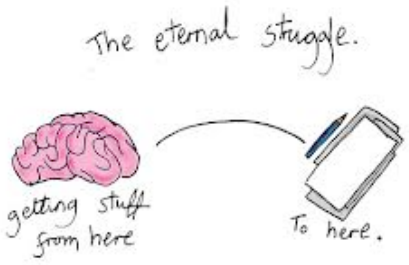
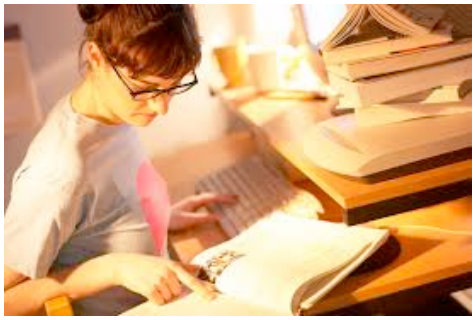
H-126 Week 10: Cognitive Training

Today's Section

- Logistics (10 minutes)
  - Final Paper Rubric
- Lecture Review (10 minutes)
- Quality criteria for Brain-Based Products (10 minutes)
- Small group activity (25 minutes)
- Questions (5 minutes)



Final Paper



- **DUE MONDAY 11/27 (2 weeks from today)**
- Full rubric posted on Canvas (ask TFs if you have questions)
- If you'd like feedback on an outline, send it to your TF by next week, **Monday 11/20**.

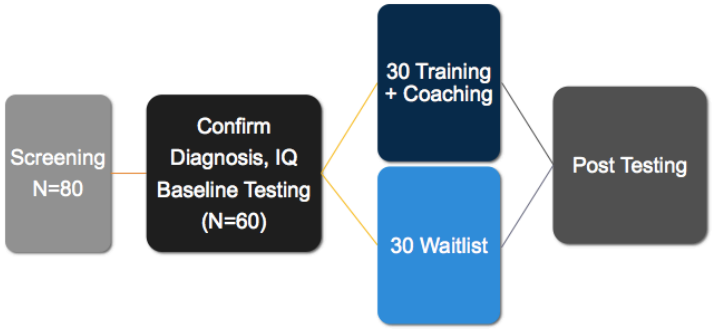
Lecture Review

- What are some different types of plasticity & some examples of each type?
- What is the neuronal mechanism that produces plasticity?
- What are some types of "brain training?"
- What is the purpose of "randomization" in randomized control trials?
- What does it mean for a study design to be "double blind" and why is it important?
- What do the terms 'near transfer' and 'far transfer' relate to? Why is far transfer important/desirable?
- What should we look for when choosing appropriate control groups?

Design an intervention study

- A good intervention study involves:
  - Selecting a population of interest
  - Randomly sampling from that population
  - Obtaining baseline measures
  - Randomly assigning subjects to a treatment or a control condition
  - Obtaining post-test measures

- An intervention study might find no effect (or a negative effect) of the intervention, improvement on the task of interest (but no other tasks), improvement on the task of interest and similar tasks (near transfer), or improvement on those tasks as well as less closely-related tasks (far transfer).



Example from Susan Faja's GAMES project

NEAR TRANSFER

- transfer between very similar contexts
  - When a mechanic repairs an engine in a new model of car, but with a design similar to prior models

FAR TRANSFER

- transfer between contexts that seem alien to one another
  - A chess player may apply basic strategies to investment practices or policies

MBE "Seal of Approval"

- Imagine that you have been tasked by the International Mind, Brain and Education Society (IMBES) to promote informed customer choice about cognitive training programs.

- As part of this endeavor, IMBES wants to come up with a collection of 'quality criteria' with which to rate products on the marketplace. Products which meet criteria and pass the test will earn the coveted 'MBE Seal of Approval'.

- In groups of 4-6, decide what the key quality criteria are that should be considered. Take into account:
  - Standards of scientific evidence
  - Appropriateness and generalizability of claims
  - Responsible marketing strategies

- Share out to the class; we'll decide on a final list!

MBE "Seal of Approval"

- NOW: Break into groups and rate the following "brain-based" programs according to the criteria you've selected

- Each group will pick one of the following:
  - Cogmed (www.cogmed.com)
  - Mindsparke (www.mindsparke.com)
  - Lumosity (www.lumosity.com)

- As a group, research your chosen program and come up with a short presentation (max. 4 minutes each) that captures the key features of each of these neuroeducational products.

- Be sure to consider each of these ***in light of the criteria you just came up with***. Did your product win the MBE Seal of Approval? Why or why not?

Questions?