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Ileana Vasu* (ivasu@hcc.edu), PO Box 33, North Hatfield, MA 01066. *Multiple Representations of the Enacted Fundamental Theorem of Calculus, Student Understanding, and Gender.*

Multiple representations of the Fundamental Theorem of Calculus (FTC) are deemed essential to creating mathematical habits of mind, but not all classroom instruction includes them. This study articulates the relationship between college students' experience with multiple representations of the FTC in the curriculum and their use of multiple representations, with a particular attention to gender. The effect of gender on the relationship between the use of multiple representations in the FTC curriculum and student understanding is examined. Results suggest that meaningful use of multiple representations in an active learning environment helps support a fuller understanding of the FTC. The relationship is stronger for female students. A mixed methods design is used, which includes lesson observations at three colleges, classroom assessments, and semi-structured think-aloud interviews with nine students – three from each college – as they problem-solve around the FTC. The study contributes to the existing literature on Calculus education by providing a more complete picture of the ways in which an enacted college curriculum that includes multiple representations of the FTC supports deeper learning and understanding of Calculus for all students. (Received September 23, 2018)