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Evidence of learning progressions on mechanics concepts prompt for students in algebra-based freshman Physics course MILIJANA SUSKAVCEVIC, REBECCA FORREST, MILENA KELLER-MARGULIS, WALLACE DOMINEY, University of Houston — Could a physics conceptual question, administered as a simple writing prompt, serve as a diagnostic tool in predicting student performance on a more general, comprehensive exam in physics? In this study we describe the preliminary technical adequacy of a physics writing task and show the evidence of learning progressions in the understanding of mechanics concepts by students enrolled in algebra-based college freshman physics course. Scoring of student performance on the physics prompt focused on assessing the quantity and quality of writing that reflects students' accurate understanding of physics concepts addressed in the prompt. Data analysis included descriptive statistics to understand typical performance on the prompt as well as correlations to determine validity estimates for performance on the given physics prompt as it relates to exam performance.

Milijana Suskavcevic
University of Houston

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