framing questions and offering interpretations. In this manner, the threads serve as documented and referred cases of student teaching and learning.

Educational importance of the study

In our study, we have used a novel technology-based approach of *Video Traces* to bring public school-based and university-based teacher educators together in mutually beneficial and visible discussions on teaching and learning. Our analysis shows that the participants made traces that captured student learning in classrooms, analyzed those situations, noticed teaching practices, interpreted those practices in broader contexts, made hypotheses, and offered suggestions for further work in the classrooms. The traces created from this collaborative dialogue and inquiry present evidence of student teacher learning in actual classrooms and serve as documented cases. The creation of common space mediated by *Video Traces* distributes the onus of "thinking like a teacher" (Kleinfeld, 1992) and acting like a teacher collectively among the human and technological resources of the partnership. The findings from our study suggest that the technology-based approach of *Video Traces* supports novice teachers in their actual classrooms and creates a "third space" to bring university and public-school-based teacher educators together in the teacher education process.

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