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This presentation will focus on undergraduate students' self-reported gains in college mathematics courses and how these relate to the use of inquiry-based learning (IBL) methods in their courses. Students' experiences will be reported against the development of their beliefs, motivation and strategies for learning and solving mathematical problems. Our pre- and post- survey data from over 30 courses on four campuses showed that students found IBL instructional practices beneficial and reported cognitive, affective and social gains that differed from those reported by students in comparative (non-IBL) mathematics sections. Clear positive correlations link students' self-reported learning gains with their experiences of instructional practices and with classroom practices observed by external observers. Positive changes from pre- to post-surveys in beliefs, motivation and strategies indicate the positive impact of IBL teaching methods on students' perceptions and practices in studying college mathematics. The nature and extent of these impacts vary by student groups and also reflect variation in instructor styles of implementing inquiry-based learning methods, as measured in classroom observation data. (Received September 22, 2009)