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Research Ideas:
"Learning Mathematics in a Classroom of Inquiry"

Not until I began observing math classroom teaching throughout California, as the evaluator for an NSF K-12 math staff development project did I begin to realize how differently I orchestrate my classroom. Most of the time I do not present information in a lecture, followed by questions of me, and class practice problems. Instead, my students in groups or by themselves and then come to the board and present their ideas/work on either homework, or group problems, explain their thinking. They then answer questions or further discuss the situation posed by their peers or extension questions posed by me.

Questions to think about include:

- How does this come about?
- Aren't teenagers especially concerned about being *embarrassed* if their answers are incorrect and therefore why would they show their peers their ideas?
- Is there a problem having *wrong answers* put up on the board?
- Does this mean that the teacher is *not in charge* of the learning?
- What kind of *trust* must be established in order for students to be active participants in this kind of classroom?
- What are the necessary steps needed to establish this kind of classroom climate? How, when, and how often are they used?
- How closely related to real life and work situations is this kind of climate?
- How does this kind of learning impact other educational settings, i.e. other subject classes, college classes, etc?

Research tools:

- Look at classroom videos, especially at the start of the school year.
- Develop questionnaires or oral interviews for students in IMP 4 or the other classes at the end of the year.
- Search for research on student knowledge and embarrassment, classroom climate, and student learning.
- Observe college classes and work situations.