

A. Why doesn't cramming work?

Immediate repetition helps us remember something for a short time—i.e., just a few seconds or minutes later—but only because that information is in short-term memory. That information is not durable or stable. It quickly leaves short-term memory and gets encoded in long-term memory.

The information's "memory trace" into long-term memory is not very strong. It is hard to trace the path to that information. If we never try to find it again, it gets lost.

Cramming increases the amount of information in short-term memory, but it does not improve our long-term memory. Cramming is of little use if you need to remember something beyond a short-term frame.

B. Why does spaced practice work?

We forget over time. When learning opportunities are spaced apart, we lose a bit of the information. The memory traces are not strong enough to follow. With the increased effort to find the information, the brain fortifies its pathway to the information. Spaced practice is a way to strengthen and broaden those pathways to the information.

Also, every time we find the information and use it, we "touch it" a bit and add new associations and contexts to the information. This makes the memory more connected to other parts of the brain. This makes the memory easier to find the next time around. Spaced practice improves our retrieval of information and the access we have to it.