

1046-97-1545

**Stephanie R Nichols\*** ([stephanie.nichols@anokaramsey.edu](mailto:stephanie.nichols@anokaramsey.edu)), Anoka-Ramsey Community College, Mathematics Department, 300 Spirit River Drive, Cambridge, MN 55008.

*Student-to-Student Discussions: The Roles of the Instructor and Students in Discussions in an Inquiry-Oriented Transition to Proof Course.*

This study of student-to-student discussions focuses on an inquiry-oriented transition to proof course at a large southern university. Mathematical proof is essential to a strong mathematics education but very often students complete their mathematics studies with limited abilities to construct and validate mathematical proofs. Research and learning theory claim that participation in mathematical discourse provides opportunities for understanding. Although this link has been established, there is very little research on the role of students and the instructor during discussions on student-generated proofs at the undergraduate level. This research analyzes the types of discussions that occurred in an inquiry-oriented undergraduate mathematics course in which proof was the main content. These discussions fell along a continuum based on the level of student interaction. As a result of this research, the four main discussion types that were present in this course have been described in detail with a focus on the roles of the instructor and the students. In addition, an analysis of the types of discussions relative to the difficulty of the content revealed that students can and do talk about difficult content when given the opportunity. (Received September 16, 2008)