Title: Impact of Informed Course Design and Data-Driven Course Improvement on Student Learning

Keywords:
- course design
- best practice
- active learning
- cognitive domain
- affective domain
- design
- mastery teaching
- learning styles
- example design
- learning objectives

Abstract:
Can the impact of improved teaching practice (pedagogical change) be measured? The author presents results from a 17 year study of a second mass and energy balances course where the impact of teaching on cognitive change is dramatic – and at the same time insufficient. The effects of teaching and examination design on student test performance are contrasted with observations of cognitive domain behaviors, long term affective domain impact, student admission averages, and instructor workload and satisfaction in teaching large classes. The use of industrial best practice standards as a teaching and learning tool is discussed. The main conclusion is that cognitive domain changes may not be measurable in the short term, but they can be very significant over a long period of continuous improvement. A case is made for identifying courses which require advanced teaching skills (mastery courses), and mentoring those courses through various generations of instructor growth and development.

Time: Jan 31, 19:54 GMT

Bidding and assignment information

Assigned to: nobody
Conflict of interest: nobody
Bid: yes: none

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