

MIDDLE LEVEL PROFESSIONAL DEVELOPMENT: TRANSFORMING THE MATHEMATICS CLASSROOM?

**Presented by Donna H. Foss
Department of Mathematics
University of Central Arkansas**

The objectives of the study were to identify the features of an effective professional development (PD) project through the analysis of the observations of the middle level mathematics teachers to determine the extent to which the project goals were accomplished. The Middle School Mathematics Academy was a three-year professional development project that included components encouraged by previous research: a) longitudinal rather than short one-time workshop, b) mentors to sustain support, c) emphasis on pedagogical and mathematical content knowledge, d) research-based delivery strategies, and e) standards-based curriculum. In addition to quantitative data on content knowledge, the teachers were asked to keep reflective journals and allow classroom observations of their teaching by a third party (not their mentor). This paper focuses on the teachers' instructional behavior in their actual classrooms.

The Academy led teachers to construct knowledge for themselves, adopt new teaching philosophies, and develop a repertoire of instructional strategies. The results also include that the teachers' conceptions of mathematics teaching were generally in line with the goals of the PD project; that is, realistic applications and problem solving were emphasized in their classrooms instead of just learning procedures, concepts were understood instead of just memorized as rules, and their students were exploring concepts instead of just listening to teacher lectures. The results suggest some components of this project should be considered for future PD: 1) strengthening teachers' mathematical content knowledge, 2) building proficiency in the use of effective teaching strategies, 3) developing mentor relationships between teachers and university faculty, and 4) supporting teachers in the selection and implementation of reform curricula.