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Jerome S. Epstein* (jerepst@att.net), Mathematics Dept., 6 Metrotech Center, Brooklyn, NY 11201. *Development of a Calculus Concept Inventory (CCI)*. Preliminary report.

Recently we see progress in Physics Ed. Research, so there is now wide agreement on measurement of outcomes, allowing non-traditional programs to document value based on Ed. research. The “Force Concept Inventory” (FCI) makes this possible. The test measures deep concept understanding of basics without “symbol-pushing”—what most faculty think students have mastered, but which they have not. It makes it undeniable that months of lecture leave no improved understanding. This leads to an agreed on measure of improvement—the “normalized gain” of R. Hake—independent of knowledge at entry, substantially independent of faculty or school, but strongly dependent on teaching methodology—an essential tool in documenting supposed improvements, not requiring anecdotal, subjective interpretation. An equivalent for Calculus is needed. Faculty at Polytechnic are working on a test called “Calculus Concept Inventory” (CCI). A calculus program, using good methodology, can be pressured to go back to traditional methods, due to inability to document that new methods are better. It is this that a CCI addresses. We show a draft of a CCI, and results from test sections in Calculus. Feedback on the test is sought, and other schools willing to pilot test in their basic calculus sequence. (Received September 14, 2000)