

**DISCUSSION GROUP**  
**TRANSNATIONAL AND BORDERLAND RESEARCH STUDIES**  
**IN MATHEMATICS EDUCATION**

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*This Discussion Group will focus on transnational and borderland research studies across sending and receiving communities in Mexico and the U.S to move transnational research agendas forward. Participants will consider multiple aspects of children's experiences with mathematics, including curriculum, classroom participation structures, mathematical reasoning and discourse (both in and out of school), and parents' perceptions and beliefs about mathematics instruction.*

**Focus and Aims of the Discussion Group**

During this Discussion Group, researchers from several universities will present and discuss summaries of their current research projects examining mathematics curriculum and instruction in both Mexican and U.S. schools, out of school mathematical activities in both countries, and Latino parent beliefs about mathematics instruction. Through these discussions we hope to bring together researchers on both sides of the border, to foster and support an interest in pursuing these issues further, and to create a group of researchers who will work on these topics by organizing a Working Group around this theme for subsequent meetings.

For the past several decades there has been a large influx of immigrants in the United States, particularly from Asia and Latin America. These immigrants are a heterogeneous group that challenges simple generalizations. They include "highly educated, highly skilled workers... and large numbers of poorly schooled, semiskilled, or unskilled workers, many of whom are in the United States without proper documentation" (Suárez-Orozco, 2001, p. 350-1). According to the U.S. Census Bureau (March, 2000), over 50% of all immigrants in the U.S. are from a Latin American country, and the majority of these immigrants are from Mexico. Across the U.S.,

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significant numbers of immigrant children from Latin America, particularly from Mexico, are entering U.S. classrooms. Needless to say, mathematics teachers in the U.S. are struggling to understand and meet the needs of these students.

Transnational and borderland research studies across sending and receiving communities in Mexico and the U.S. are important to pursue for several reasons. First, many children experience the transition between Mexican and U.S. mathematics classrooms as disruptions in their mathematics learning trajectories. It is crucial to examine this transition in order to be able to better support recent immigrant children in learning mathematics in the U.S. (Abreu, Bishop, & Presmeg, 2002). Second, many families and children cross these borders more than once in their lives and belong to communities on both sides of the national border, so that their lived experience is not neatly separated into “here” and “there” (Suárez-Orozco & Suárez-Orozco, 2001). Therefore, it is important to examine the mathematical aspects of this population’s experiences across two countries, rather than separately in each country (Civil & Andrade, 2002). Third, it is important to understand immigrant parents’ perceptions of their children’s educational experiences in both Mexico and the U.S. As Suárez-Orozco & Suárez-Orozco (2001) write, “immigrant parents walk a tightrope; they encourage their children to develop the competencies necessary to function in the new culture, all the while maintaining the traditions and (in many cases) language of home” (p. 89). This tightrope feeling extends to the mathematics education of their children, as parents try to make sense of approaches to mathematics teaching that are often different from what they were expecting or had experienced themselves. We argue that how parents perceive and value these different approaches may affect their children’s learning opportunities (Abreu & Cline, 2005; Bratton, Quintos, & Civil, 2004; Civil, Planas, & Quintos, 2005; O’Toole & Abreu, 2005).

The discussion group will consider multiple aspects of children’s experiences with mathematics, including curriculum, classroom participation structures, mathematical reasoning and discourse (both in and out-of school), and parents’ perceptions and beliefs about mathematics instruction. The aim of this Discussion Group is to present and discuss several research projects that involve transnational and borderland comparisons in order to develop new research questions, refine data analyses, and move transnational research agendas forward. Some of the research questions that Discussion Group panelists plan to address include:

- 1) How do Mexican immigrant parents in the U.S. view the mathematics teaching and learning that their children are experiencing in the receiving communities in the U.S., particularly in relation to their experiences in classrooms in sending communities in Mexico?
- 2) How are mathematics classroom participation structures in receiving communities in the U.S. and in sending communities in Mexico alike and how do they differ?
- 3) How do mathematics curricula and instruction in sending communities in Mexico and receiving communities in the U.S. compare with regards to depth (over mere coverage), analytic reasoning (over mere memorization), the construction of value (over doing tasks as ends in themselves), and engagement in learning?
- 4) How are teachers’ views on the practice of teaching, especially with respect to opportunities to learn from each other, similar and different in Mexico and the U.S.?

### **Discussion Group Goals**

The central goals of the Discussion Group are to:

- 1) Develop a shared understanding of the research questions, issues, challenges, and contributions that transnational research studies can make to research in mathematics education;
- 2) Develop a plan for supporting further connections among transnational projects in the future.

During the two sessions, participants will examine and discuss the design of several transnational research studies, analyze sample data collected in at least one of these studies, and discuss future plans for the Group. These activities are intended to support participants in a) clarifying research questions, b) refining research tools, methods, and analyses, c) exploring connections among different projects and studies, and d) discussing further transnational collaborations and research on learning and teaching mathematics across the U.S./Mexico border.

The planned activities will support these goals in several ways and be grounded in discussions of sample research designs, data sampling, and sample curricula. The anticipated follow-up activities for this Discussion Group include planning for a continuation of the Group as a Working Group for PME-NA 2007 and at PME-International in 2008 and ultimately organizing a collaborative writing project on this topic.

### **Overview of Proposed Discussion Group Sessions**

#### *Session 1:*

- 1) Introduction and overview of the Discussion Group.
- 2) Brief (10 minutes each) presentations by panel members providing overviews of research projects with specific examples of how researchers have designed transnational studies. The purpose for these short presentations is to provide examples of transnational research projects and to summarize several different studies in a structured way.
- 3) In small groups, participants will analyze and discuss sample data from at least one of the studies presented. This will give participants an opportunity to share their own experiences in designing research studies, collecting data, and analyzing data.
- 4) Distribution of one or two readings for the next session (e.g., Abreu & Cline, 2005; Civil, Planas, & Quintos, 2005; Padilla & Gonzalez, 2001).

#### *Session 2:*

- 1) Discussion in small groups of the selected reading(s).
- 2) Brief (10 minutes each) presentations by the discussants that highlight key ideas using the questions listed below as a guideline.
- 3) Discussion in small groups in which participants have opportunities to both talk about panelists' responses to questions above and frame new questions for panelists.
- 4) Whole group discussion: synthesis of main ideas and future directions.

#### ***Suggested questions to be addressed by Discussion Group Presenters across the two sessions:***

- 1) What theories and theoretical frameworks have informed the design of your research project(s)?
- 2) How might your work inform theory in mathematics learning and teaching? How can transnational comparisons expand our theoretical lenses?
- 3) What issues and challenges have you faced in designing transnational studies?

- 4) How have you approached defining the research questions for transnational studies?
- 5) How have you approached data analysis for transnational studies?
- 6) What specific comparisons have you focused on and why?
- 7) What aspects of your research do you expect will be most useful to informing practice (curriculum development, teacher professional development, work with parents, etc.)?
- 8) How might your work inform not only instructional practices for this population but also instructional practices for other populations?
- 9) Which aspects of transnational studies do you find most puzzling? Most useful? Most misunderstood?
- 10) How might other researchers pursue transnational research projects and what can they learn from the work done so far?

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