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# Assessing affective contributions to gender inequalities in introductory physics courses

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Across several years of Physics 100 and Physics 101, two large introductory physics courses at UBC, a consistent pattern has emerged: On exams and diagnostic tests for nearly 3000 students, female students underperform relative to their male peers. The existence of this performance gap is consistent with the science education literature. However, a focus on performance may be missing important details. Recent research has shown that affective outcomes—such as self-efficacy and belonging—may also suffer gender gaps and that differences in these may mediate learning. Here, we explore the gender inequalities that exist in our introductory physics course in both the cognitive and affective domains. Incoming knowledge was measured with the Force Concept Inventory (FCI), outgoing performance was measured with the FCI and the course exam, and we adapted survey tools to measure student self-efficacy and level of test anxiety. We report the inequalities that exist and analyze correlations between them to understand what the causes within our courses might be. The ultimate goal is to suggest interventions that reduce the gender gap and create a more equitable classroom for all.

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