

Objective: Upon completing this lesson, you will be able to summarize the benefits practicing has in encoding information into your long term memory.

Recall the three stages of memory from lesson 2: sensory (or immediate), working (or short-term), and long-term. Immediate and working memories are temporary memories. Our goal in learning is to successfully encode and make connections in long term memory so we can correctly recall and utilize them when needed.

Practice is key to maintaining connections in the brain. We want to get the information to long-term memory and **not** just store it until test time. It is true that if you don't use it, you lose it. The old saying "practice makes perfect" isn't accurate. A more accurate version is 'perfect practice makes permanent.'

The study cycle is built around the concept of practicing effectively. As a student, you want to go beyond rote learning or just doing as little as possible to get by. You need to be in charge of your learning and knowing if you are actually learning (that's metacognition). You need to strive to do your best and only you can control that.

Remember that we want to build dendrites from the neurons and increase the thickness of the myelin sheath surrounding the axons so the signals are stronger and permanent. We do this with PRACTICE.

Research states that we learn:

- 10% of what we READ
- 20% of what we HEAR
- 30% of what we SEE
- 50% of what we SEE and HEAR
- 70% of what is DISCUSSED with OTHERS
- 80% of what is EXPERIENCED PERSONALLY
- 95% of what we TEACH TO SOMEONE ELSE

Notice that the study cycle takes you through each of the experiences listed above but you have to participate in each step. Reading the lesson before coming to class gets you started. Watching the videos, attending and participating in lecture helps you see, hear and discuss the topics. Homework helps you experience the topics and labs are where you discuss the topics with others and have the opportunity to help others. It also provides a review that requires you to recall previous material.

Each of these steps involves practice which helps build dendrites and thicken the myelin sheath!

Once a concept has been introduced and you are ready to practice,

1. Be sure to TRY first before asking for help or referring to other resources. This will make your brain work on making connections and recalling on its own. Each time you recall information, you relearn it.
2. Disconnect. Turn off the cell phone and other distractions so your process doesn't get interrupted.
3. Take breaks. Remember that the synapse needs a break now and then to replenish the neurotransmitters, so taking a break every 20 minutes or so can help. It's best to practice over spaced intervals and not cram everything into one study time.

1. Describe another area, other than math, where you have had to practice to improve your understanding or skills **and** how you practiced to achieve your goal.

2. Summarize in your own words how practice helps to encode information into the long term memory.

3. Explain why you think you should try a problem first before asking questions or looking at your notes.