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**Guadalupe I Lozano\*** ([guada@math.arizona.edu](mailto:guada@math.arizona.edu)). *The impact of instructional practices on conceptual calculus learning: what can analyzing item-bias tell us?* Preliminary report.

The Calculus Concept Inventory (CCI) is a fairly well-known instrument used to measure undergraduates' conceptual knowledge of calculus at universities in the US and abroad. Since its creation, a number of studies have sought evidence that interactive-engaged (IE) classroom practices, that is, particular flipped-classroom practices believed to foster the conceptual knowledge the CCI measures, are indeed positively associated with larger knowledge gains in the CCI. Yet, measuring instructional practices and quantifying their potential association with conceptual knowledge, are difficult tasks. For example, methods for assessing instructional practices (such as self-reporting or dichotomous binning) are often unreliable and/or inaccurate. My work aims to indirectly assess the impact of IE instruction on conceptual calculus learning by analyzing item-bias. The question explored is whether or not CCI-items appear to function differentially in (are biased in favor of) undergraduate populations uniformly taught using IE methods versus parallel non-IE undergraduate groups. Preliminary results comparing CCI performance of two large cohorts of US undergraduates (using Item-Response Theory based Differential Item Functioning) will be presented and discussed. (Received September 14, 2014)