

Meeting: 1003, Atlanta, Georgia, MAA CP G1, MAA Session on Drawing on Our Students' Thinking to Improve the Mathematical Education of Teachers

1003-G1-802 **Matthew S Winsor*** (mwinsor@utep.edu), Dept. of Mathematical Sciences, UTEP, 500 W. University Ave., El Paso, TX 79968-0514. *Using students' thinking in a capstone course for secondary preservice mathematics teachers.* Preliminary report.

This paper will describe a capstone course for secondary preservice teachers, as recommended by CBMS, where students' thinking and understanding determine what is taught. Using students understanding to inform teaching is found in the method of teaching employed in the capstone course. Many of the mathematical activities in the capstone course require students to find and justify solutions to challenging mathematics problems. As students justify their solution methods, their mathematical understanding becomes apparent. The paper will provide examples of activities used in the capstone course that encourage student reasoning and help the professor have a picture of what students understand mathematically. Another tool that is used in the capstone course is a weekly learning journal. In the weekly learning journal, students express what they have learned during the past week. Students are encouraged to describe in detail what they understand as well as what they do not understand. Because only the professor reads journals, students feel more comfortable expressing what they do and do not understand. The learning journals also allow the professor to vary the pace of teaching as necessary. (Received September 29, 2004)