1046-R1-812   **Betsy Darken*** (`betsy-darken@utc.edu`), Mathematics Department # 6956, University of Tennessee at Chattanooga, 615 McCallie Ave., Chattanooga, TN 37403. *Mathematicians vs. Future K-8 Teachers: Is Real Communication Possible? Is Deep Learning Achievable?*

Effective specialized mathematics content courses for future teachers are critically important for improving K-8 mathematics education in the United States. However, there are major problems confronting mathematicians who dare to teach such courses. I will discuss these problems using information obtained from mathematics education research as well as personal experience. In particular I will examine counterproductive assumptions made by both teachers and students, problems related to students' weak backgrounds, gaping gaps in communication, the difficulties inherent in breaking the vicious cycle of mediocre education, issues connected to teaching students how to think, quandaries posed by students' poor attitudes, and ways to deal with the shock of discovering the apparent absence of mathematical understanding among many of your students. Finally I will present research data on a success story, including years' worth of pretest-posttest data that reveal how much students can learn in a single mathematics content course, including gains in factual and procedural knowledge, conceptual understanding, and problem-solving ability. (Received September 11, 2008)