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Betsy Darken* (betsy-darken@utc.edu), Mathematics Department # 6956, University of Tennessee at Chattanooga, 615 McCallie Ave., Chattanooga, TN 37403. *Comparing the K-8 Mathematical Content Knowledge of Future Teachers to College Algebra and Calculus Students: Results of a Pretest-Posttest Study.*

What is the fraction form of 33%? What is wrong with dividing by zero? This presentation addresses college students knowledge of these and other questions related to elementary and middle school mathematics. It includes the results of a pretest-posttest study of the mathematical content knowledge of future K-8 teachers, including comparisons with college algebra and calculus students. Items on the evaluation instrument ranged from basic facts and procedures to questions addressing conceptual understanding. Student performance on most questions was low, with most pretest results for future teachers similar to results for college algebra and calculus students. The posttest performance of future teachers showed major improvements on most questions. These results indicate that college students do not have a firm grasp of many basic facts, much less a significant understanding of the fundamental principles underlying K-8 mathematics. The posttest results provide support for the recommendation made in *The Mathematical Education of Teachers* that special courses are needed for future teachers. These results also provide evidence regarding mathematical weaknesses that need to be addressed in these specialized courses. (Received September 08, 2006)