

COMPILATION: FCI scores stay fixed, in reform instruction

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Roger Wholly writes:

If you teach to the FCI you get great results! Disprove that!

Aside from the fact that the purpose of any introductory physics course should include ensuring that students gain a solid conceptual understanding of Newton's Laws and how they apply in everyday situations, please see the following article.

"Do they stay fixed?" G. E. Francis, J. P. Adams and E. J. Noonan, *The Physics Teacher*, Vol. 36, pp. 488-490 (1998).

The authors gave the FCI to students who had completed an interactive-engagement mechanics course (using Univ. of Washington's *Tutorials in Introductory Physics*). These scores were compared to the same students' post-test FCI scores from when they completed the course (some more than three years prior to the re-test).

I quote from the final two paragraphs:

The data clearly indicate little decline over the several years following instruction. From this we conclude that to a large extent, "they stay fixed."

Our data strongly support the claim that some forms of instruction (but not necessarily all) do achieve fundamental shifts in students' conceptual frameworks. This suggests that high scores cannot be simply dismissed as resulting from "training for the test."