

Engaging Learners

Harprit Singh Bedi, MD

“Always pass on what you have learned”

Lecturing



TRADITION

JUST BECAUSE YOU'VE ALWAYS DONE IT THAT WAY
DOESN'T MEAN IT'S NOT INCREDIBLY STUPID.

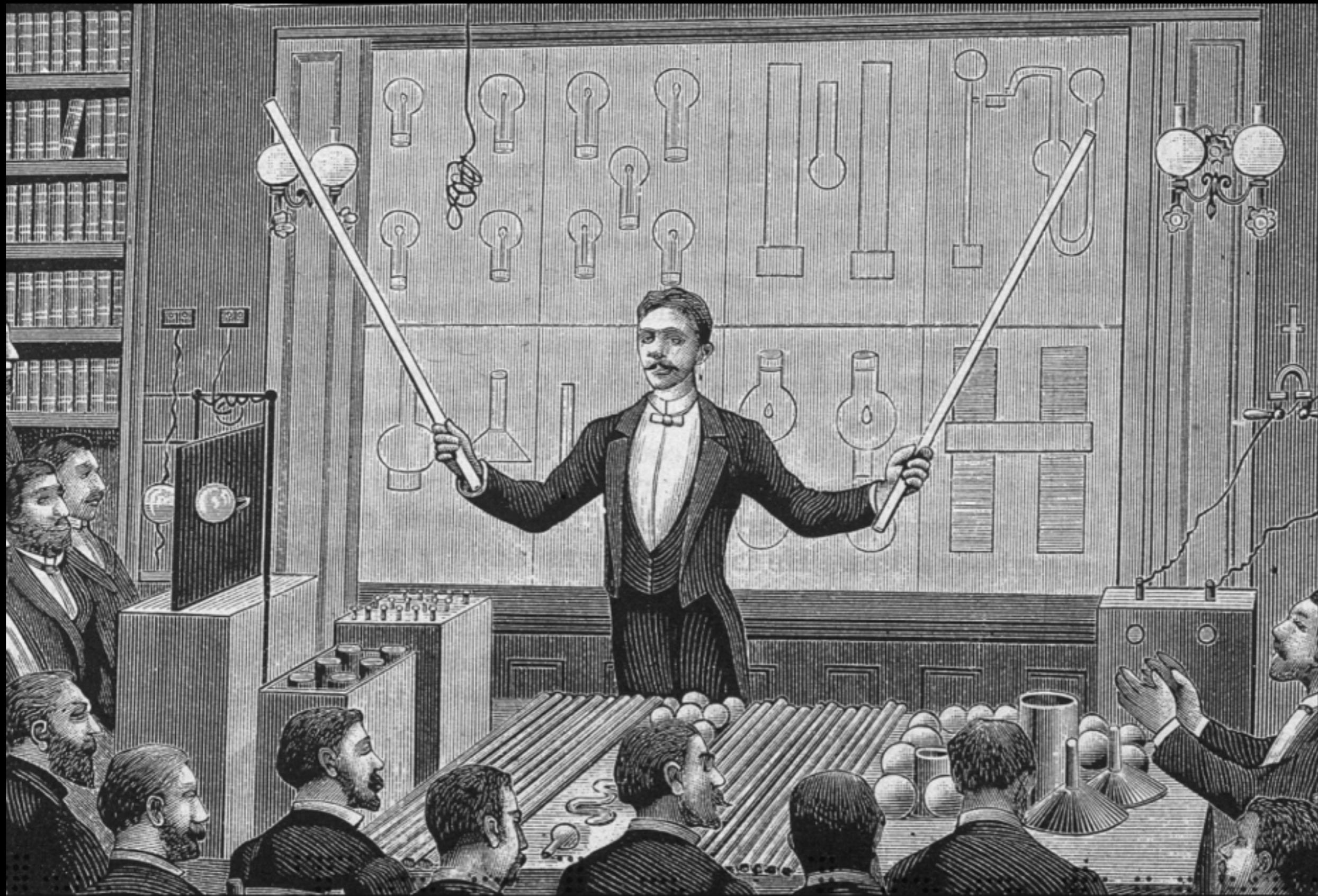


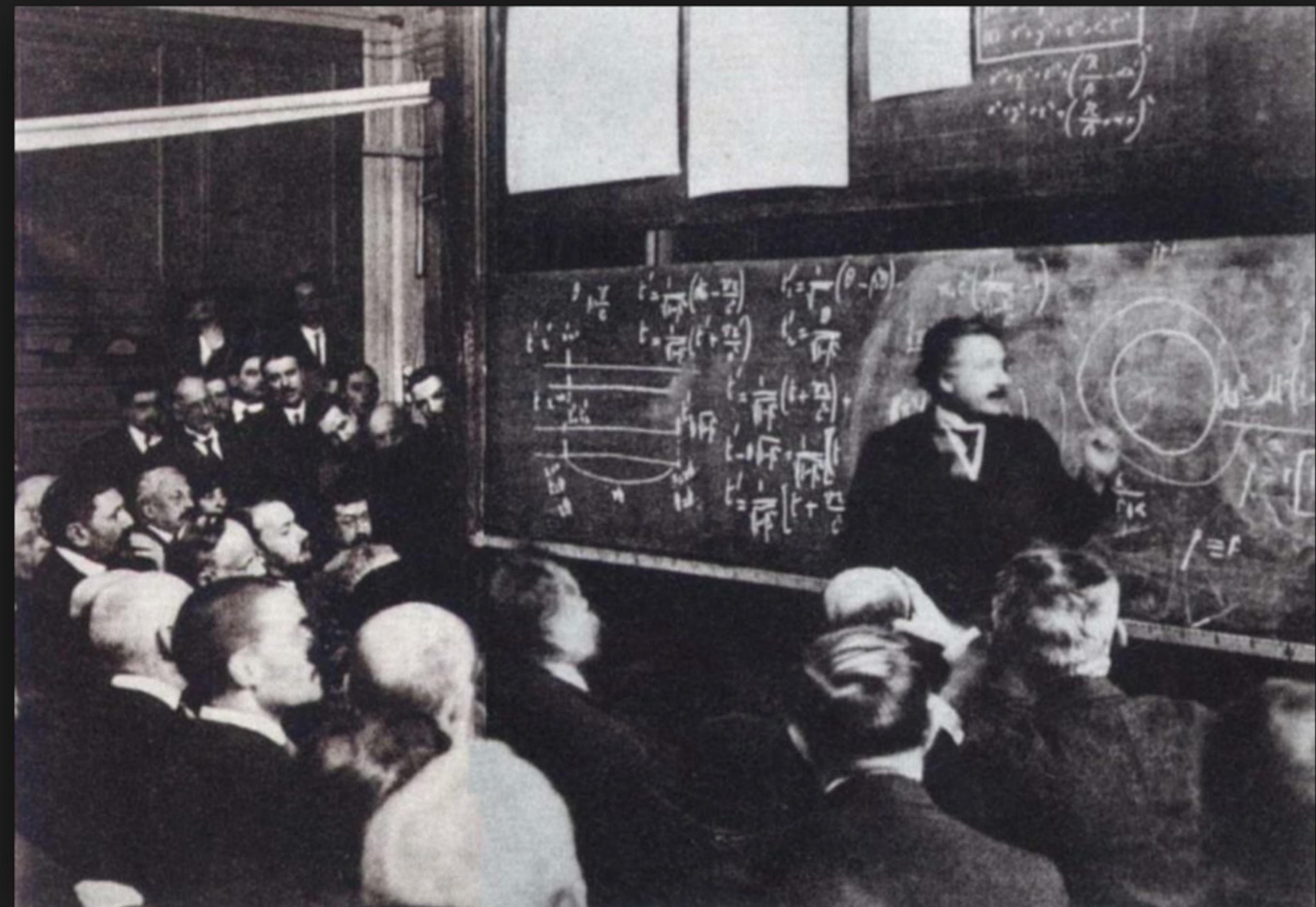


- Provides lecturer's personal overview of the material
- Integrates material from multiple sources
- Clarifies complex information









TED TALKS



IDEAS WORTH SPREADING







Passive Learning

Passive Learning

- Instructor-centered classroom setting
- Does not include open student interactions
- Focuses on exposing students to material









CONTENT \neq Concept



Learning Objectives

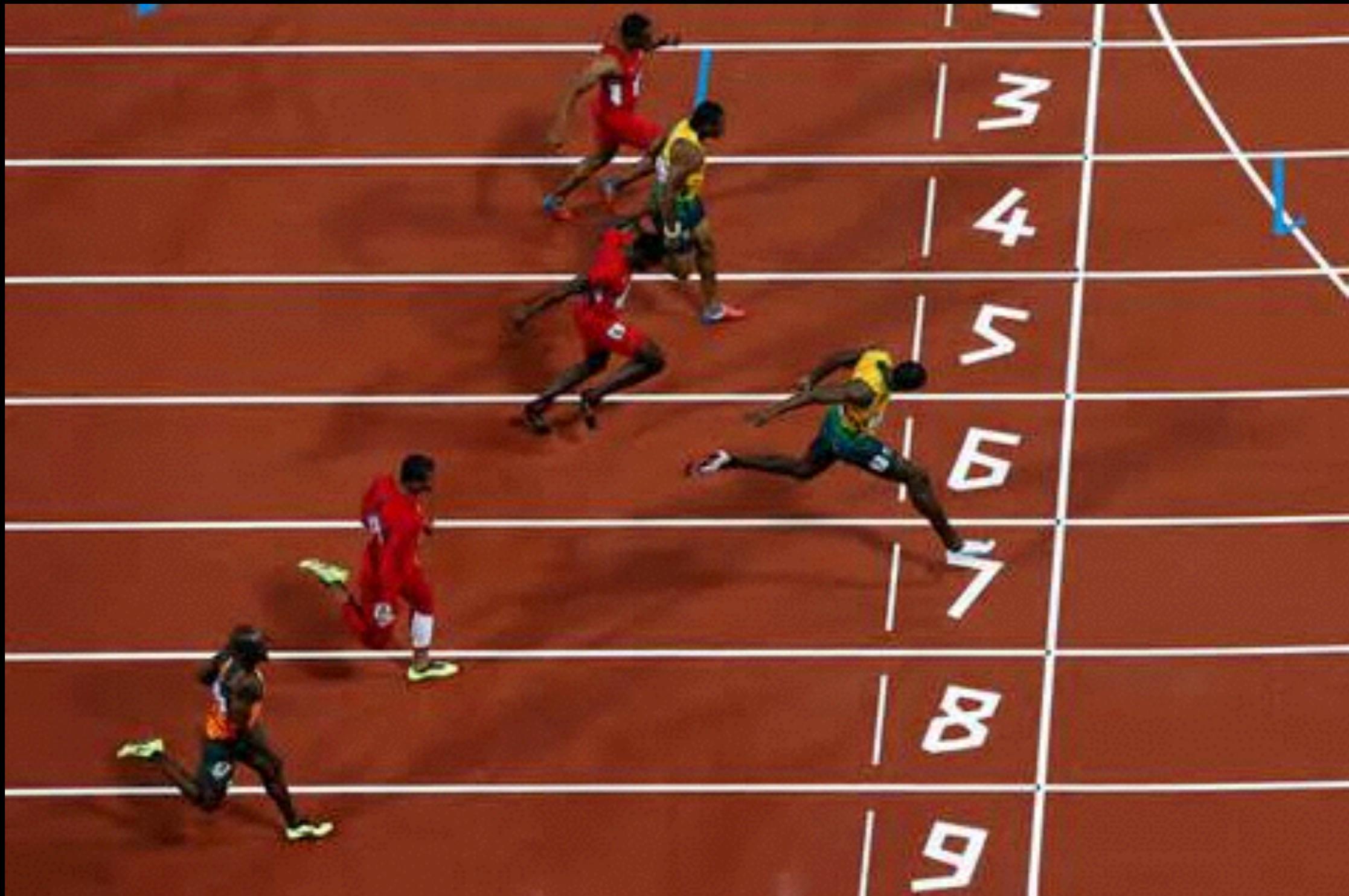
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Teaching Objectives



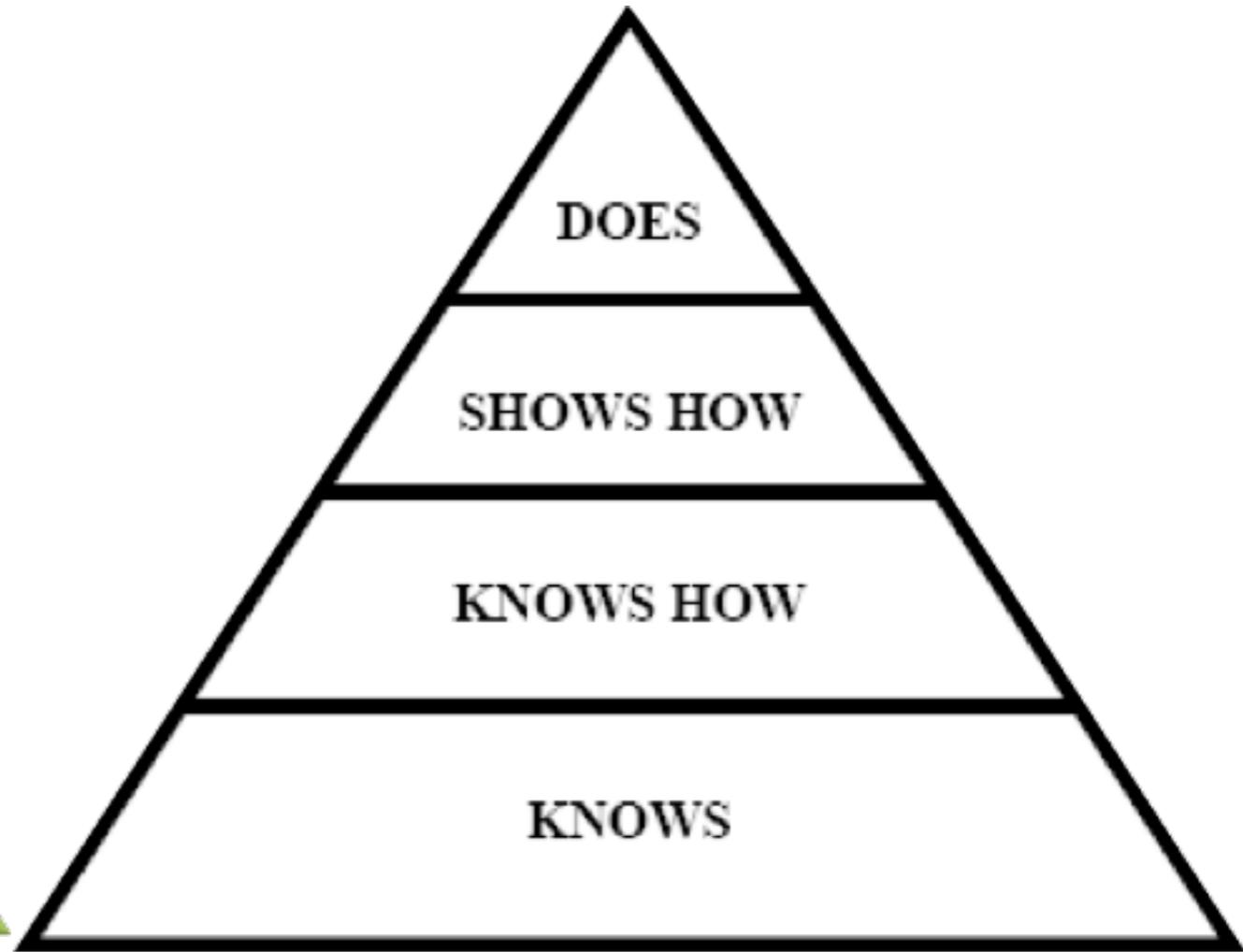
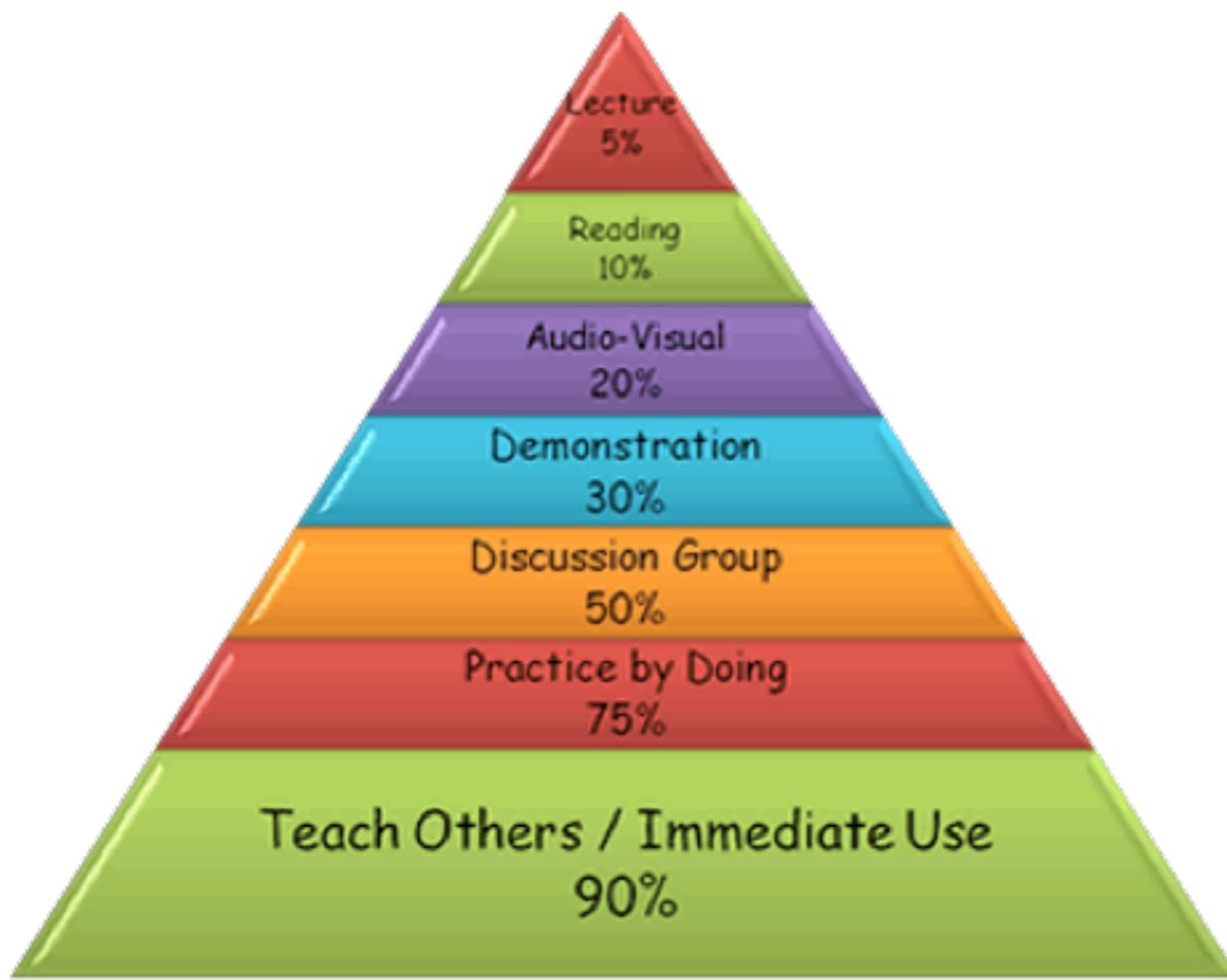
“The residents all pass the exam.”

-Every other attending



Active Learning















Why is the Higgs particle important?

- Fundamental structure of matter
 - Higgs boson is the quantum of the Higgs field
 - Higgs boson is the only scalar particle
- Fundamental interactions
 - Higgs boson is the only scalar particle
 - Higgs boson is the only scalar particle
- Discovery of Higgs boson
 - Higgs boson is the only scalar particle
 - Higgs boson is the only scalar particle



After 2 weeks, students tend to remember 20% of what they hear and 90% of what they say and do

Edgar Dale Cone of Experience

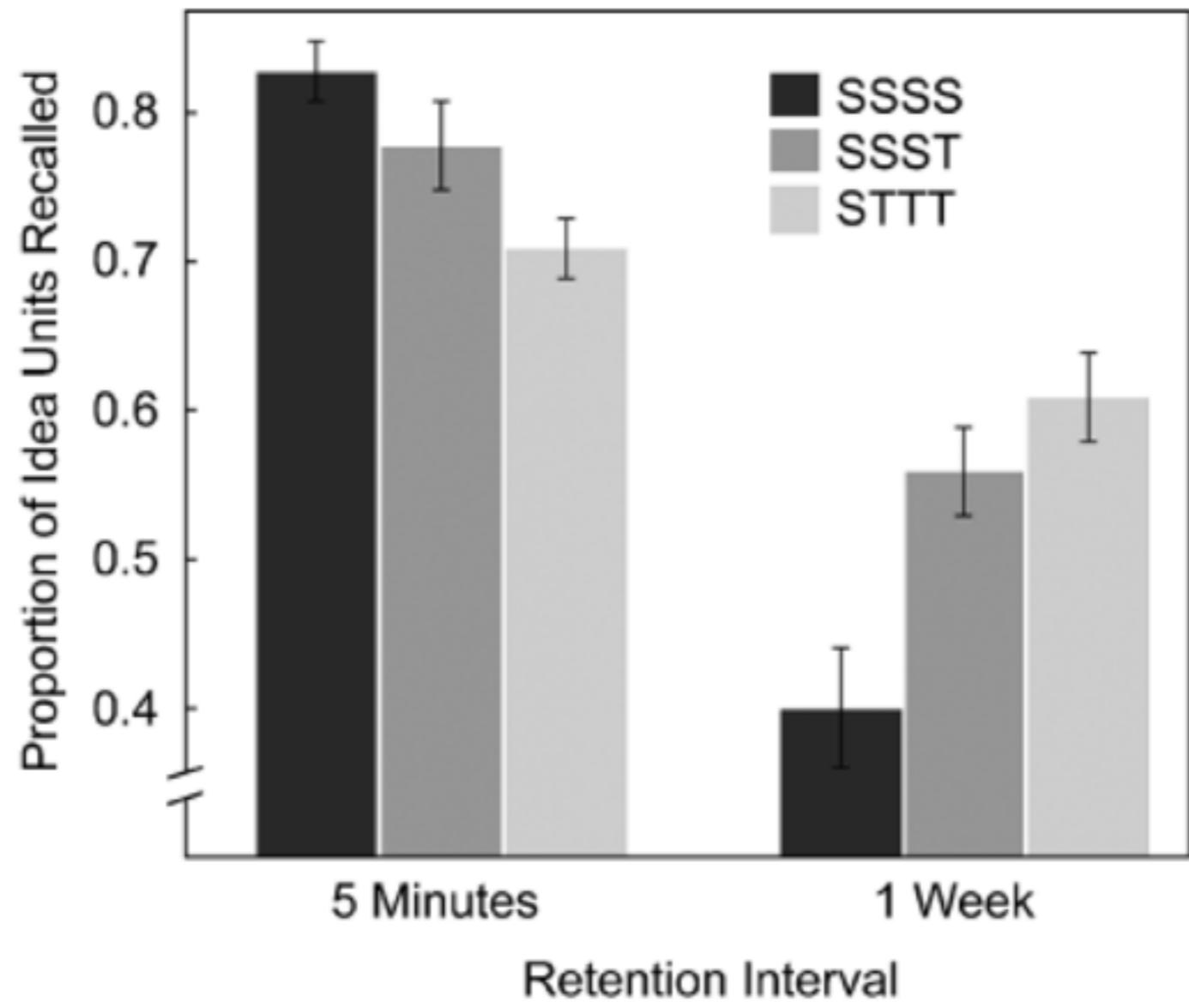
The purpose of active learning

- Keep students engaged in the material
- Motivating students to learn
- Increase classroom satisfaction
- Facilitate higher-level thinking skills



Three Basic Learning Ideas

- Process material actively
- Practice retrieval (testing effect)
- Use distributed practice



Practice Retrieval

- Do questions
- Many question banks available
- Revisit the in-service after six months

Desirable Difficulties

“I’m a visual learner.”

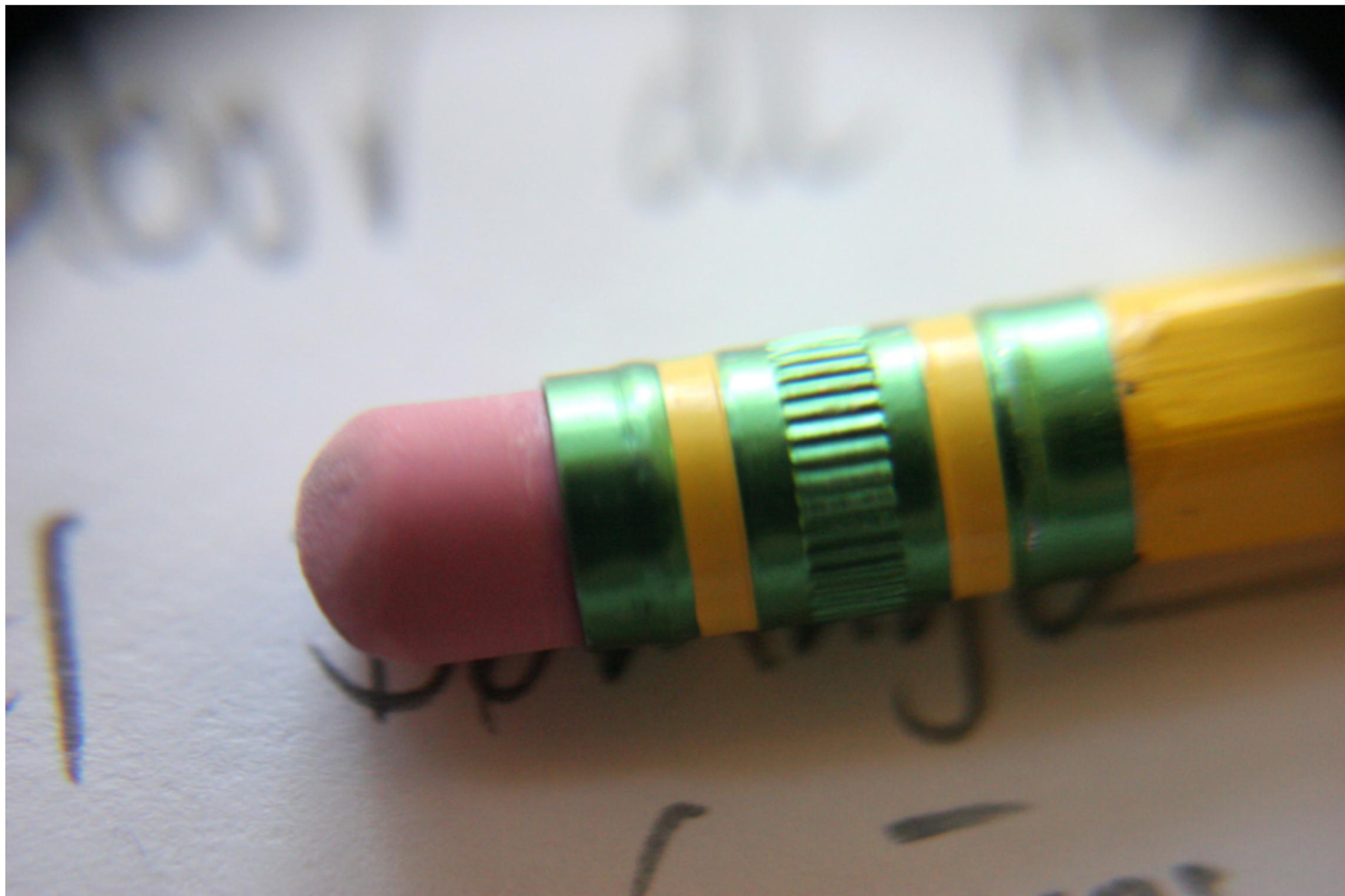
Allow time to forget...a little.

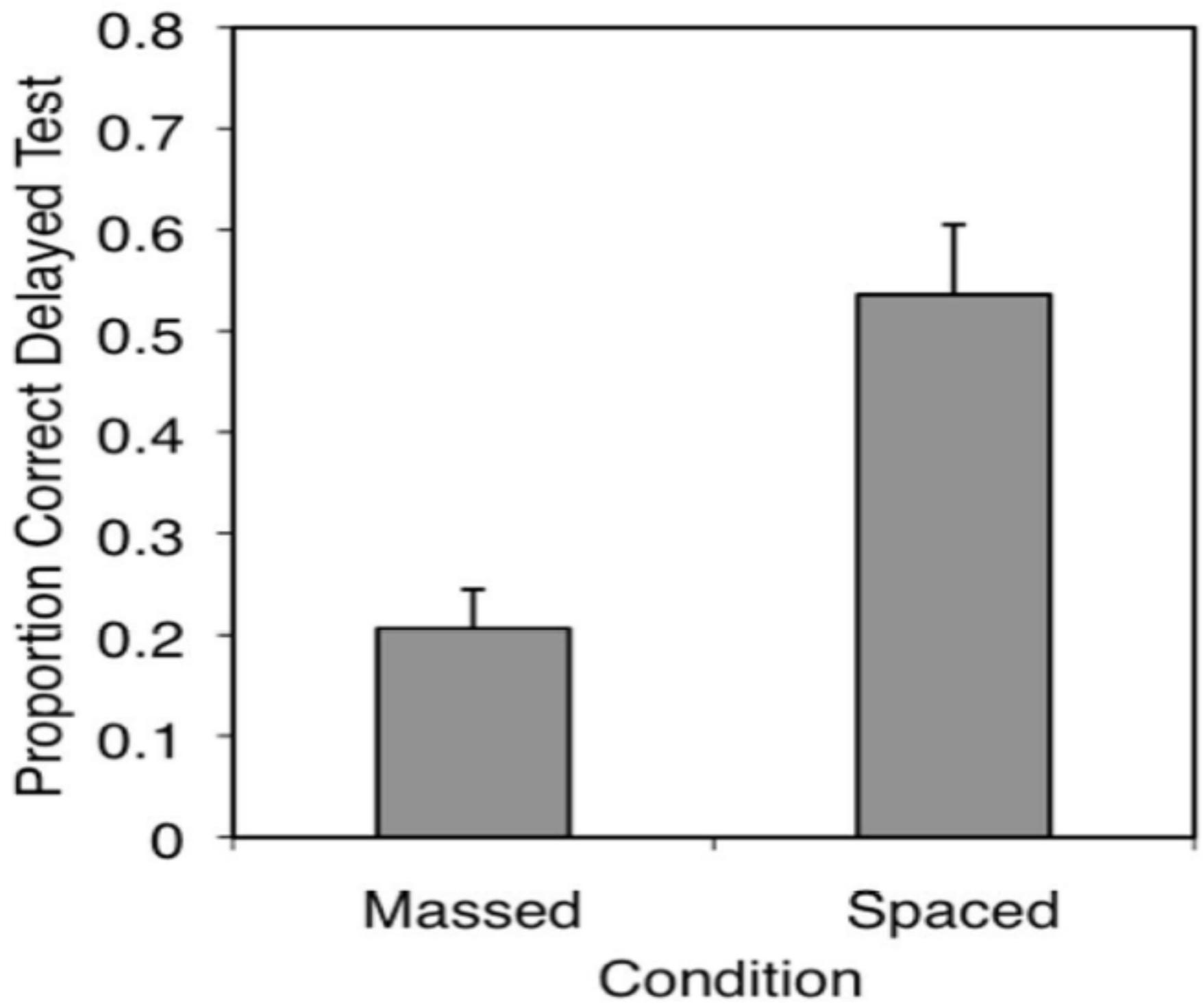
Monday

Acquired
Renal
Disease

Monday	Tuesday	Wednesday	Thursday	Friday
Acquired Renal Disease	Pediatric Renal Oncology Review	GU Trauma	Renal Ultrasound	CT and MR Urography

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Acquired Renal Disease	Pediatric Renal Oncology Review	GU Trauma	Renal Ultrasound	CT and MR Urography
Imaging Lung Cancer	Intraspinal Canal Abnormalities	Stroke Patterns on DWI	Pediatric Spine	Temporal Bone
Journal Club	Defecatory Dysfunction	Ultrasound Uterus	Fetal MRI	Congenital GU Abnormalities
Shoulder MRI Workshop 1	Shoulder MRI Workshop 2	Bone Tumors	Post-Operative Spine Imaging	Arthritides





Distributed Practice

- How does this model fit with the new residency structure?
- Are we revisiting enough basic concepts in the fourth year?

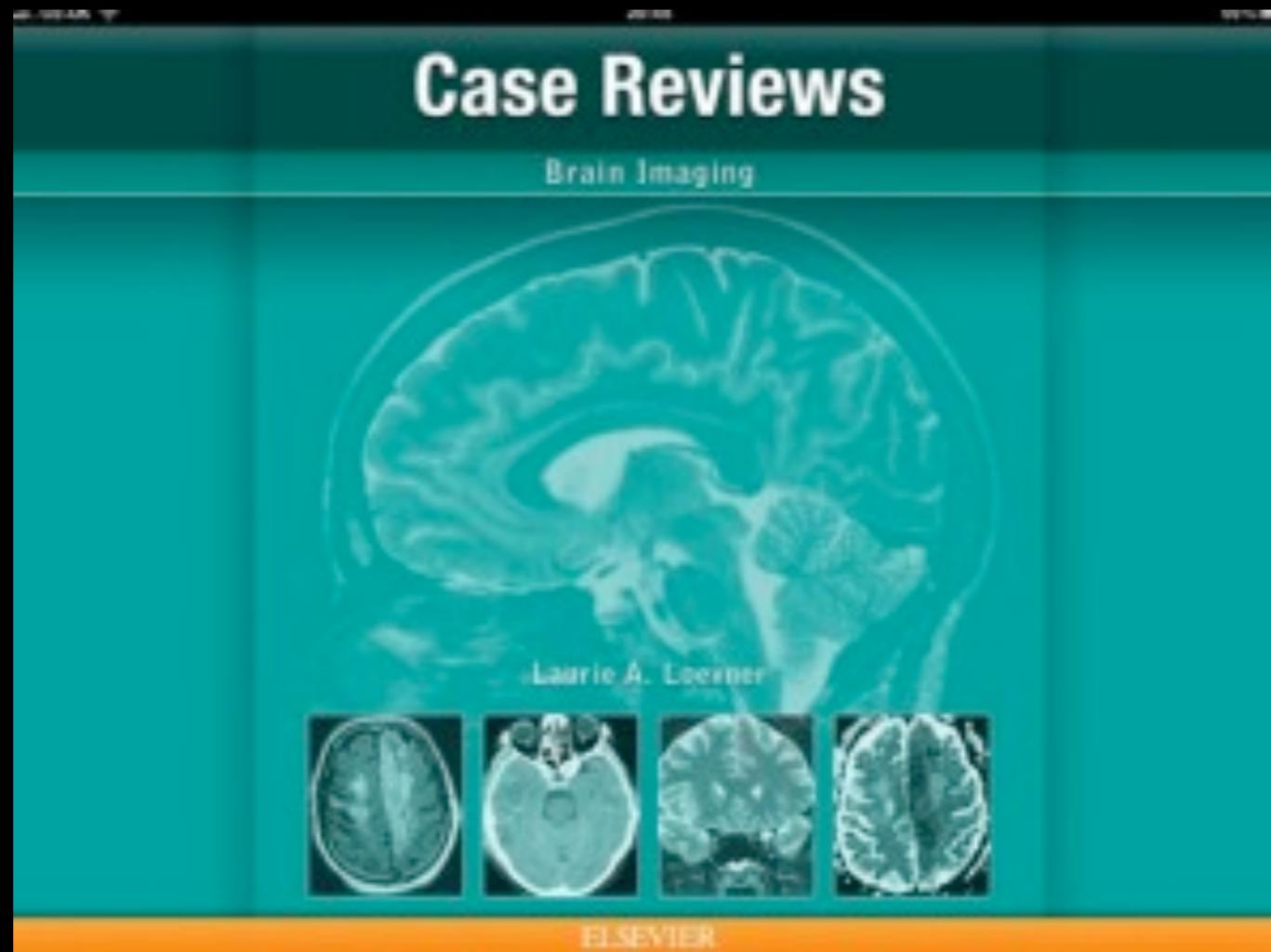




“I reviewed the case review series three times!”

-Every other resident

Subarachnoid Hemorrhage



ACR's *Case*
in Point

RAD PRIMER

Radiology Resident Education

RG

← Subarachnoid Hemorrhage →

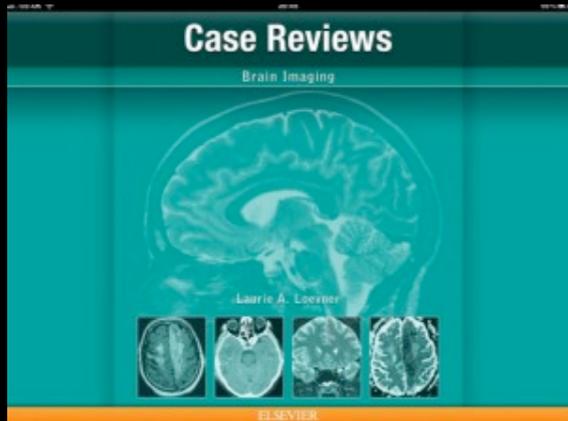
RSNA[®]

Radiological Society
of North America

AJNR

ASNR

AMERICAN SOCIETY OF NEURORADIOLOGY



Plan for learning

- Test yourself frequently

Plan for learning

- Space your learning
- Revisit concepts

There are several active learning techniques

- Audience response
- Flipped-classroom
- Peer-led learning
- Small groups



I'M STILL
DRUNK



“Teaching without learning...
is just talking.”

–Angelo and Cross



