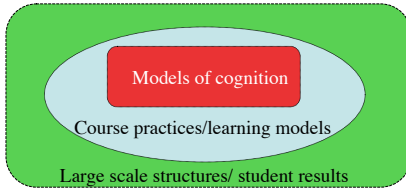


T&L Summary- Week 5 : where are we?!?!?!?

Top down introduction

- practice based
- rise to concrete:

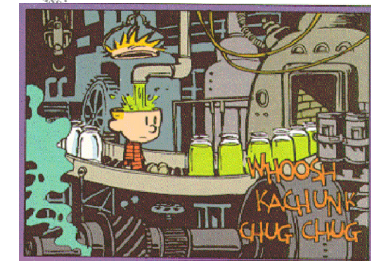


What about the level of practice

- Students are NOT learning what we expect.
- See difference between
 - active -engagement
 - traditional practices / passive students
- Variety of strategies to engage people:
 - study what they know coming in
 - address misconceptions
 - build connected representations

Trad'l Approach Theoretic Background

Individual $\xrightarrow{\text{Instruction via transmission}}$ Content (E/M)



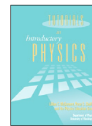
PER Theoretic Background

Individual $\xrightarrow[\text{via transmission}]{\text{Instruction}}$ Content (E/M)
transmissionist

Individual $\xrightarrow[\text{Prior knowledge}]{\text{Construction constructivist}}$ Content (E/M)
basic constructivist

PER Course Practice

- Tutorials
- Concept Tests / Peer Instruction
- JITT
- ILD



Cognitive underpinnings of practices

How to deal with Prior Knowledge:

Individual $\xrightarrow[\text{Prior knowledge}]{\text{Construction constructivist}}$ Content (E/M)
basic constructivist

- elicit -confront-resolve -- not really a cognitive model -- but basis for practice
- bridging -- step from p.k. to scientific knowledge

Models of cognition

- Full blown concepts /mis-concepts--
 - Heavier objects fall faster
- Schema -- organized structures that give rise to concepts
- Phenomenological primitives -
"phenomenological" = from experience
"primitive" = basic / irreducible unit

Where are we going

- Build back out ...
- Realize there is more to education than "concepts"

Individual \longleftrightarrow Content (E/M)
enhanced constructivist
Epistemology
Self-regulation
Affect

And more to cognition?

- In fact we can't really separate all of these because of *CONTEXT*

