

Technological Support for Designers' Reflection on Tacit Learning Processes
At Points of Social Contrasts and Comparisons

A Poster Proposal to CSCL. 97

Xiaodong Lin, Mike Sipusic, Doug Morse & Bruce Cohen

How do professional instructional designers expand their knowledge and flexibility in designing? In the workplace, instructional designers work with other specialists, but rarely work with other instructional designers. This isolation from their peers, eliminates the possibilities for social learning through observation, and constrains designers' growth to individual reflection on their own practice. While professional growth through reflective practice is ubiquitous, there are a number of known difficulties that constrain the amount of growth. Because routine expertise is tacit, it is difficult for designers to articulate the thinking that supports their routine practices. Without articulation, reflection cannot proceed. A related "constructivist" problem, the tendency to perceive current situations as variants of prior situations, acts as a filter on detecting novelty in new situations.

In this poster session, we will analyze two technologically-based mechanisms, video-tape and HyperNews that assisted professional designers in articulating their tacit knowledge about a common design problem. Through discussion, these records of individual's "design moves" became conversational artifacts for collaborative reflection. The ensuing multiple perspectives on a common design problem created many opportunities for individual designers to notice novel approaches employed by peers.

The context for this study was a graduate class in instructional design, which met over three weekends, composed of 8 professional instructional designers and corporate trainers. We first showed the designers a videotaped workplace dilemma, and asked them to specify the problem. After these problem specifications were discussed, we showed 5 video commentaries by experts who had watched the work place dilemma video. Working in pairs, designers generated instructional design solutions, while we videotaped samples of their design process. These process videos were watched and discussed. Because the designers were distributed across the state, and meet as a group infrequently, we used HyperNews as a tool to support designers' on-line discussions about their reflections on what they have learned and additional knowledge that they need to learn. HyperNews is a cross between the hypermedia of the WWW and Usenet News. A base question or news holds a list of messages on a topic, and users can reply to the base questions or browse the accumulating thread. These messages are laid out in an indented tree format that shows how the messages are related over time. Using these technologies, and frequent points of social contrast, enabled designers to (1) reflect on their own design process through observing aspects of their peers' design processes; (2) at locations of social contrast, compare different framings of the same situation; and (3) at a structured walk-through, compare predicted use of competing design with actual use by volunteers.

Over several iterations, the design objectives attempted by individual designs became progressively more ambitious. Similarly, the range of methods employed in individual designs expanded, as designers borrowed heavily from one another. Designers reported that their own understanding of their design process had expanded. And that the experience of working with other designers had changed their approach to design, and what is required to be a good designers. We will conclude by discussing the implications of this study for the design of technology rich, collaborative learning environments that support social reflection through the "opening up" of individual designer's, tacit, cognitive practices.