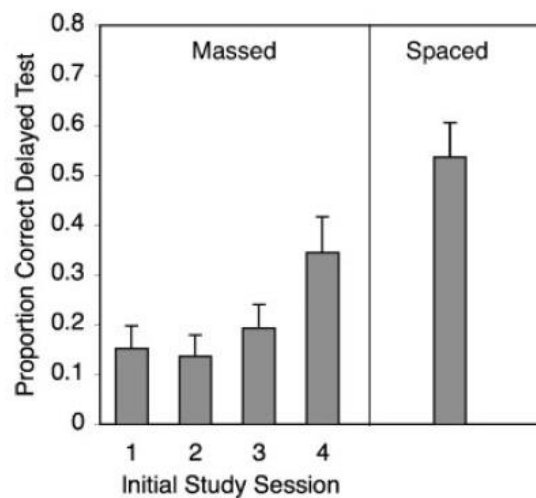


## Spaced Practice: Student Tip Sheet

Cramming involves studying large amounts of information in one long session, e.g., studying for 5 hours the night before an exam. The opposite of cramming is spaced practice (also known as distributed practice), which refers to a study schedule in which you divide your study time into shorter, separate study periods. If you planned to study a total of 5 hours for a test, a spaced practice schedule might be to study in five, one-hour time blocks every other day. This example highlights two key parts to spaced practice. One is that you study the material multiple times. The second is that you spread out the study sessions over time.

Does it really matter whether you cram or space your study? There is pretty convincing research evidence that spaced practice is better—you learn more material that lasts longer. For example, the graph below shows the results of a study in which students learned a list of synonyms (GRE type word pairs, e.g., apotheosis-deification). They studied either by cramming (massed practice) or spaced practice. In the massed condition students studied the material in one lengthy session either 1, 2, 3, or 4 days before taking the test. In the spaced condition, students studied the material in short sessions on different days up to four days before the test. Time was controlled so that all students studied the same amount of study time. As the graph indicates, students in the spaced condition far outperformed those in the massed conditions.



Even though spaced practice is superior to cramming, more than 50% of college students report that they cram for tests. Why is cramming so prevalent when it clearly is less effective than spaced practice? Students use cramming for several reasons.

- Some students don't realize that spacing is good and cramming is bad. They may think that studying too far in advance of a test is a waste of time because all the information will be forgotten by the time of the test. However, the exact opposite is true. You remember information from spaced practice far longer than from cramming.
- Students do not know how to establish and adhere to a study plan that incorporates spaced practice. Spaced practice requires serious time management and follow through. You must decide how much time to dedicate to studying for each course, how to allocate your study time, schedule it, and then follow it. Students often find it very difficult to make a viable plan and stick to it.

- Students may cram because it “works.” If you experience success with cramming, you may believe it is a viable study strategy. The problem is that you may pass the test, but you will forget most of the material quickly. In effect, this puts you further behind in the course because as you move on to the next part of the class, you still don’t know the material from the previous part.

**Recommendations for using spaced practice. If you don’t use spaced practice or don’t use it very effectively, here are some recommendations.**

1. Start small. If you have never used spaced practice before, it may be easiest to start by planning a study schedule for one course. Use a calendar to identify test dates and assignment due dates. Work backwards from these to identify the days and times you plan to study and work on assignments. A good rule of thumb is to plan at least three study sessions separated by 1-2 days each. It is important to separate study sessions by a day or two. After a day or two it may be a little more difficult to remember the material. But that’s good. The best time to restudy material is after you have started to forget it.
2. Use effective learning strategies. Some strategies are better than others. For example, self-testing is one of the most effective ways to study. This involves answering questions about the material without looking back at the book or your notes. Try to answer the questions first and then go back and review the ones that were difficult. Use part of your study sessions for self-testing. It may be a surprise but rereading the material is not very effective. In fact, self-testing is much more effective than rereading. Check out *Effective Learning Strategies* for more recommendations.
3. Study cumulatively. Test yourself over concepts from previous days or weeks. This means that you should study the same material several times—on different days. Each time you study material after a delay of several days, you strengthen your memory for it.
4. Work on trouble spots. Another benefit of spaced practice is that you can identify problems while you still have time to work them out. Suppose you have an exam in two weeks. As you are studying you realize there are some concepts or procedures you do not understand. The good news is that you can ask for help and work out the difficulties well before the test. If you wait to study all the material the day before the exam, there will be no time to work through any trouble spots.
5. Study cumulatively for finals all semester. Plan ahead for finals by restudying material throughout the semester. Every 2-3 weeks restudy important course material from earlier in the term. There will be no need to cram for the final at the end of the course.
6. Make a plan to stick to your study plan. Adopting a different study schedule can be challenging. Distractions and interruptions plague many students, e.g., too much texting and checking social media, or studying in a loud, intrusive setting, etc. Another problem is when other priorities take precedence over studying, e.g., work or family commitments. It is a good idea to recognize these challenges and plan for them. One strategy is to schedule study time just as you would class time, e.g., put a 45-minute study period on your calendar and treat it just like going to class.

Another common problem is attempting to multitask while studying, i.e., trying to engage in two different activities simultaneously. Research has shown that people cannot attend to two complex activities simultaneously. Instead when you try to do two things, you actually shift your attention back and forth. This is inefficient. It takes more time (not less time) the quality of your work suffers (you make more mistakes), and it leads to fatigue (it's more tiring). Students who chronically multitask, especially with social media, have lower grades than students who avoid distractions. If chronic inattention and distractions are a problem for you, try to develop a new habit in which you commit yourself to 30-40 minutes of uninterrupted study time (turn off your phone) followed by a 5-10-minute break.

**Additional resources to help you use spaced practice**

Effective Learning Strategies [under construction]

[Spaced Practice Study Plan for Exams](#)