

Physics 4810 / 7810 Week 13 (lucky!)

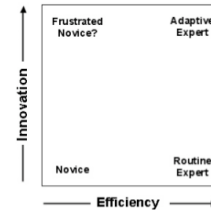
Day 24: Fa2008:
 Transfer
 Preparation for Future Learning
 Oscillations

Quick Feedback on Projects
 - howzit?
 - impressive work!!!

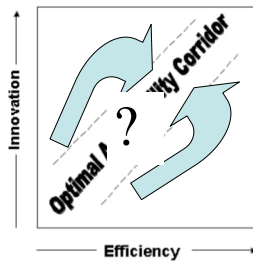


Goals

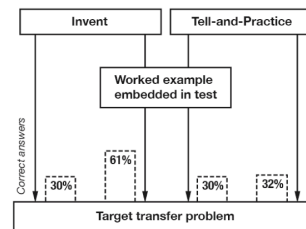
- Routine Expertise
- Adaptive Expertise



How to develop Adaptive Expertise?



Remember the studies?



Let's look at the activities

Go through the two activities

- I) What would common student responses be?
- II) Compare the differences **KEY THEMES:**
 - Invention
 - What is being "PREPARED"
 - Concrete vs. Abstract
 - Who is doing what (agency)

The How of Transfer: Concrete vs Abstract

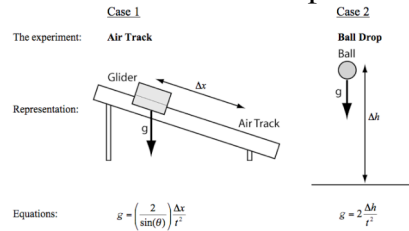
Surprising, students are more likely to transfer if examples are abstract. Would have thought otherwise. The paper keeps mentioning that surface features get in the way of transfer. I can think of some reasons, but I would like some explanation based on research, if it's out there.

The paper claims, research claims that students are more likely to transfer if instructional examples are abstract and relatively free of surface details. This seems to contradict our earlier claim that putting science in a real world context enhances student learning.

Careful . . .

- As with many things in Education...
It Depends

Learning from Concrete to focus on abstract / deep structure



1. The diagrams above show two ways of calculating the gravitational acceleration g . Each case shows an experiment and the equation that goes with that experiment.

Which elements in the *air track* diagram correspond to elements in the *ball drop* diagram? Draw the correspondences with lines from the left picture to the right. *Explain* your choices.

Where to work on change in the educational system

Referring to your third point, it's hard to change the way students think about problems and studying so late in the game. We've made some remarkable strides, but if we apply these lessons earlier on, our students will be much more prepared and come to college as thinkers and problem solvers.

Happy Thanksgiving

Enjoy (the) Turkey

