

The Effect of Physics Identity and Conceptual Understanding on Physics Career Choice

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Two approaches have been taken historically to study the issue of persistence in physics: to improve student affect (e.g. interest, motivation) and facilitate conceptual understanding (e.g. physics knowledge). Initially, much of the focus of physics education research was on conceptual understanding, often to the detriment of student affect. More recently, research has shifted focus towards studying student affect and in particular, physics identity. However, very little research addresses the simultaneous effects of physics identity and conceptual understanding. This research attempts to bridge the gap by examining how conceptual understanding and students' physics identity impacts students' decision to remain in the field of physics. A Structural Equation Model (SEM), built from pre/post survey data collected from 1700 students enrolled in introductory physics courses across the country, revealed that student recognition and interest (dimensions of physics identity) were key factors in determining persistence in physics while conceptual understanding played no significant role.