

20 Memory Techniques

Experiment with these techniques to develop a flexible, custom-made memory system that fits your style of learning the content of your courses and the skills of your sport. The 20 techniques are divided into four categories, each which represents a general principle for improving memory.

Organize it

1. **Be selective.** To a large degree, the art of memory is the art of selecting what to remember in the first place. As you dig into your textbooks, playbooks, and notes, make choices about what is most important to learn. Imagine that you are going to create a test on the material and consider the questions you would ask. When reading, look for chapter previews, summaries, and review questions. Pay attention to anything printed in bold type. Also notice visual elements, such as charts, graphs, and illustrations. All of these are clues pointing to what's important. During lectures, notice what the instructor emphasizes. During practice, focus on what your coach requires you to repeat. Anything that presented visually—on the board, on overheads, or with slides—is also key.
2. **Make it meaningful.** One way to create meaning is to learn from the general to the specific. Before tackling the details, get the big picture. Before you begin your next reading assignment, for example, skim it to locate the main idea. If you're ever lost, step back and recall that idea. The details might make more sense. You can also organize any list of items—even random ones—in a meaningful way to make them easier to remember.
3. **Create associations.** The data already encoded in your neural networks is arranged according to a scheme that makes sense to you. When you introduce new data, you can remember it more effectively if you associate it with similar or related data. Think, for example, about your favorite courses. They probably relate to subjects that you already know something about. Preview readings assignments, and complete those readings before you attend lectures. Before taking upper level courses, master the prerequisites. Even when you're tackling a new subject, you can build a mental store of basic background information—the raw material for creating associations. The bottom line: to remember more, associate new facts and ideas with something that you already know.

Use your body

4. **Learn it once, actively.** To remember an idea, go beyond thinking about it. Do something with it. Action is a great memory enhancer. Study your assignments with the same energy that you bring to the dance floor or the basketball court. You can create your own opportunities for action. For example, your sociology class might include a discussion about how groups of people resolve conflict. See if you can apply any of these ideas to resolving conflict in your own family. Use other simple and direct methods to infuse your learning with action. When you sit at your desk, sit up straight. Sit on the edge of your chair, as if you were about to spring out of it and sprint across the room. Also experiment with standing up when you study. It's harder to fall asleep in this position. Some people insist that their brains work better when they stand. Pace back and forth and gesture as you recite material out loud. Use your hands. Get your whole body involved. Learning can be deceptive. Most learning, especially in higher education takes place in a passive setting. Students are

seated, quiet and subdued. Don't be fooled. Learning takes energy. When you learn effectively, you are burning calories, even if you are sitting at a desk reading a textbook.

5. **Relax.** When you're relaxed, you absorb new information quickly and recall it with greater ease and accuracy. Students who can't recall information under stress of a final exam can often recite the same facts later when they are relaxed. Relaxing might seem to contradict the idea of active learning explained in technique #4, but it doesn't. Being relaxed is not the same as being drowsy, zoned out, or asleep. Relaxation is a state of alertness, free of tension, during which your mind can play with new information and apply memory techniques. "Mellowing out" might do more than lower your blood pressure. It might help you succeed in school.
6. **Create pictures.** Draw diagrams. Make cartoons. Use these images to connect facts and illustrate relationships. Associations within and among abstract concepts can be "seen" and recalled more easily when they are visualized. The key is to use your imagination. For example, Boyle's law states that at a constant temperature, the volume of a confined ideal gas varies inversely with its pressure. Simply put, cutting the volume in half doubles the pressure. To remember this concept, you might picture someone "doubled over" using a bicycle pump. As she increases the pressure in the pump by decreasing the volume in the pump cylinder, she seems to be getting angrier. By the time she has doubled the pressure (and halved the volume) she is boiling ("Boyle-ing") mad. To visualize abstract relationships effectively, create an action-oriented image, such as the person using the pump. Make the picture vivid, too. The person's face could be bright red. And involve all your senses. Imagine how the cold metal of the pump would feel and how the person would grunt as she struggled with it. (Most of us would have to struggle. It would take incredible strength to double the pressure in a bicycle pump, not to mention a darn sturdy pump.)
7. **Recite and repeat.** When you repeat something out loud, you anchor the concept in two different senses. First, you get physical sensation in your throat, tongue, and lips when voicing the concept. Second, you hear it. The combined result is synergistic, just as it is when you create pictures. That is, the effect of using two different senses is greater than the sum of their individual effects. The repetition part is important, too. Repetition is common memory devise because it works. Repetition blazes a trail through the pathways of your brain, making the information easier to find. Repeat a concept out loud until you know it, then say it five more times. Recitation works best when you recite concepts in your own words. For example, if you want to remember that the acceleration of falling body due to gravity at sea level equals 32 feet per second per second, you might say, "Gravity makes an object accelerate 32 feet per second faster for each second that it's in the air at sea level." Putting it in your own words forces you to think about it. Have some fun with this technique. Recite by writing a song about what you're learning. Sing it in the shower. Or imitate someone. Imagine your textbook being read by Bill Cosby, Madonna, or Clint Eastwood ("Go ahead, punk. Make my density equal mass over volume").
8. **Write it down.** This technique is obvious, yet easy to forget. Writing a note to yourself helps you remember an idea, even if you never look at the note again. Writing engages a different kind of memory than speaking. Written reviews reveal gaps in knowledge that oral reviews miss, just as oral reviews reveal gaps that written reviews miss. In addition, writing is physical. Your arm, your hand, and fingers join in. Remember, learning is an active process - you remember what you do.

Use Your Brain

9. **Engage your emotions.** One powerful way to enhance your memory is to make friends with your amygdala. This is the area of your brain that lights up with extra neural activity each time you feel a strong emotion. When a topic excites love, laughter, or fear, the amygdala sends a flurry of chemical messages that say, in effect: This information is important and useful. Don't forget it. You're more likely to remember course material when you relate it to a goal—whether academic, personal or career—that you feel strongly about. This is one reason why it pays to be specific about what you want. The more goals you have and the more clearly they are defined, the more channels you create for incoming information. You can use this strategy even when a subject seems boring at first. If you're not naturally interested in a topic, then create interest. Find a study partner in class—if possible, someone you know and like—or form a study group. Also consider getting to know the instructor personally. When a course creates a bridge to human relationships, you engage the content in a more emotional way.
10. **Overtlearn.** One way to fight mental fuzziness is to learn more than you need to know about a subject simply to pass a test. You can pick a subject apart, examine it, add to it, and go over it until it becomes second nature. This technique is especially effective for problem solving. Do the assigned problems, and then do more problems. Then make up your own problems and solve them.
11. **Escape the short-term memory trap.** Short-term memory is different from the kind of memory you'll need during exam week. For example, most of us can look at an unfamiliar seven-digit phone number once and remember it long enough to dial it. See if you can recall the number the next day. Short-term memory can fade after a few minutes, and it rarely lasts more than several hours. A short review within minutes or hours of a study session can move material from short-term memory into long-term memory.
12. **Use your times of peak energy.** Study your most difficult subjects during the times when your energy peaks. Many people can concentrate more effectively during daylight hours. The early morning hours can be especially productive, even for those who hate to get up with the sun. Observe the peaks and valleys in your energy flow during the day and adjust study times accordingly.
13. **Distribute learning.** As an alternative to marathon study sessions, experiment with shorter, spaced-out sessions. These are particularly helpful when your sport is in its competitive season. You might find that you can get far more done in three two-hour sessions than in one six-hour session. For example, when you are studying for your American history exam, study for an hour or two and then wash the dishes. While you are washing the dishes, part of your mind will be reviewing what you studied. Return to American history for a while, then call a friend. Even when you are deep in conversation, part of your mind will be reviewing history. You can get more done if you take regular breaks. You can even use the breaks as mini-rewards. After a productive study session, give yourself permission to log on and check your e-mail, listen to a song, or play 10 minutes of hide-and-seek with your kids. By taking periodic breaks while studying you allow information to sink in. During these breaks, your brain is taking the time to literally rewire itself by growing new connections between cells. Psychologists call this process consolidation. There is an exception to this idea of allowing time for consolidation. When you are so engrossed in a textbook that you cannot put it down, when you are consumed by an idea for a term paper and cannot think of anything else—keep going. The master student within you has taken over. Enjoy the ride.

14. **Be aware of attitudes.** If you think a subject is boring, remind yourself that everything is related to everything else. Look for connections that relate to your own interests. For example, consider a person who is fanatical about cars. She can rebuild a motor in a weekend and has a good time doing so. From this apparently specialized interest, she can explore a wide realm of knowledge. She can relate the workings of an engine to principles of physics, math, and chemistry. Computerized parts in newer cars can lead her to the study of data processing. She can research how the automobile industry has changed our cities and helped create suburbs, a topic that includes urban planning, sociology, business, economics, psychology and history.
15. **Give your “secret brain” a chance.** Sometimes the way you combine studying with other activities can affect how well you remember information. The trick is to avoid what psychologists call retroactive inhibition, something that happens when a new or unrelated activity interferes with previous learning. Say that you’ve just left your evening psychology class, which included a fascinating lecture on Sigmund Freud’s theory of dreams. You then check your team schedule and realize that you have a competition coming up in two days. You begin to analyze your opponent and soon find that you can think about your opponent and soon find that you can think of little else. In this scenario, the key concepts of psychology lecture are pushed aside by your gripping concern about the competition. Consider another scenario instead. You arrange to carpool with a teammate who is in the same class. On the way home, you talk about the lecture. The discussion ignites into a debate as you and your friend take opposite stands on a principle of Freud’s theory. Later, just before going to sleep, your brain can now process the key points of the lecture—something that will come in handy for the mid-term exam. The beauty of this scenario is that you keep your head in your course work rather than worrying about the competition. In the process, your memory benefits.
16. **Combine techniques.** All of these memory techniques can work even better in combination. Choose two or three techniques to use on a particular assignment and experiment for yourself. For example, after you take a few minutes to get an overview of a reading assignment, you could draw a quick picture or diagram to represent the main point. Or you could over learn a chemistry equation by singing a jingle about it all the way to work.

Recall it

17. **Remember something else.** When you are stuck and can’t remember something that you’re sure you know, remember something else that is related to it. During an economics exam, if you can’t remember anything about the aggregate demand curve, recall what you do know about the aggregate supply curve. If you cannot recall specific facts, remember the examples that the instructor used during her lecture. Information is encoded in the same area of the brain as similar information. You can unblock your recall by stimulating that area of your memory. Brainstorming is another memory jog. If you are stumped when taking a test, start writing down lots of answers to related questions, and—POP!—the answer you want may appear. You can take this technique one step further with a process that psychologists call elaboration. The key is to ask questions that prompt you to create more associations. For example, when you meet someone new, ask yourself: “What are the distinctive features of this person’s face? Does she remind me of someone else?”
18. **Notice when you do remember.** To develop your memory, notice when you recall information easily and ask yourself what memory techniques you’re using naturally. Also, notice when it’s difficult to recall information and adjust your learning techniques. And remember to congratulate yourself when you remember.

19. **Use it before you lose it.** To remember something, access it a lot. Read it, write it, speak it, listen to it, apply it—find some way to make contact with the material regularly. Each time you do so, you widen the neural pathway to the material and make it easier to recall the next time. Another way to make contact with the material is to teach it. Teaching demands mastery. When you explain the function of the pancreas to a fellow student, you discover quickly whether you really understand it yourself. Study groups are especially effective because they put you on-stage: The friendly pressure of knowing that you'll teach the group can help focus your attention.
20. **Adopt the attitude that you never forget.** You might not believe that an idea or a thought never leaves your memory. That's OK. In fact, it doesn't matter whether you agree with the idea or not. It can work for you anyway. Test the concept. Instead of saying, "I don't remember," you can say, "It will come to me." Or even "I never forget!"

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