

Spring 2012

Computer-Monitored Problem-Solving Dialogues

Christine Warner
Valparaiso University

Melissa Butts
Valparaiso University

Dan Leighty
Valparaiso University

Follow this and additional works at: <http://scholar.valpo.edu/cus>

 Part of the [Mathematics Commons](#)

Recommended Citation

Warner, Christine; Butts, Melissa; and Leighty, Dan, "Computer-Monitored Problem-Solving Dialogues" (2012). *Celebration of Undergraduate Scholarship*. Paper 111.
<http://scholar.valpo.edu/cus/111>

This Poster Presentation is brought to you for free and open access by the Office of Sponsored and Undergraduate Research at ValpoScholar. It has been accepted for inclusion in Celebration of Undergraduate Scholarship by an authorized administrator of ValpoScholar. For more information, please contact a ValpoScholar staff member at scholar@valpo.edu.

Computer-Monitored Problem-Solving Dialogues

Christine Warner, Melissa Butts, Dan Leighty

Departmental Affiliation: Mathematics and Computer Science
College of Arts and Sciences

This project shadows the work of student groups in Math 110, a qualitative literacy class, engaged in exploratory learning exercises. An instructor monitors these groups by both walking around the room and observing group conversation at another computer. Our goal is to put this exercise online, and as a result leave the entire monitoring process up to the computer, assuming the role that the instructor traditionally assumes. Using labeling techniques to decipher meaning in dialogue of students working in groups for Math 110, we try to see how students collaborate to solve problems together. Bits of realization, conversation, and problem-solving tags are sorted out and gathered to identify the main points that are expressed during the problem solving of the two person game, Poison. Expanding upon previous research done by other students, we are able to add to bits of realization that students encounter in their work. One purpose is to explore the differences between voice-recorded dialogue and computer-mediated chat dialogue. By examining these transcripts, researchers can raise questions about what sort of content is discussed to solve a problem and prepare the computer to recognize bits or realization in students' work.

Information about the Authors:

Melissa Butts is a sophomore, math/secondary education major with a minor in theatre design. She hopes to one day be a high school mathematics teacher. She is interested in this project because it may one day help her teach her students to understand how to highlight important pieces to problem-solving situations.

Christine Warner is an actuarial science major with a statistics minor. She hopes to work as an actuary for an insurance company in the future. Christine is interested in learning how people function in group work and how effective communication plays a vital role in any group setting. Dan Leighty is a sophomore, mathematics/secondary education major. He hopes to one day be a high school mathematics teacher. He is interested in this project because, as a future teacher, it is important to know not only how individuals think but also how groups think and work toward a common goal.

Faculty Sponsor: Dr. Melissa Desjarlais

Student Contact: daniel.leighty@valpo.edu