IMPLEMENTATION OF INQUIRY-BASED PEDAGOGY SIGNIFICANTLY IMPROVES MIDDLE SCHOOL STUDENT ACHIEVEMENT

Presenters: John C. Mayer and William O. Bond
University of Alabama at Birmingham

Abstract

The Greater Birmingham Mathematics Partnership teaches mathematics courses for teachers modeling inquiry-based pedagogy. Students whose teachers provided a high level of implementation of GBMP pedagogy showed significantly more gains statistically in student achievement in mathematics on the SAT-10 than students whose teachers provided a moderate or low level of GBMP inquiry-based instruction. These findings were consistent across diverse school districts and grade levels.

Figure 1 shows the results from grades 5 to 6 and Figure 2 shows the results combining all targeted grades (5-8).

Figure 1

Student Achievement by Implementation Level: Grade 5-6

Figure 2

Student Achievement by Implementation Level: All Grades

This research is supported by the National Science Foundation, Math/Science Partnership Program, through a $10 million award to the Greater Birmingham Mathematics Partnership (GBMP). GBMP is a targeted partnership among 9 school districts in the Birmingham area with total student enrollment over 85,000, the University of Alabama at Birmingham, Birmingham Southern College, and the Mathematics Education Collaborative of Bellingham, WA. Our research and professional development is targeted at middle school grades (5-8), though our project involves professional development for in-service teachers in grades K-20, as well as pre-service teachers at UAB and BSC.