Abstract Submitted
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Applying the Socratic Method to Physics Education[1] ED CORCORAN, GAY STEWART, University of Arkansas — We have restructured University Physics I and II in accordance with methods that PER has shown to be effective, including a more interactive discussion- and activity-based curriculum based on the premise that developing understanding requires an interactive process in which students have the opportunity to talk through and think through ideas with both other students and the teacher. Studies have shown that in classes implementing this approach to teaching as compared to classes using a traditional approach, students have significantly higher gains on the Force Concept Inventory (FCI). This has been true in UPI. However, UPI FCI results seem to suggest that there is a significant conceptual hole in students' understanding of Newton's Second Law. Two labs in UPI which teach Newton's Second Law will be redesigned replacing more activity with students as a group talking through, thinking through, and answering conceptual questions asked by the TA. The results will be measured by comparing FCI results to those from previous semesters, coupled with interviews. The results will be analyzed, and we will attempt to understand why gains were or were not made.

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