

Using Discrepant Events to Teach the Center of Mass: A Structured Inquiry Approach with the 5E Model

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A discrepant event is a demonstration or phenomenon that produces an unexpected outcome, for example, an object that appears to be rolling uphill. The purpose of this research paper is to study the effect of such phenomena on the learning process, to determine whether they can improve students' understanding of a certain concept.

In this study, the learning subject proposed is the center of mass in Secondary Education. Using the setup provided, students are called to complete two worksheets, designed according to the 5E educational model, with each activity corresponding to one of five phases: Engage, Explore, Explain, Elaborate, and Evaluate. They are also called to answer pre- and post-tests, which aim to evaluate their understanding of the concept before and after the learning process. The entire teaching module follows the guidelines of Structured Inquiry, where students experiment on the provided setup and collect data. In the end, they are asked to make appropriate conclusions based solely on the results of their investigation.

Keywords: Inquiry, Discrepant events, 5E model, Secondary Education

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