

Abstract Submitted
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Using a psychometric lens to examine gender differences on the FCI REBECCA LINDELL, Purdue University, West Lafayette, IN, ALEXIS PAK, Florida International University, Miami, FL, JOHN STEWART, West Virginia State University, , ADRIENNE TRAXLER, Wright State University; Dayton, OH — Multiple research studies show that there appears to be an inherent difference between male and female students' performance on the Force Concept Inventory (FCI). Unlike these studies, we chose to create two different samples, one with only female students and the other with only male students, to reduce the effects of the gender-imbalance inherent in a single sample of all physics students. Using a psychometric lens, we evaluate the differences between the male and female students' performance on the FCI. We utilized classical test theory to flag 13 items on the FCI that were poorly functioning for female students. Notably, most of these items were not flagged when the dataset was aggregated across genders. In the next stage of the research, we utilized Item Response Theory (IRT) to discover if the remaining 17 items on the FCI are also poorly functioning for female students. By eliminating the poorly functioning items on the FCI, we further examined the gender difference of the Force Concept Inventory.

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