

A New Way To Structure Learning?

“CRAMMING” vs. DISTRIBUTED *Learning*

By Barbara Bernstein



As important as new methods of education reform are today, one reliable way to improve students' understanding and retention has been around for a long time. It doesn't cost a dime in terms of texts or materials, yet it is rarely implemented.

Students learn more easily if they “nibble” at concepts for weeks instead of studying them intensely for two days and then moving on to another concept. Since this issue was first studied in the 1940s and 1950s, there has been considerable evidence that suggests “distributed practice” yields better understanding and retention than “massed practice.”

In *Principles of Learning and Memory*, Bugelski (1979) asserts, “It had long been claimed that spacing out or distributing a learning experience over a number of trials (days or weeks apart) was a better way to learn and retain some matter than putting in a heavy cram session and trying to learn something in one extended period.” Bugelski explains that in a spaced situation, the learner can figure out from one trial to the next which portions of the material he or she already understands and put in more time and effort on the parts of the lesson he or she finds more difficult.

Similar findings are described by Hergenhahn and Olsen (1993), who believe fatigue builds up when material is studied in one lengthy time period. Ellis (1978) also cited fatigue as the reason distributed practice is better than massed practice in the acquisition of motor skills.

Eight years after the original lessons, John Anderson (1990) tested the retention of students who had studied Spanish

vocabulary. Students who had massed all their study into one day retained only about half as much as the students who had distributed their study time.

A 1992 study by Michael Grote found the same pattern among students studying science material. “Although the superiority of distributed practice over massed practice is well documented in psychological laboratory situations,” Grote stated, “very little has been written concerning this technique in actual classroom applications. The technique is a useful tool for teachers because it results in significantly better long term retention.”

Why isn't distributed learning used more in schools? Is it because educators tend to approach subjects one unit at a time? Is it because review is not stressed enough?

Summer school is an example of the limitations of massed learning. This is a difficult way to learn an entire year's worth of material. Even though the number of hours a student meets with a teacher is equivalent, it is very difficult to cram all the concepts of a math course or the facts of a history course into a few weeks.

STRATEGIES FOR BETTER LEARNING

In light of the research, educators should consider reorganizing their courses. Why not have teachers give an overview of the entire year's material during the first few weeks? Then the teacher could go through the topics in greater depth during the rest of the semester. In the second semester, the teacher could go through all the course material again—this time in real depth.

Other ideas include:

- At the end of each class, reserve five minutes to discuss material covered in a prior class.
- At the end of each school year, introduce some key concepts that will be covered in the following year's courses.

Students are generally more comfortable with material they have seen before. And, they are less anxious about catching on immediately when they know they will be seeing it again and again. The psychological benefits of this approach are as great as the educational benefits.

Why are we not seeing a massive reorganization of the curriculum in line with this research on learning theory? After all, it is a virtually cost-free way to dramatically increase how much students learn and retain. Could we ask for anything more? **HSM**

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