

Title: Confessions of a Converted Lecturer

Date: Nov 30, 2010 07:00 PM

URL: <http://pirsa.org/10110081>

Abstract: I thought I was a good teacher until I discovered my students were just memorizing information rather than learning to understand the material. Who was to blame? The students? The material? I will explain how I came to the agonizing conclusion that the culprit was neither of these. It was my teaching that caused students to fail! I will show how I have adjusted my approach to teaching and how it has improved my students' performance significantly.

Confessions of a converted lecturer





My message

shift focus from “teaching” to helping students learn

Outline

- Education

Outline

- Education
- Peer Instruction

Outline

- Education
- Peer Instruction
- Results

Education

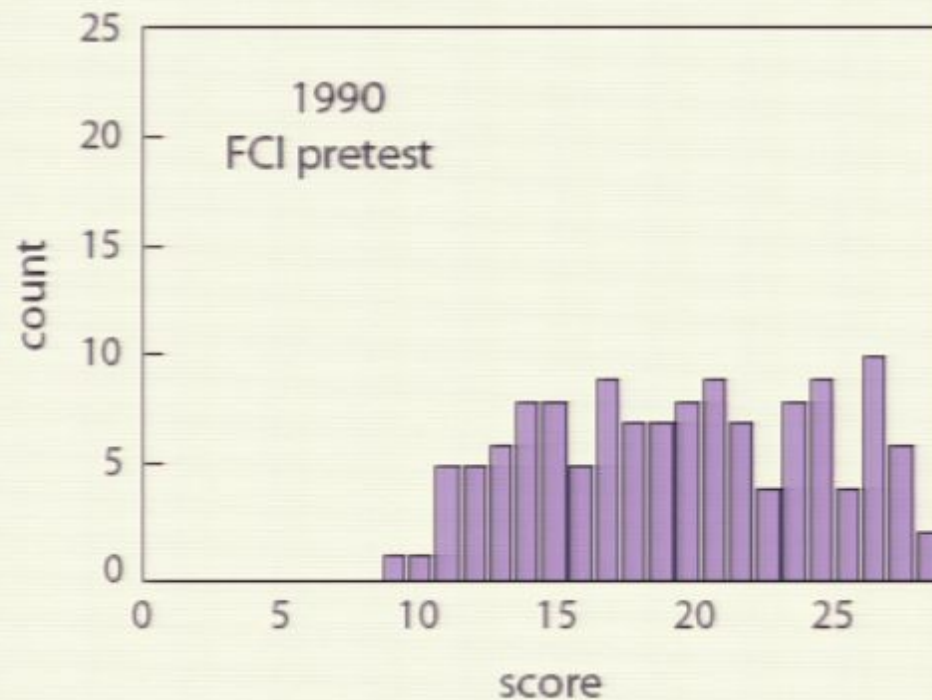


Education

lectures focus on delivery of information

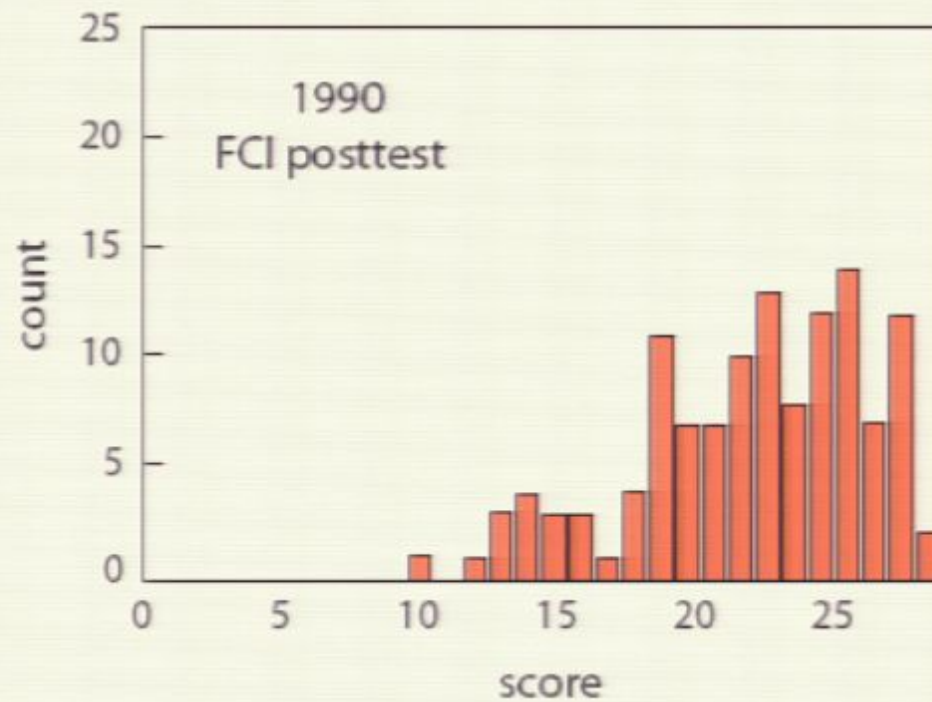
Education

education is not just information transfer



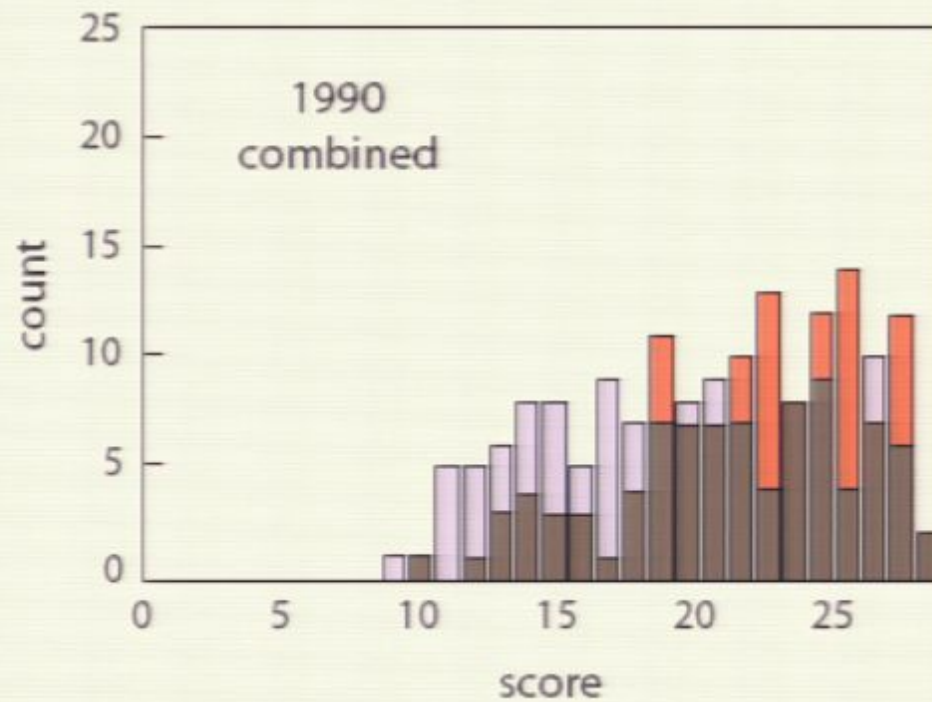
Education

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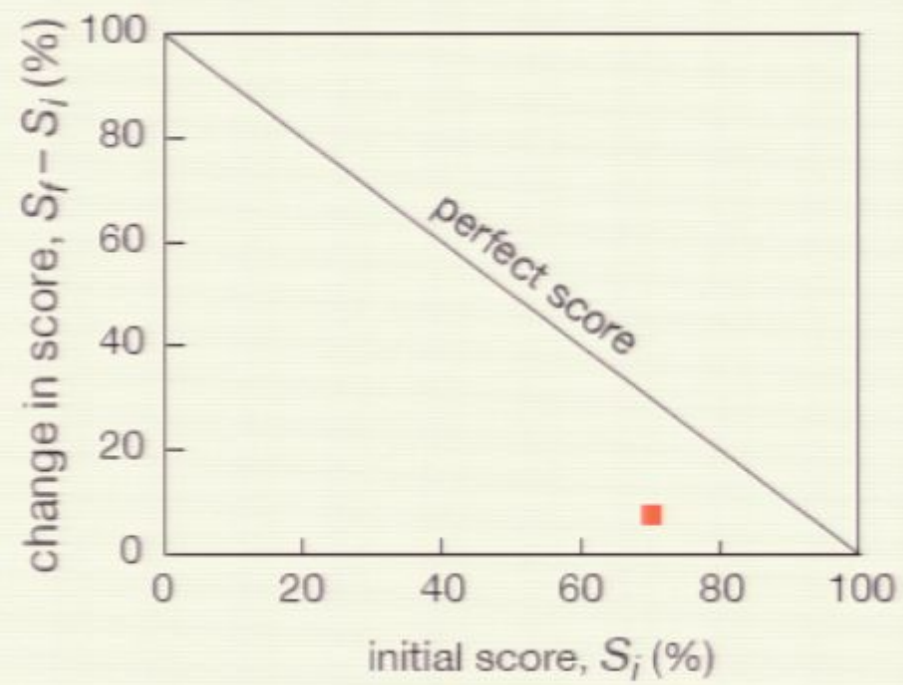


Education

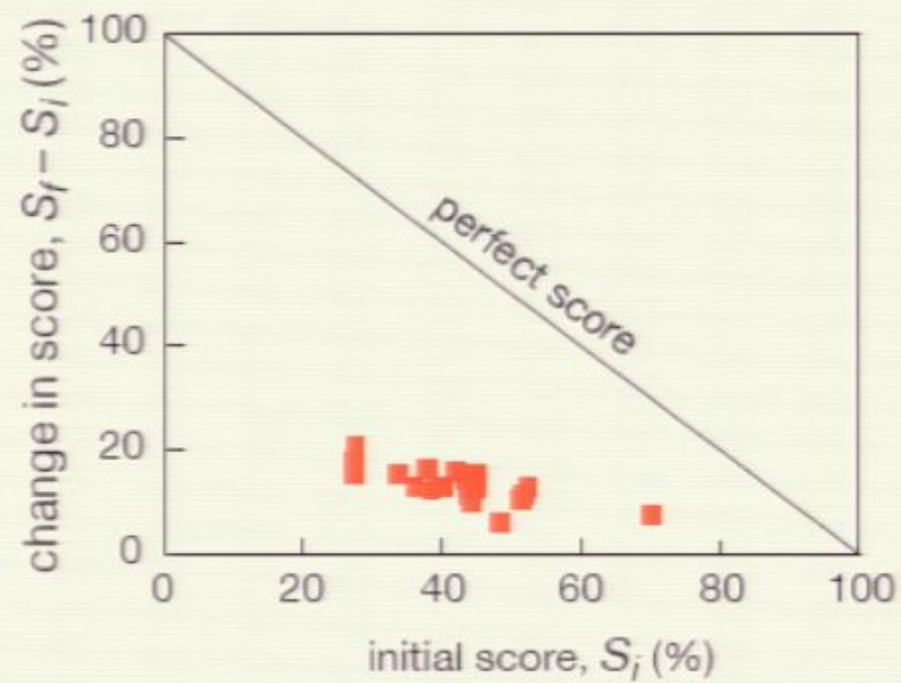
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Education

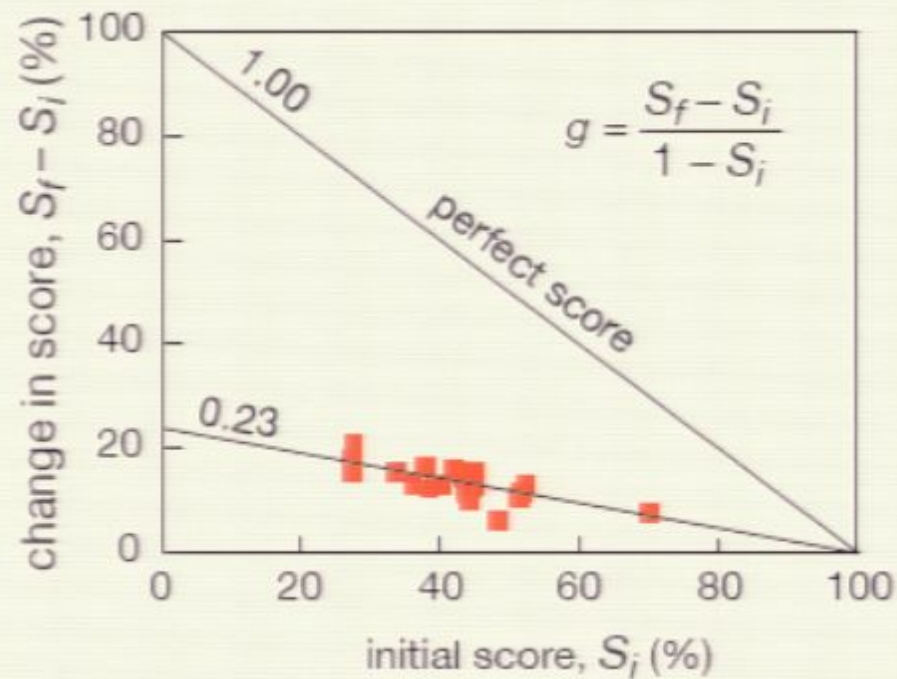


Education



Education

only one quarter of maximum gain realized

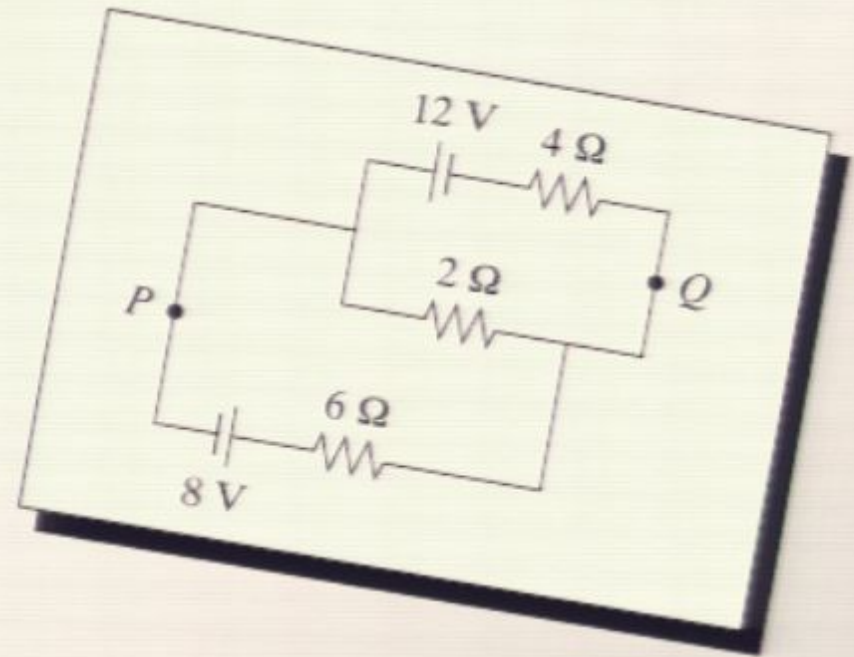


Education

not transfer but assimilation of information is key

Education

conventional problems misleading



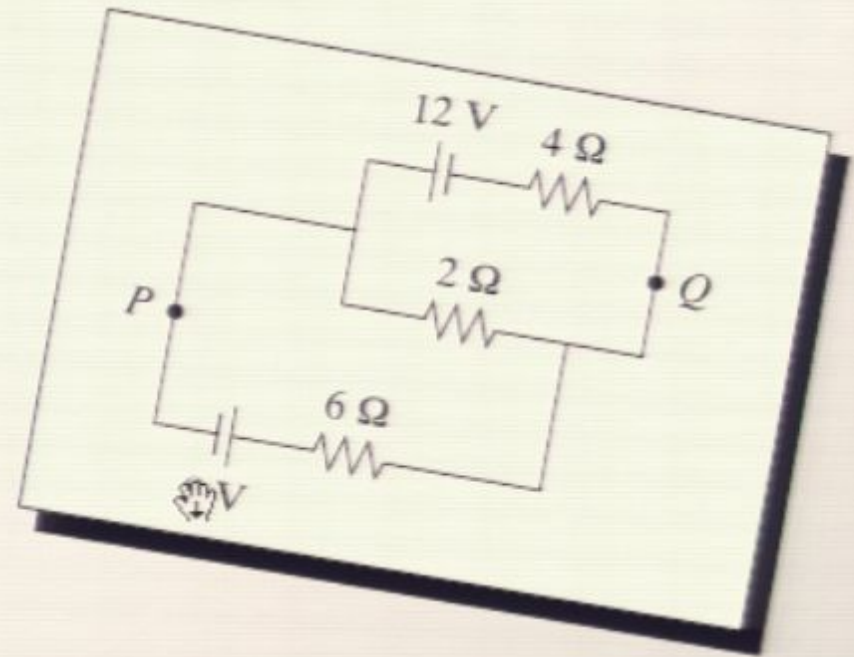
Education

conventional problems misleading

Calculate:

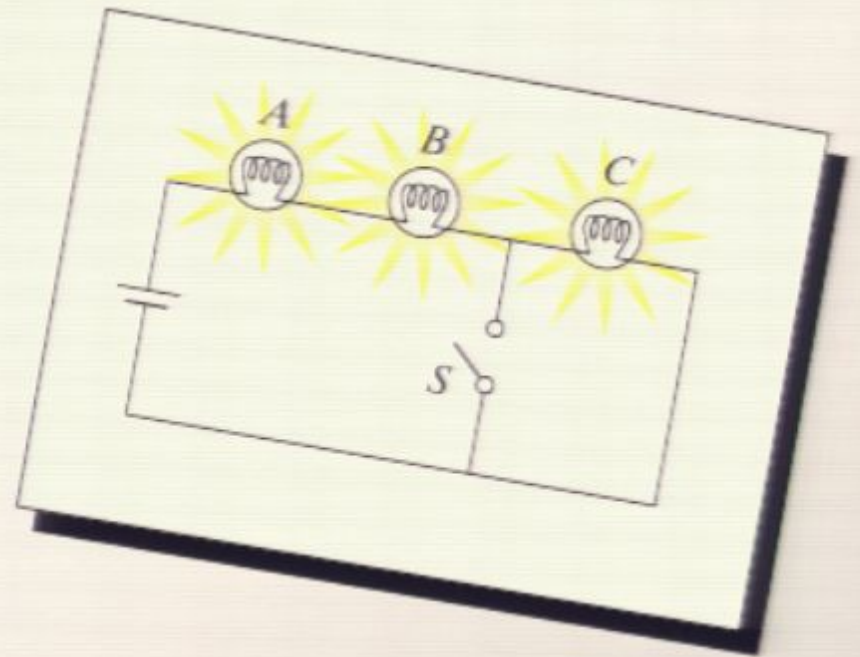
(a) current in $2\text{-}\Omega$ resistor

(b) potential difference
between P and Q



Education

are the basic principles understood?

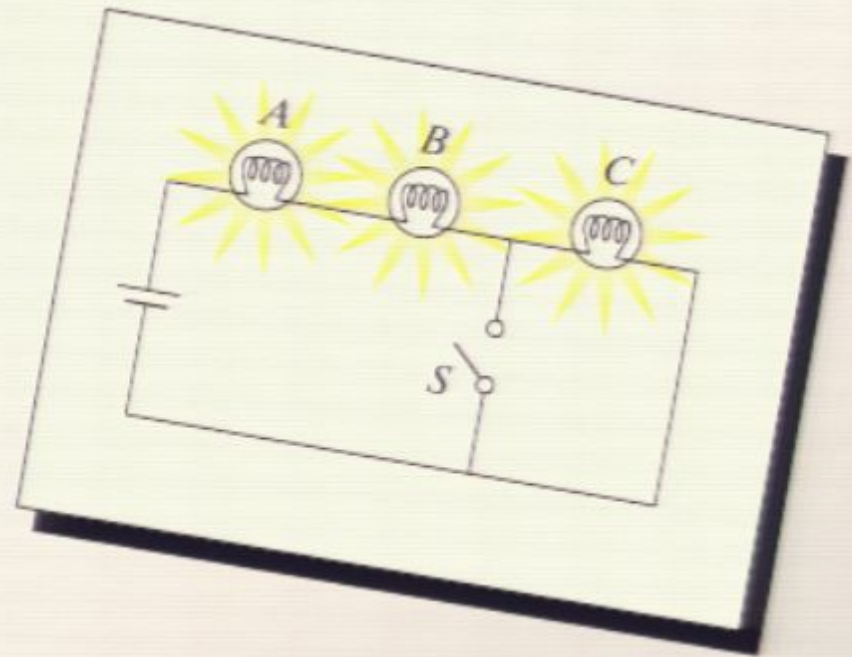


Education

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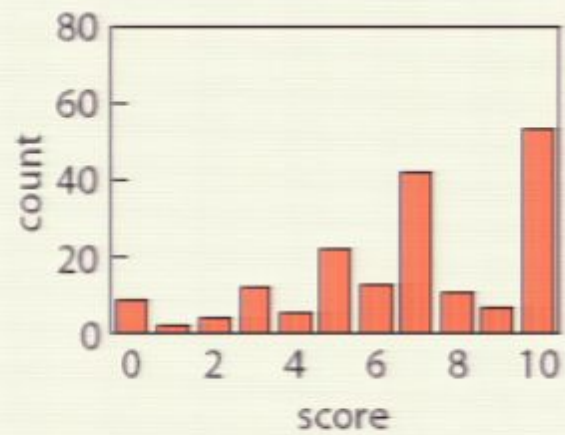
When S is closed, what happens to:

- (a) intensities of A and B ?
- (b) intensity of C ?
- (c) current through battery?
- (d) potential difference across A , B , and C ?
- (e) the total power dissipated?

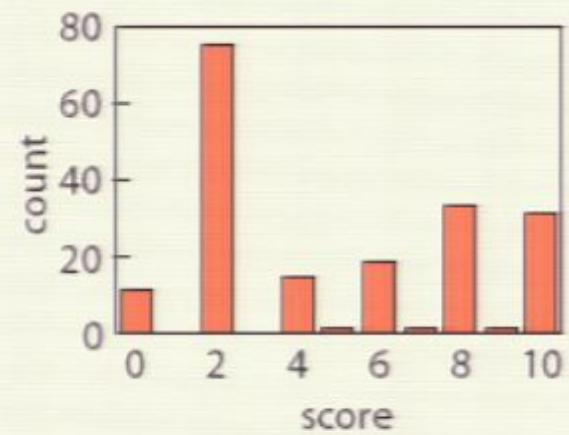


Education

conventional

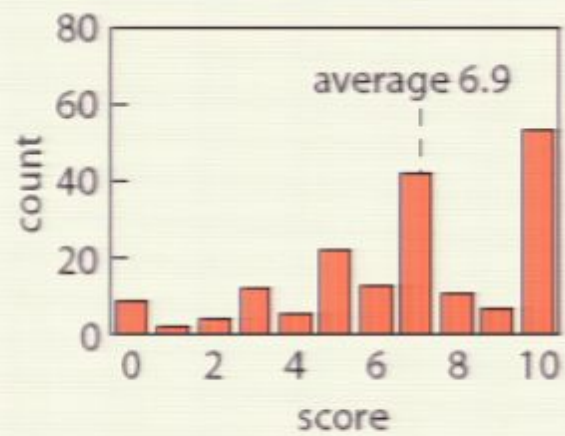


conceptual

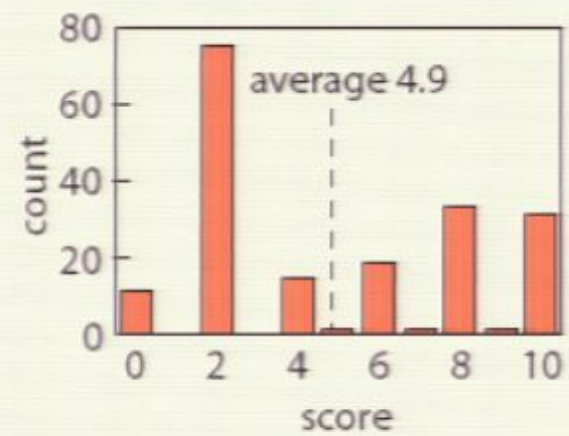


Education

conventional



conceptual

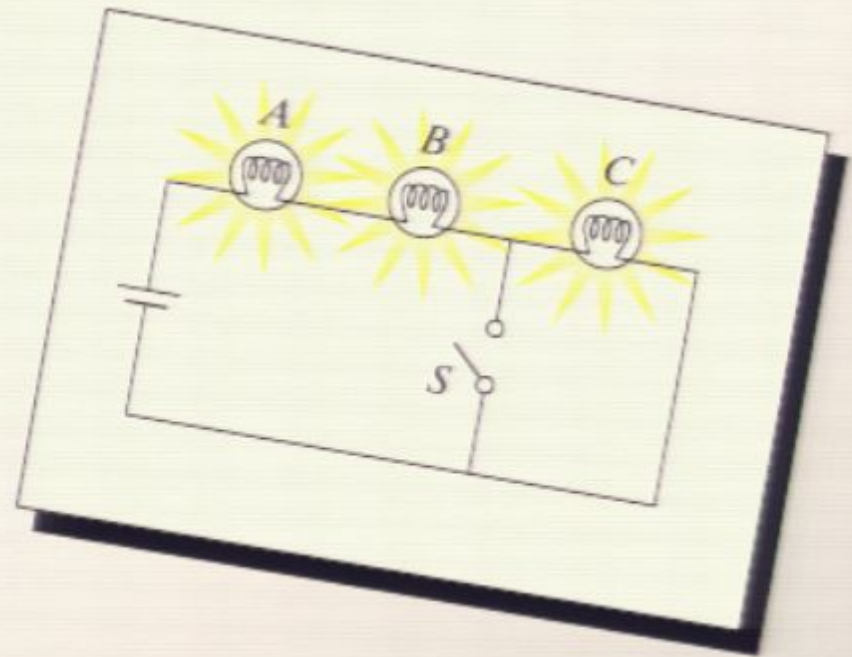


Education

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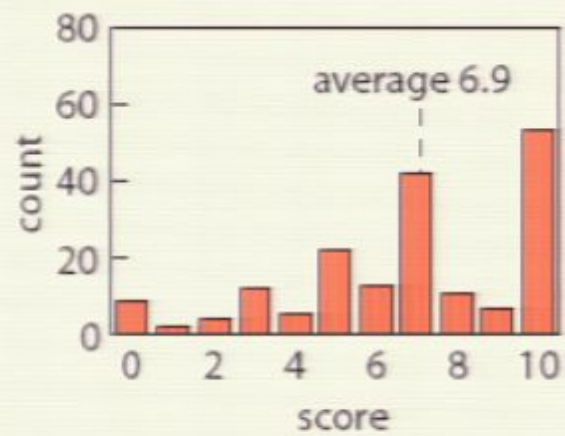
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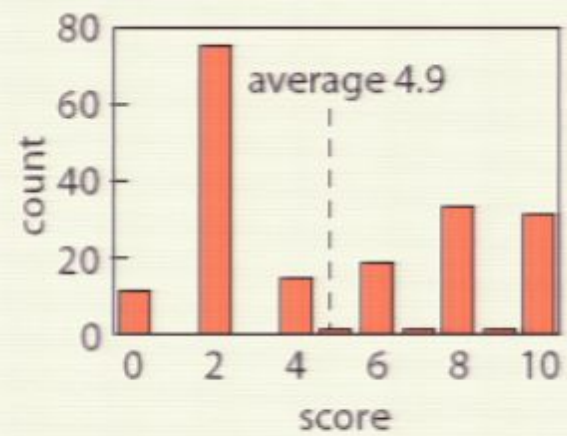


Education

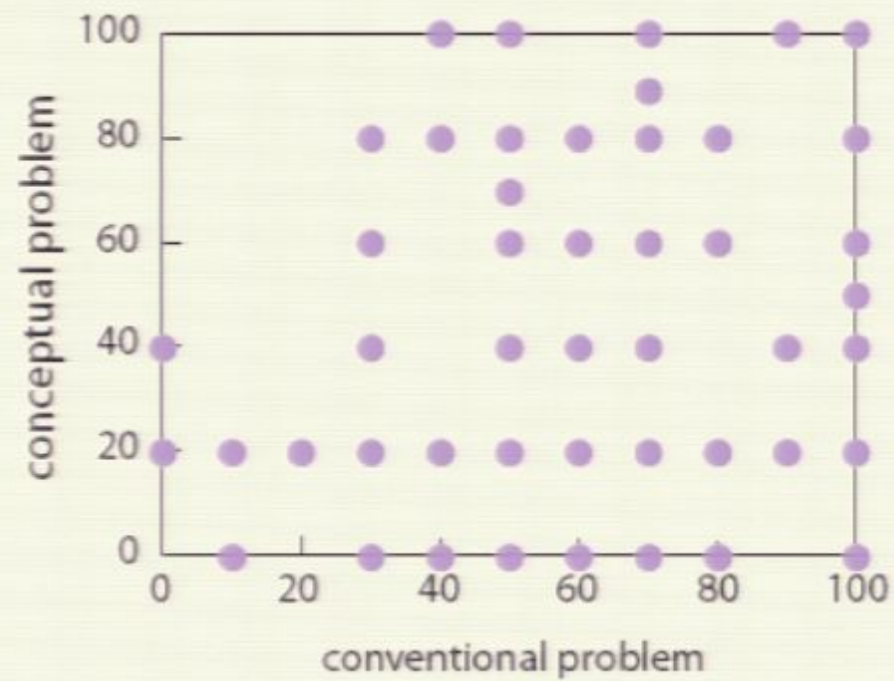
conventional



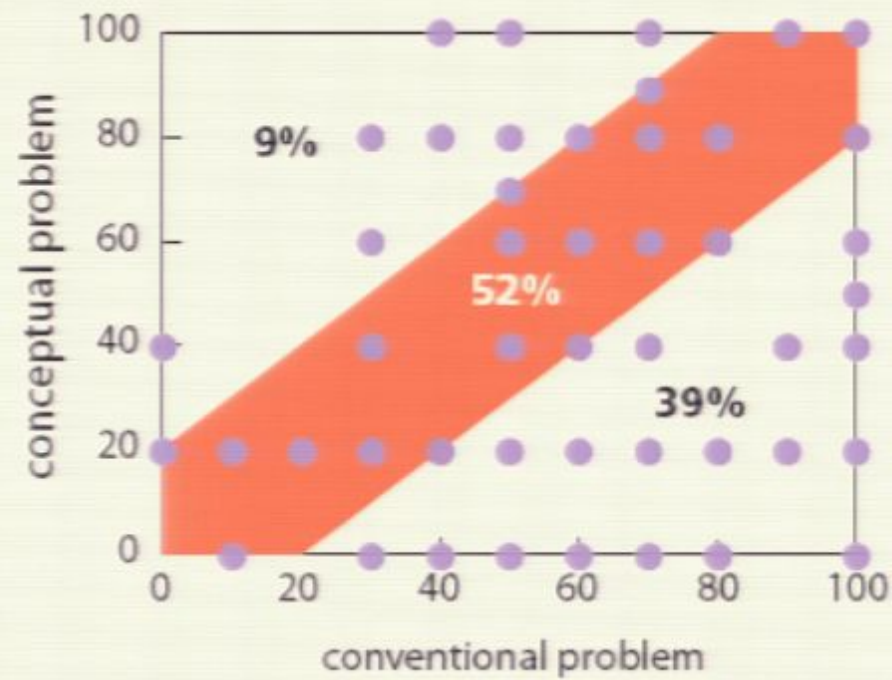
conceptual



Education



Education



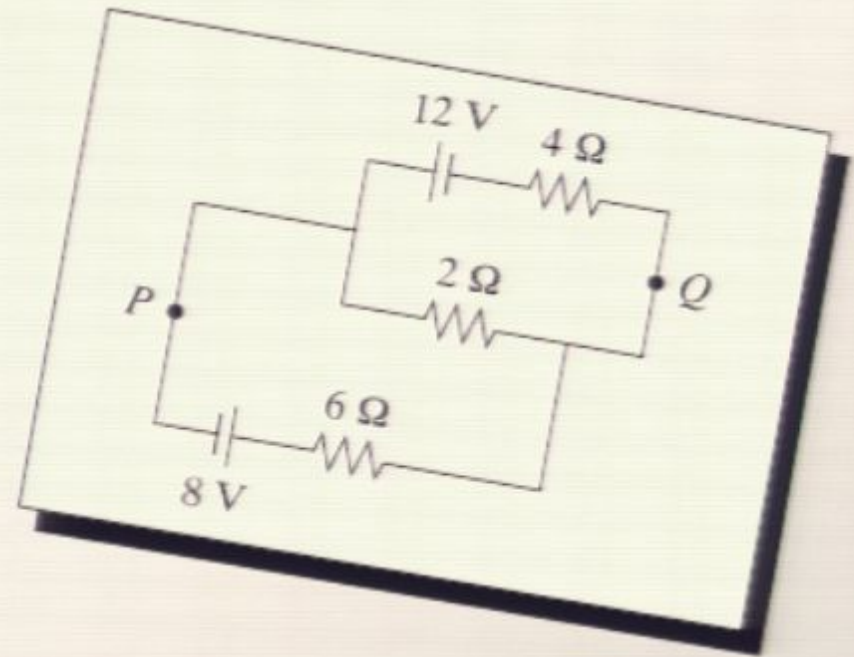
Education

conventional problems misleading

Calculate:

(a) current in $2\text{-}\Omega$ resistor

(b) potential difference
between P and Q

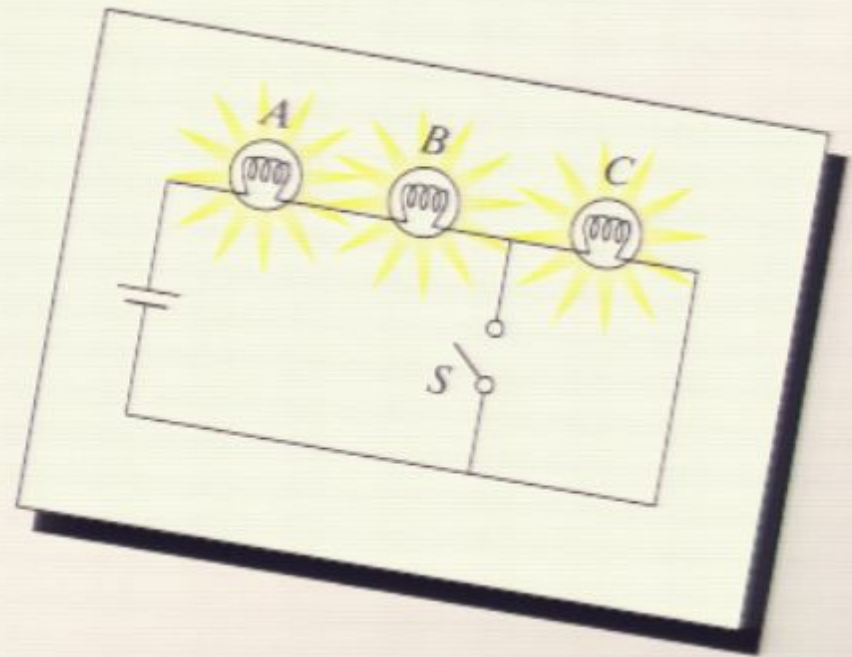



Education

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So what should we do?

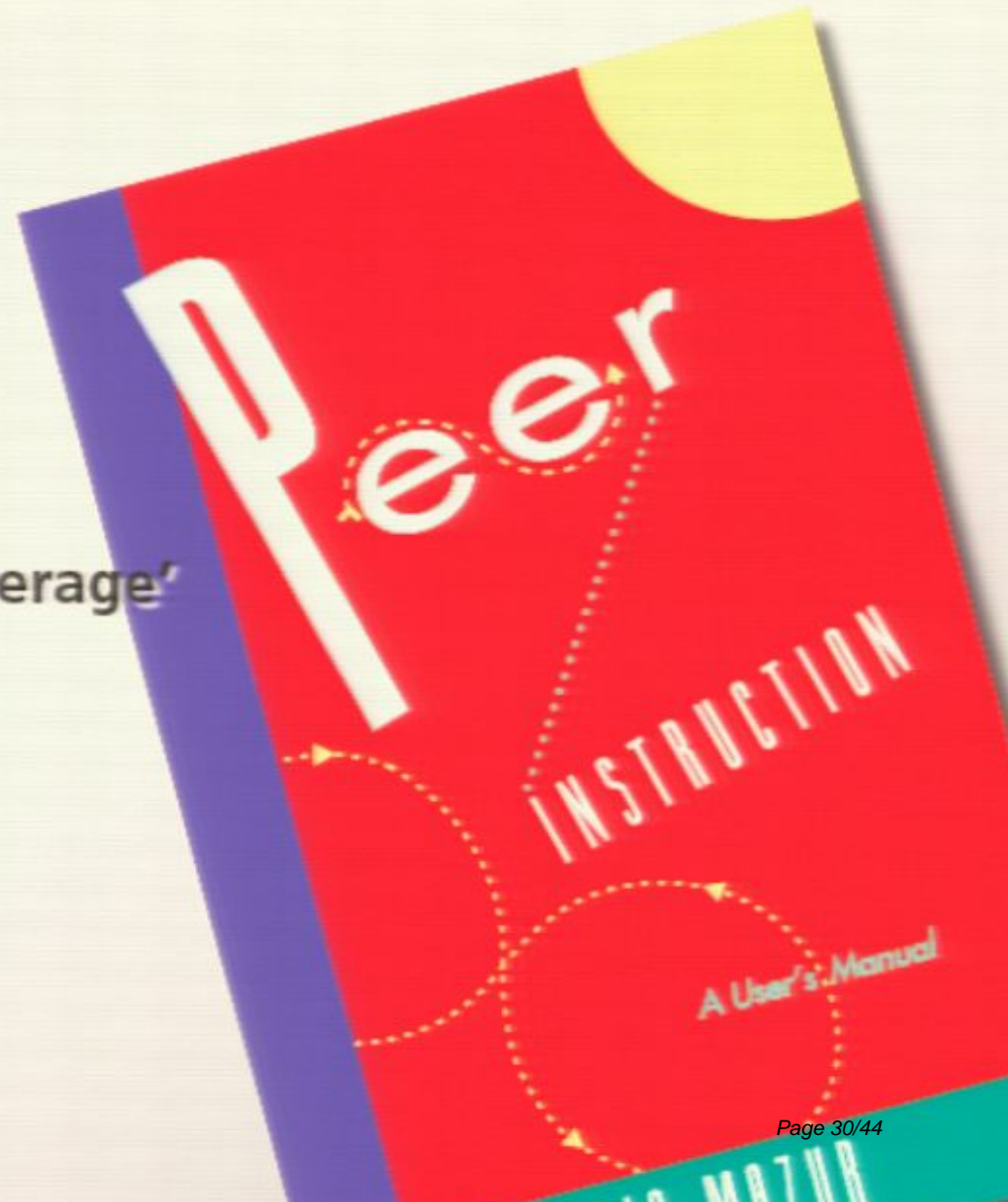
Peer Instruction

Give students more responsibility for gathering information...

Peer Instruction

Main features:

- pre-class reading
- in-class: depth, not 'coverage'
- ConcepTests





Peer Instruction

ConcepTest:

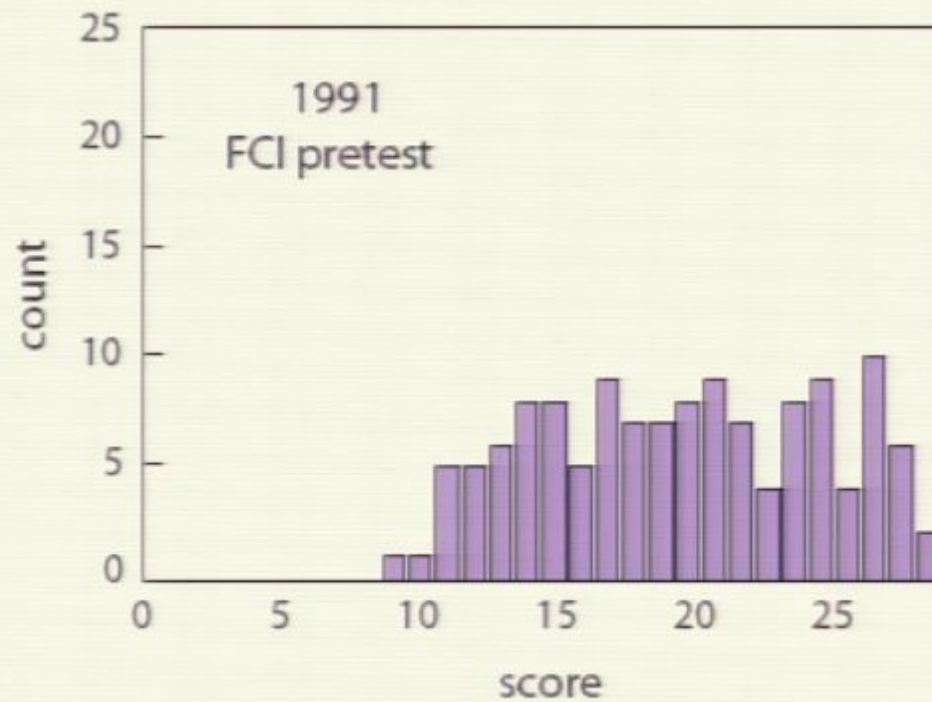
1. Question
2. Thinking
3. Individual answer
4. Peer discussion
5. Revised/Group answer
6. Explanation

Results

is it any good?

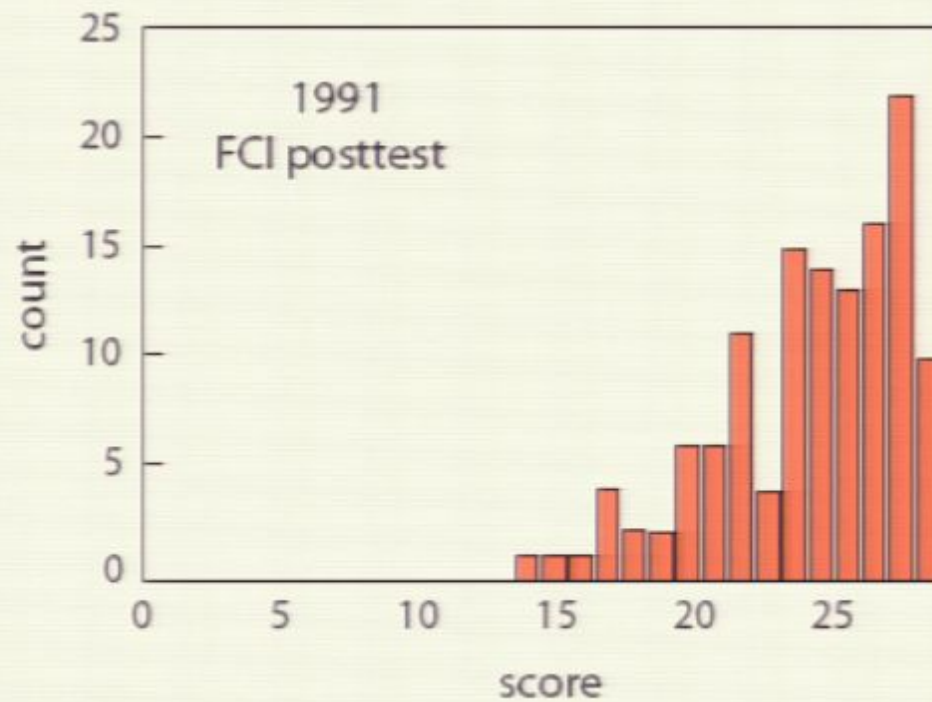
Results

first year of implementing PI



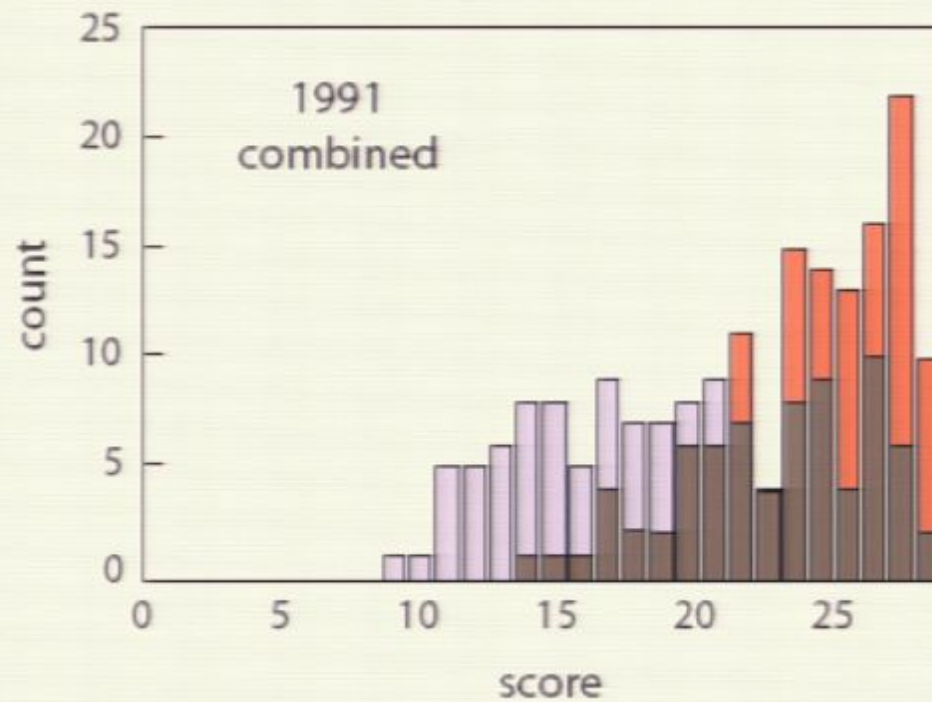
Results

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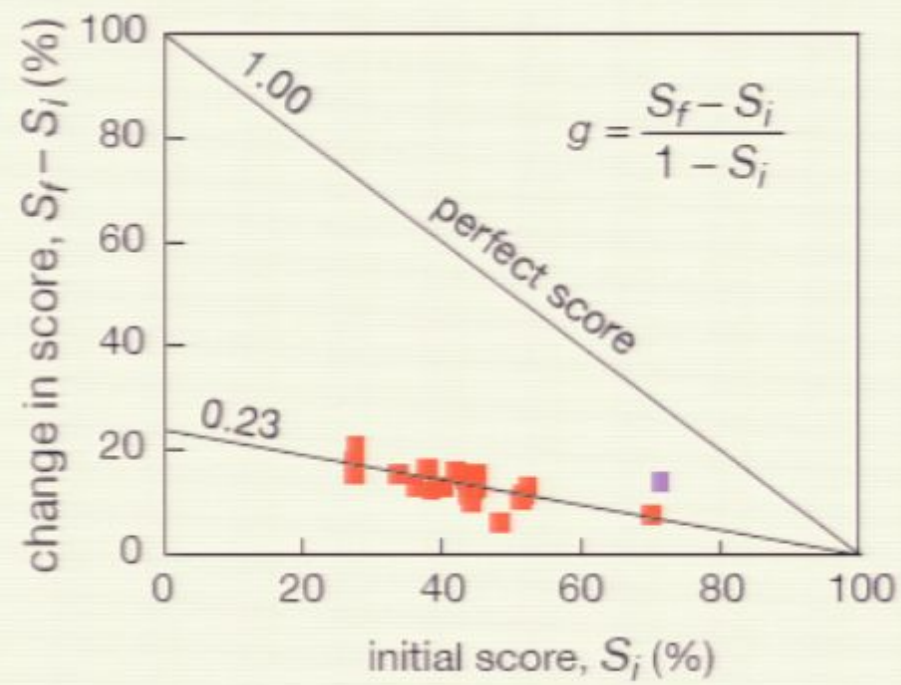


Results

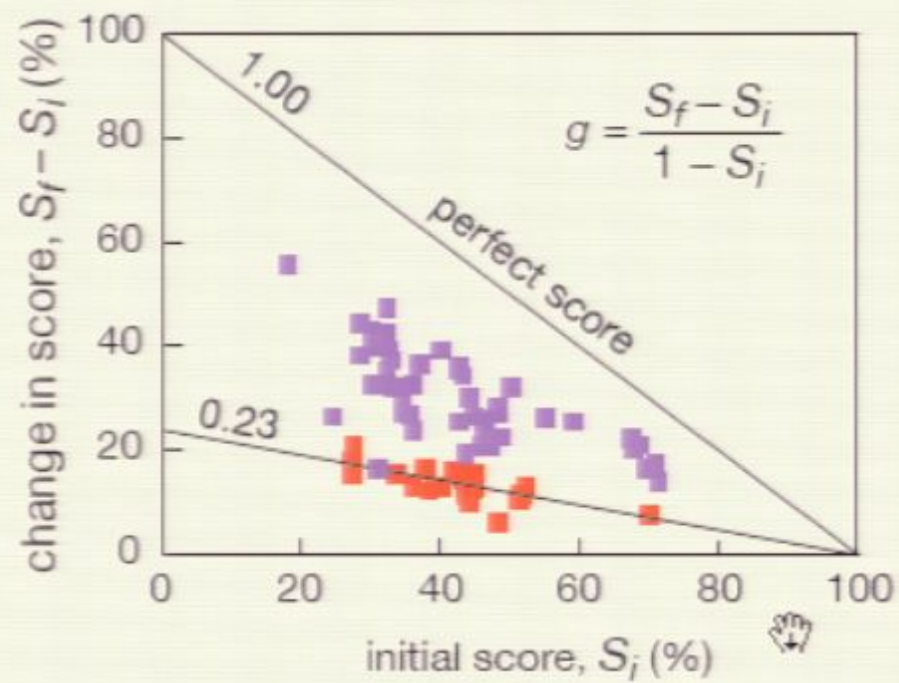
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Results



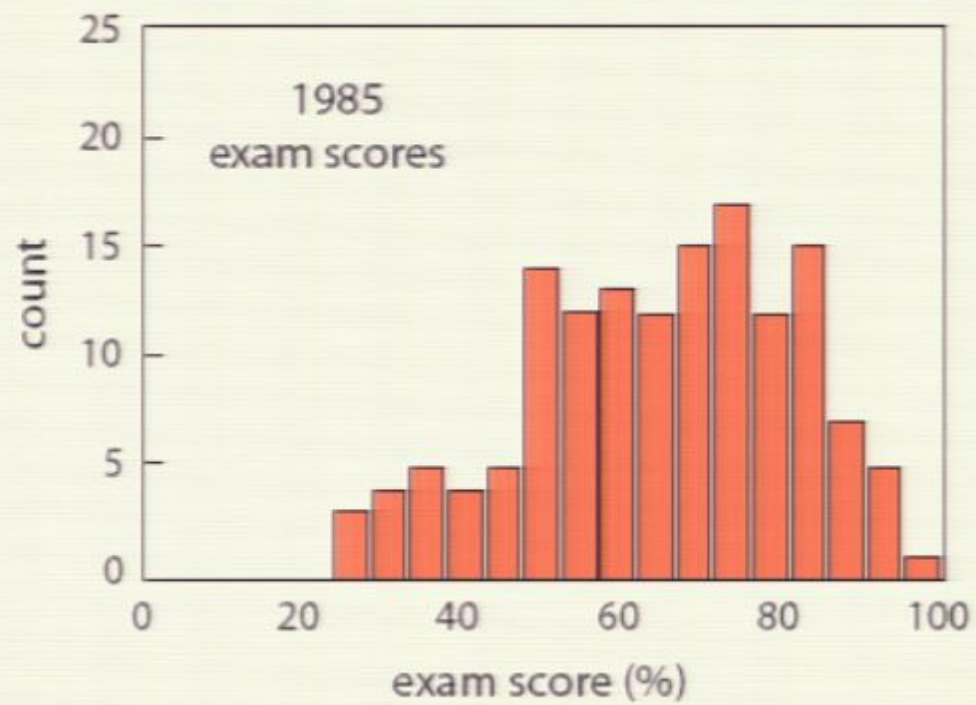
Results



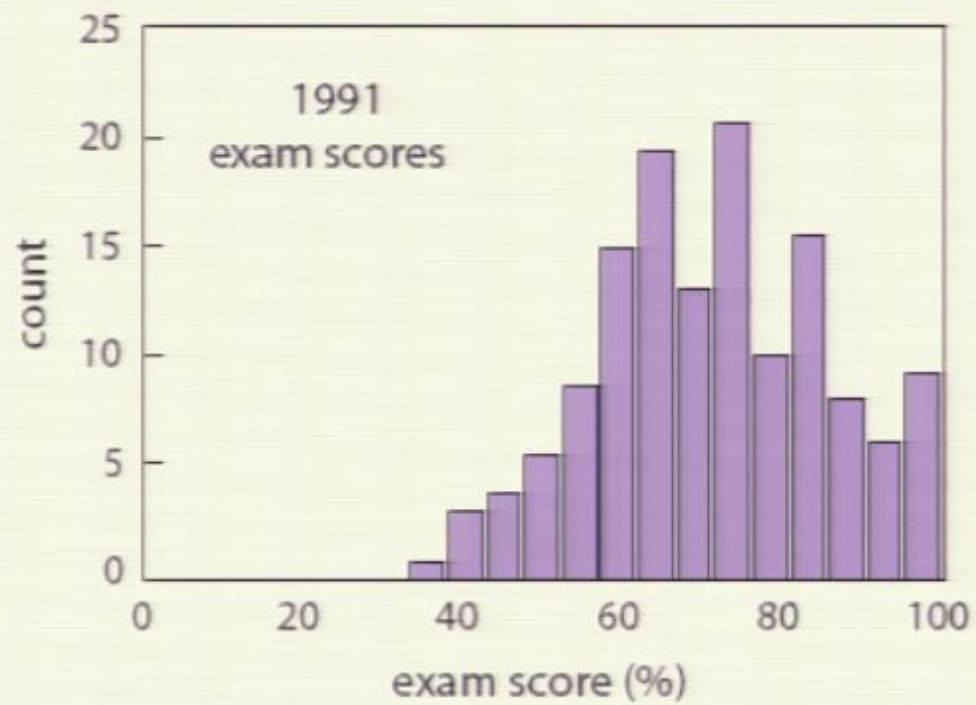
Results

what about problem solving?

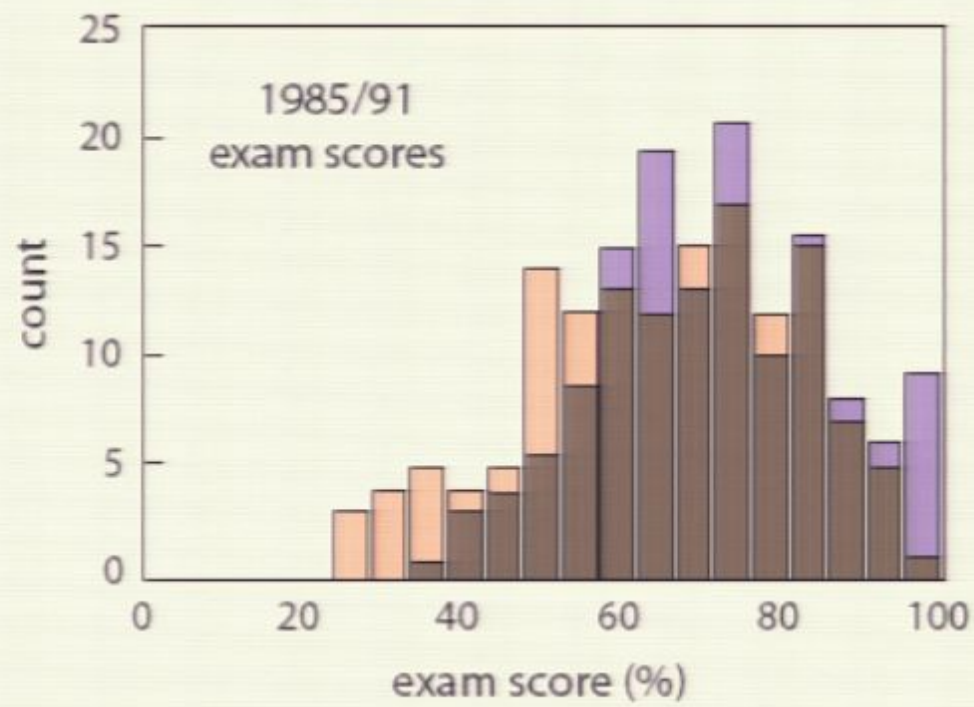
Results



Results



Results



Summary

So better understanding leads to better problem solving!

Summary

So better understanding leads to better problem solving!

(but “good” problem solving doesn’t always indicate understanding!)

Funding:

National Science Foundation

for a copy of this presentation:

<http://mazur-www.harvard.edu>

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