

Research Presentation Titles and Descriptions

Maura Varley:

Title: Young Latinas Speaking to Equity in Mathematics Education and Society: Understanding the Potential of Critical Mathematics Education

Description: This critical ethnographic research study seeks to document young Latinas engaging in critical mathematics and participatory action research, with implications for shifting dominant ideas about the form and goals of education. As Latina youth are marginalized from classrooms and in society where their language, culture, practices, and community are seen as "problems," and particularly in mathematics classrooms where a dominant culture is said to further exclude girls (Walkerdine, 1998), there is an exigency to understand how in fact Latina students could experience education as empowerment. A critical educational paradigm has been put forth in which the purpose is to develop critical literacy in students where they make apparent and challenge oppressive societal structures. This critical ethnographic research study seeks to gain a more nuanced understanding of how young Latinas experience and shape a critical mathematics learning environment through the facilitation and research of an all female after-school mathematics club. More specifically, researcher and student-generated data in the form of field notes, videotaped sessions, classroom observations, collection of student work and interviews offered a rich source for analysis of their practices in the learning environment, their perceptions of mathematics, themselves as learners of mathematics and as people who can make changes in their lives, communities and in the world. This understanding informs arguments for seeking social justice through mathematics education and educational research, particularly for Latina youth.

For the CEMELA School 2008, I will share and invite participation in thinking about my initial analysis structure and process.

Facilitator: Julia Aguirre

Presentation Day: Tuesday

Eugenia Vomvoridi-Ivanovic:

Title: A qualitative study of bilingual Mexican American prospective teachers' use of language and background experiences in the assistance of fifth-grade Latina/o students in mathematics.

Description: This study investigates how bilingual Mexican American prospective teachers use language and background experiences as learning resources as they assist bilingual Latina/o 5th grade students in an informal mathematics learning context. The study focuses on four prospective teachers who serve as facilitators in the Los Rayos de CEMELA after-school mathematics project. In this presentation, I will discuss preliminary data results from my ongoing data analysis, especially insights related to the prospective teachers' use of Spanish and their experiences of appropriating Spanish mathematical talk from more experienced others.

Facilitator: Ed Silver

Presentation Day: Tuesday

Jesus Acosta-Iriqui:

Title: Teachers' beliefs and practices about the teaching and learning of mathematics at an "Escuela de Calidad" in a Mexican border city.

Description: This study will explore the teaching practices and beliefs of teachers at an elementary school participating in the program Escuelas de Calidad in a border city in Sonora Mexico. The idea of working at this elementary school in Mexico evolved from a study conducted in Chihuahua, Mexico by Dr. Rick Kitchen, specialist in mathematics education at the University of New Mexico. His research consisted of comparative classroom observations of mathematics instruction in different schools. I and other CEMELA fellows collaborated in the study, visiting one of the schools and observing mathematics instruction there. We also conducted in-depth interviews with teachers and students at the school. One of the research goals is to better understand the dynamics and interactions among school administrators, teachers, students, and parents.

The goal of the proposed research study is to gain a better understanding of teachers' conceptions about the teaching and learning of mathematics. I believe that an analysis of teachers' conceptions about the teaching and learning of mathematics will help me and others understand how their own mathematical knowledge is transmitted to the students. The teachers' beliefs and practices may be influenced or shaped by their professional development or by the school context.

Facilitator: Rochelle Gutiérrez

Presentation Day: Tuesday

Edgar Romero:

Title: Everyday Mathematics and Everyday Spanish: Decomposition and the Equal Sign in Elementary Dual Language Math Instruction

Description: Thousands of Spanish-speaking children study mathematics in their native language in New Mexico. The texts are usually word by word translations of mainstream curricula, overlooking possible advantages that Spanish-speakers may have for understanding mathematics terminology. Terminology surrounding the critically important theme of decomposition of numbers is a striking case in point.

Facilitator: Miriam A. Leiva (tentative)

Presentation Day: Tuesday

Teacher Study Group (José María Menéndez Gómez, Laura Kondek McLeman, Barbara Trujillo, Sandra Musanti):

Title: "Utilizing a mathematical task with teachers of Latino/a students: A collaborative cross-site study"

Description: Our paper will report on methodological aspects of the cross-site collaboration as we attempted to investigate, via working on a common geometry task, (a) issues of language and culture that teachers (from two teacher study groups) grapple with and (b) how teachers adapt

instruction to meet the language and culture needs of their students. We will discuss the tools (videos, interviews), the approach (grounded theory), and our process of becoming a community of researchers.

Facilitator: Judit Moschkovich

Presentation Day: Thursday

Mary Marshall:

Title: "Communicating Mathematical Thinking During Problem Solving: The Mathematical Discourse of Eight Spanish-Speaking Second Graders"

Description: This project explores the mathematical thinking of second grade students as they attempt to solve a variety of CGI type word problems. The study is theoretically based in both Cognitively Guided Instruction (Carpenter et al., 1999) and sociocultural theory. Students' communication is expanded to include what they say, their gestures, their drawings, and the tools they choose to solve the problems. Data collected during individual interviews completes a 3-year longitudinal study that began with these students in kindergarten. During the course of this study students have been encouraged to explain their thinking, their solutions, and to evaluate the problems and their own solution methods.

Facilitator: Martha Allexaht-Snider

Presentation Day: Thursday

Bill Zahner:

Title: The Role of Intellectual Authority During Peer Group Discussions in Middle School Mathematics

Description: This presentation will report on my analysis of the "role" of intellectual authority in a group mathematics discussion among middle school students. My primary argument will be that the role of authority was created and reified in the students' discussions. Simultaneously, acting as, or being constructed as an "intellectual authority" mediated the students' use of particular discursive moves. I will close by considering both theoretical and pedagogical implications of this reflexive relationship between intellectual authority and discourse.

Facilitator: Virginia Horak

Presentation Day: Thursday

Student learning group (Suzanne Weinberg, Philip Kisunzu, Heather Cavell, Kathleen Ross):

Title: "If I Clarify the Words in the Task, Can You Do the Math Problem?"

Description: For a pilot study, students in grades 3 and 6 were given NAEP and NAEP-like tasks to solve in four different formats: the task was in English with no help given, the task was in both English and Spanish with no help given, the task was given in English and students could ask questions, and the task was given in English and Spanish and students could ask questions. Data is in the process of being coded; preliminary results will be shared.

Facilitator: Lena Licón Khisty (*tentative*)

Presentation Day: Thursday

