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**Jerome S. Epstein\*** (jepstein@poly.edu), Mathematics Department, Polytechnic University, 6 Metrotech Center, Brooklyn, NY 11201. *The Calculus Concept Inventory, Validation and Analysis of Results Correlated with Teaching Methodology.*

Under NSF support, a new test instrument has been developed to assess student qualitative, conceptual understanding of the most basic principles of differential calculus and functions. It is called the "Calculus Concept Inventory (CCI)", and is patterned after the "Force Concept Inventory (FCI)" and its successors in physics. It has undergone extensive development, testing, and validation and shows good characteristics. The FCI dramatically distinguishes between standard lecture approaches and Interactive-Engagement approaches to teaching. It is essential to make any progress in resolution of the "math wars" that a scientific means of analyzing what works and what does not be provided. This talk will report on those results with the CCI, as well as discussing the validation studies of the test. The FCI has led to a considerable revolution in teaching in an ever growing number of physics departments, and there are now similar concept tests in Biology, Chemistry, Astronomy, and more advanced areas of physics. The CCI is the first explicitly on this model in mathematics. (Received September 11, 2006)