Minute Paper
Brainstorming Session

How do you physically learn and recall information?
What is the mechanism?

Zull's Biological Description

Brain contains 100 Billion neuron cells

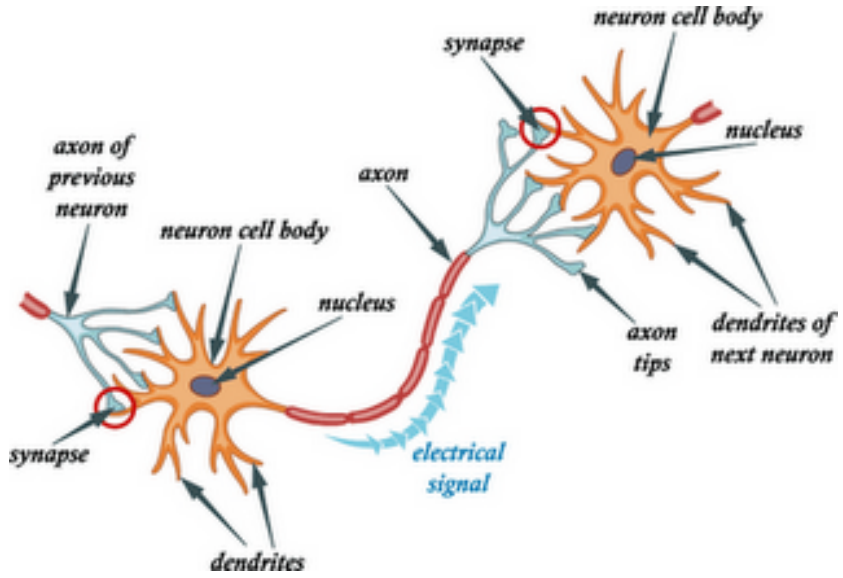
Axons fingers between neurons
to communicate with chemicals

Single neuron can have 10s of thousands connections!

Connections driven by sensations, thoughts or new actions!

Connections fade over time, thus need reinforcement

Neurons that ***Fire together, Wire Together!***



Which class do you prefer? Why?

Blocked Class Sessions	Interleaved Class Sessions
Monday: Topic A, Problem-Solving Session	Topic A, Problem-Solving Session, Topic B
Wednesday: Topic B, Problem-Solving Session	Topic B, Problem-Solving Session, Topic C
Friday: Topic C, Problem-Solving Session, Quiz	Topic C, Problem-Solving Session, Review or Quiz

Blocked *Interleaved*

How does this relate to how we learn and recall information?

Blockers Vs Mixers Study

Blockers

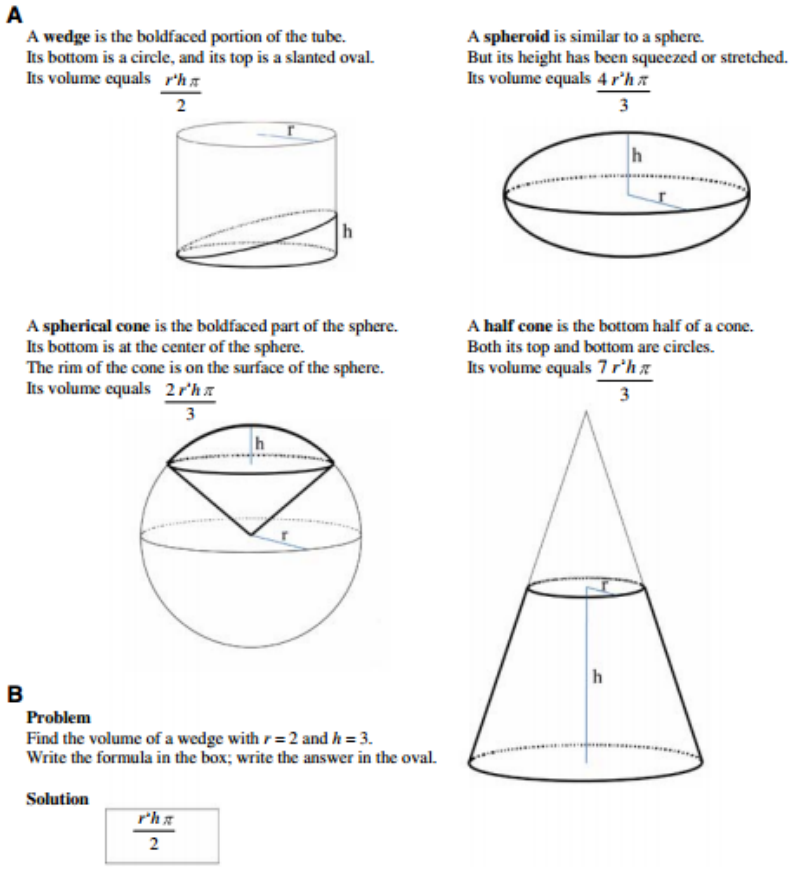
- Learned Shape A
- Answered Problems Shape A
- Progressed through shapes

Mixers

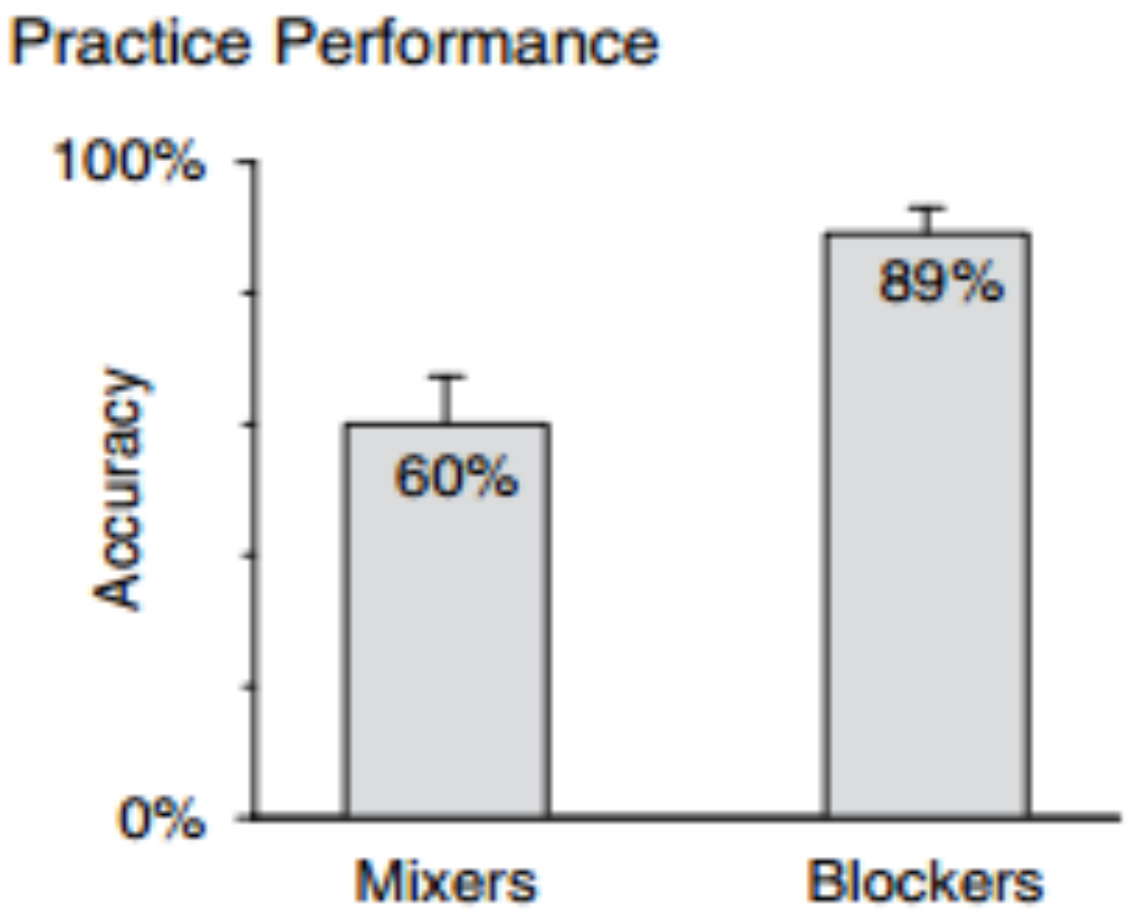
- Learned all shapes
- Answered a mixed problem set

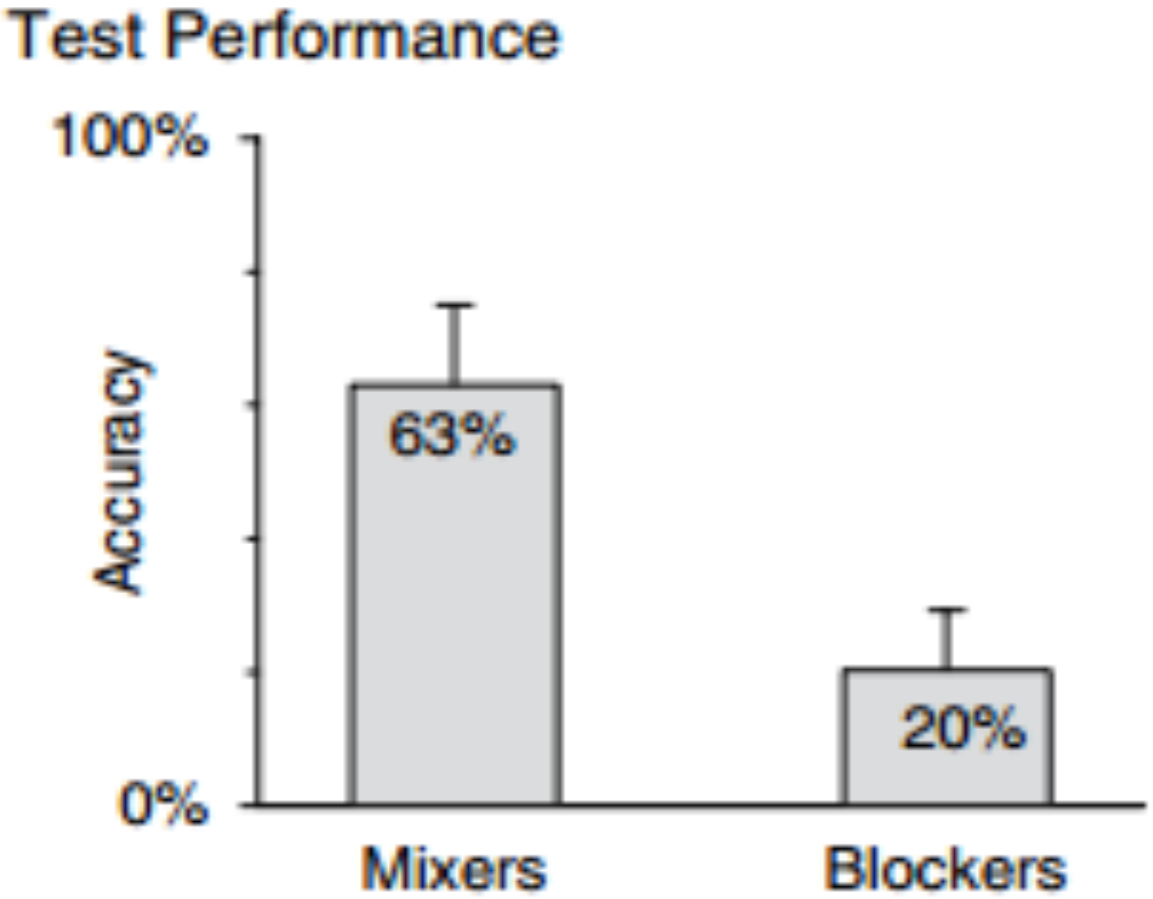
Practice Tested on day of instruction

Tested after 1 week



Results


Practice Performance
100%
Accuracy
0%
60%
89%
Mixers
Blockers

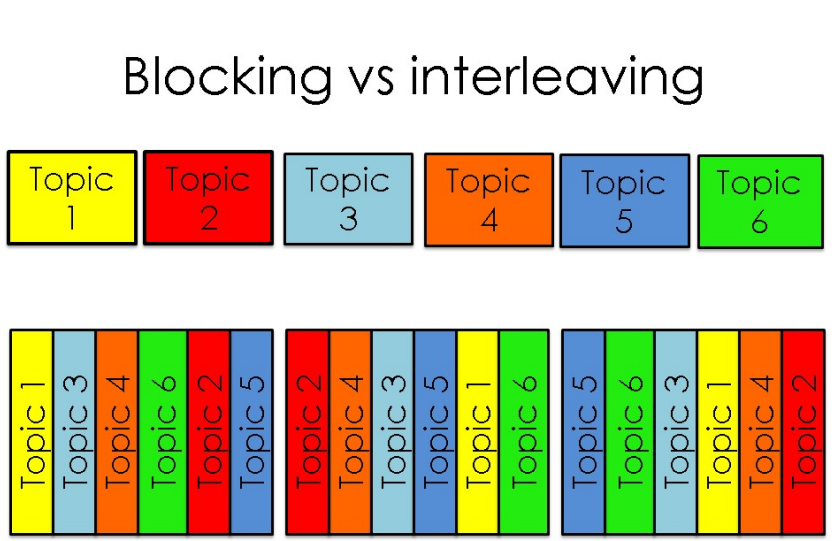

Test Performance
100%
Accuracy
0%
63%
20%
Mixers
Blockers

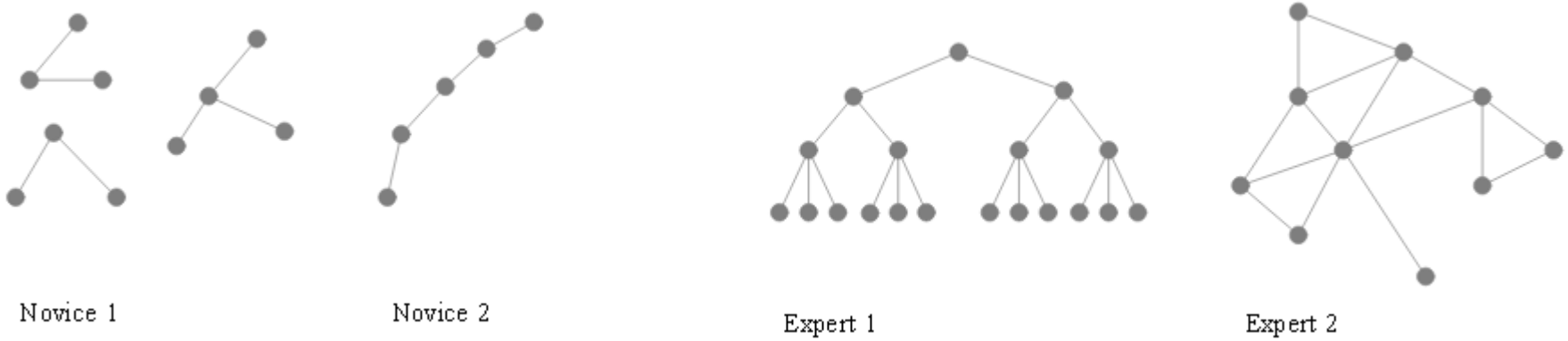
Principals of Structure

Blocked and Interleave Material

Keep it small, Keep it frequent

Explain and Support (and Support)





Video Asking Questions

https://youtu.be/yRZZpk_9k8E?t=33s

Connection Techniques

Course Outlines

Interleaving Topics

Peer Reinforcement