

Meeting: 1003, Atlanta, Georgia, MAA CP K1, MAA Session on Countering “I Can’t Do Math”: Strategies for Teaching Under-Prepared, Math-Anxious Students

1003-K1-166 **Dale Winter*** (amanitav@umich.edu), 2074 East Hall, Department of Mathematics, University of Michigan, Ann Arbor, MI 48109-1109, and **Matt DeLong** (mtdelong@tayloru.edu), 236 W. Reade Ave., Upland, IN 46989. *Teaching and assessing introductory mathematics with explicit student learning objectives.*

We will describe a research-based approach to teaching and assessment for introductory mathematics utilizing student-learning objectives (SLOs) that have a triadic structure incorporating the mathematics to be learned, the conditions under which mathematical operations and reasoning will be performed, and the standards to which the students will be held. A source of anxiety for students is the risk inherent in assessments when the conditions, nature and standards of mathematical performance and reasoning have not been meaningfully described to them. The triadic structure of SLOs provide these students with the information that they need in order to feel that they are in control of their mathematical learning and to avoid the anxiety-provoking perception of uncontrollable risk. We will present evidence to suggest that the use and communication of SLOs enhance student performance, particularly among mathematically under-prepared students. We will list other benefits of teaching using SLOs, and we will refer to relevant studies from the educational literature. Finally, we will give examples of SLOs from introductory courses and describe an explicit algorithm that can be used to create SLOs from existing descriptions of the mathematical content of a course. (Received August 14, 2004)