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| the spacing effect, psychologists have been urging educators to use it to accelerate human progress. After all, there is a tremendous amount of material we might want to know. Time is short".  Wolf, Gary. 2008. "Want to Remember Everything You'll Ever Learn? Surrender to This Algorithm." *WIRED*. https://www.wired.com/2008/04/ff-wozniak/.  "To put it simply, if you want to know the optimal distribution of your study time, you need to decide how long you wish to remember something," Wiseheart and Pashler's group wrote. The optimal interval ranges can be read off a simple chart: | *A Contribution to Experimental Psychology*. The book became the founding classic of a new discipline.  Ebbinghaus discovered many lawlike regularities of mental life. He was the first to draw a learning curve. Among his original observations was an account of a strange phenomenon that would drive his successors half batty for the next century: the spacing effect.  Ebbinghaus showed that it's possible to dramatically improve learning by correctly spacing practice sessions. On one level, this finding is trivial; all students have been warned not to cram. But the efficiencies created by precise spacing are so large, and the improvement in performance so predictable, that from nearly the moment Ebbinghaus described |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 1 year | 6 Months | 3 Months | 1 Month | 1 Week | **Time to Test** | | 1 Month | 3 Weeks | 2 Weeks | 1 Week | 1-2 Days | **First Study Interval** |   "That optimal first interval declines as a proportion of the time-to-test, the Internet study found. If the test is in a week, the best interval is a day or two (20 to 40 percent). If it is six months, the best interval is three to five weeks (10 to 20 percent). Wait any longer between study sessions, and performance goes down fairly quickly". | "In the late 1800s, a German scientist named Hermann Ebbinghaus made up lists of nonsense syllables and measured how long it took to forget and then relearn them. (Here is an example of the type of list he used: bes dek fel gup huf jeik mek meun pon daus dor gim ke4k be4p bCn hes.) In experiments of breathtaking rigor and tedium, Ebbinghaus practiced and recited from memory 2.5 nonsense syllables a second, then rested for a bit and started again. Maintaining a pace of rote mental athleticism that all students of foreign verb conjugation will regard with awe, Ebbinghaus trained this way for more than a year. Then, to show that the results he was getting weren't an accident, he repeated the entire set of experiments three years later. Finally, in 1885, he published a monograph called *Memory*: |
| "Let's take an example. Say there's a German exam in three months or so at the end of the semester. Most of us will spend at least two months learning what it is we need to know for the exam, leaving at most a few weeks to review, if that (graduate students excepted). Let's say fifteen days, that's our window. For convenience, let's give ourselves nine hours total studying time for that exam. The optimal schedule is the following: Three hours on Day 1. Three hours on Day 8. Three hours on day 14, give or take a day. In each study session, we're reviewing the same material. On Day 15, according to the spacing effect, we'll do at least as well on the exam compared to nine hours of cramming". | TEACH ME KNOWLEDGE  *Spaced Repetition* |
| "The payoff is that we will retain the vocabulary for much longer, many months in thisexample"**.**  "Remember, spacing is primarily a retention technique. Foreign languages. Science vocabulary. Names, places, dates, geography, memorizing speeches".  Carey, Benedict. 2014. *How We Learn: The Surprising Truth about When, Where, and Why It Happens*. New York: Random House. | Learning Objects  December 2016 Mita Williams  aedileworks.com  cc-by |