

**Meeting:** 1003, Atlanta, Georgia, MAA CP O1, MAA Session on Teaching and Assessing Problem Solving

1003-O1-497      **Howard D. McInvale\*** (ah2499@usma.edu), West Point, NY 10996. *Assessing the Effectiveness of a Problem-Solving Math Curriculum.*

This paper describes a 2003-2004 study to assess the effectiveness of a problem-solving math curriculum in the Department of Mathematical Sciences at the United States Military Academy at West Point. In this pilot program, modeling and problem-solving using technology was the central focus. Traditional math techniques were tools, applied as needed, in the modeling/problem-solving process. The impact of the pilot math course was assessed by examining cadets' scores on concurrent general chemistry course exams for two semesters. Strategic cooperation between the USMA Math and Chemistry Departments provided for course exam questions that easily differentiated cadet performance on single concept, mechanical questions versus multi-concept, problem-solving questions. Quantitative analysis was performed on this data to provide effective comparisons between the two populations. This study also included a qualitative assessment on the effectiveness of the problem-solving math curriculum. Additionally, written surveys and a focus group were conducted with pilot program cadets toward the end of their second semester to provide evidence of any impacts of the new curriculum on student performance. Results from this problem-solving assessment are also presented. (Received September 17, 2004)