

Using Handheld Technologies in High School Economics: A School-University Collaborative Design Project

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Rationale and Significance

Along with other subject areas in K-12 education, social studies and history are the focus of various reform initiatives. Several ideas about improving professional development for teachers inform the design of the program in which this study is situated and include: (1) using social studies standards (Michigan curriculum framework, 1996) and the *Teaching for Understanding* framework (Wiske, 1998) to design and teach units; (2) situating teachers' learning about *Teaching for Understanding* in their practice (Greeno, Collins, & Resnick, 1996); and (3) developing and studying cases about teachers' teaching (J. H. Shulman, 1992) – all in the context of a technology mediated and distributed collaborative learning environment that bridges school and university boundaries.

Research Methods, Design, and Setting

This study is a design experiment (Brown, 1992) that examines teachers' learning in the context of a six month, inquiry-oriented, and case-based, technology-mediated school/university professional development program. The intervention in this design experiment is the *Teaching for Understanding* framework (Wiske, 1998), the handheld technologies used by teachers and students, and is focused on issues-centered social studies in which students are required to define problems, actively search for and evaluate evidence, make defensible decisions, and engage in projects that impact persistent and pervasive real world issues (Evans & Saxe, 1996).

Teachers in this project will use a variant of Japanese “lesson study” research (Lewis, 2000) in the course of designing and conducting research on units that they will teach during the winter term of 2004. Lesson research is a process of instructional improvement in which teachers jointly plan, research, and discuss a specific research lesson (Lewis, 2000). The technology used in this project is the TI-83+ Silver Edition handheld computer, produced by Texas Instruments, and related software and peripheral devices.

Data analysis for this project involves the description and discussion of emergent themes and patterns from observations, interviews, discussions, and communications as well as comparative and contrastive analysis of approaches to teaching and teachers' learning throughout this project. In addition to these qualitative methods, researchers will utilize a standardized economics exam that relates to the topics addressed in the unit designed by participating teachers. Also, a Participant Perception Indicator (PPI) survey will be administered. Participants in this project include four high school teachers of varying experience, gender, and ethnicity as well as one pre-service teacher. Research will be conducted at various locations including four high school economics classrooms representing a wide socioeconomic spectrum: urban, suburban, and rural, and diverse student populations.

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