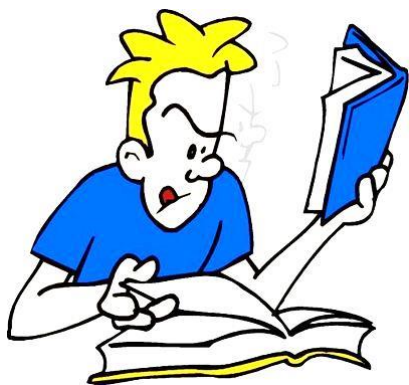


## Desirable Difficulties

Desirable difficulties are defined as, “better conditions of learning that, while apparently creating difficulty, actually lead to more durable and flexible learning.” The harder it feels to learn something, the harder it is going to be to forget it once you learn it. You might feel more confident using strategies that are less mentally difficult, but recalling that information later will be more troublesome. Strategies that seem taxing will pay off in the long run.

### Things to Remember:

- ∞ Study in different locations.
- ∞ Space out study sessions.
- ∞ Interleave different problem types.
- ∞ Set up a reward system.
- ∞ Don't be discouraged by difficulty.



## References

Bjork, E. L., & Bjork, R. (2011). *Psychology and the real world*. New York: Worth Publishers.

Carey, B. (2010, September 06). Forget what you know about good study habits. *The New York Times*.

Tichenor, J.L. (1977). Self-Monitoring and Self-Reinforcement of Studying by College Students. *Psychological Reports: Volume 40, Issue , pp. 103-108*.

Kornell, N. (2009). Optimizing learning using flashcards: Spacing is more effective than cramming. *Applied Cognitive Psychology, 23(9), 1297-1317*.

Kornell, N., Hays, M., & Bjork, R. A. (2009). Unsuccessful Retrieval Attempts Enhance Subsequent Learning. *Journal Of Experimental Psychology. Learning, Memory & Cognition, 35(4), 989-998*. doi:10.1037/n0015729

Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2008). *Learning Styles: Concepts and Evidence*. *Psychological Science In The Public Interest (Wiley-Blackwell)*

Roediger, H. L. I., & Pyc, M. A. (n.d.). Inexpensive techniques to improve education: Applying cognitive psychology to enhance educational practice. (2012). *Journal of Applied Research in Memory and Cognition*.

Sparks, S. D. (2011). Studies Find 'Desirable Difficulties' Help Students Learn. *Education Week, 30(29), 6*.

Taylor, K. & Rohrer, D. (2010). The effects of interleaved practice. *Applied Cognitive Psychology, 24(6), 837-848*.

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# Improving Your Study Habits

St. Thomas Aquinas College

Counseling & Psychological Services

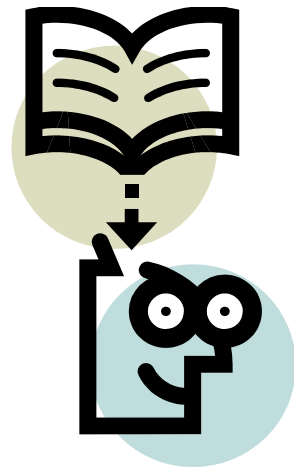
# Myth vs. Fact

## Previously held ideas:

- ∞ Study in a quiet work space.
- ∞ Have a set study time.
- ∞ Cramming will help you learn.
- ∞ Do not bribe.
- ∞ You should master one concept before moving to the next.
- ∞ People have different learning styles and do better when taught through their specific style.

## Recently developed ideas:

- ∞ Alternate the **locations** of studying.
- ∞ Work with an **interleaved** practice.
- ∞ Use a **spacing** schedule.
- ∞ Forgetting is okay, if you **correct** it.
- ∞ Learning should be **reinforced**.
- ∞ **Desirable** difficulties help you learn.



## Alternate Locations

Associative learning is a term that refers to an association that is created when two different events occur together. During studying, associations are being made between what is being studied and the background sensations at the time. While studying in a certain area, you will learn to associate what you are studying with your location. It will be easier to recall this information in this particular setting compared to others. By studying in multiple locations, you will better learn the information you are studying, because it won't be associated with a certain place.

## Interleaving (vs. Blocking)

Doug Rohrer Previous research shows that an interleaved practice (abcbcacab) is more effective than a blocked practice (aaabbbccc). Interleaving requires a student to switch between different tasks, allowing them to learn how to pair each task with an appropriate procedure. With blocking, students can solve practice problems, but will not learn how to differentiate between problem types. Because interleaving is spaced across multiple episodes, you will learn to separate the particular skills and apply them to the correct situations.

## Spacing (vs. Cramming)

Cramming is used to boost a test score, but it will not supply you with long-term memory of the subject you are studying. The information will only be remembered for a short period of time. The spacing effect is the practice of spacing learning events apart, rather than massing them together. For example, if you study your notes before and after class, you are less likely to need to cram before the test. Spacing out the times you study allows for forgetting, so more learning occurs when re-studying, and you are more likely to remember the information long term.



**“Forgetting is a friend of learning...when you forget something, it allows you to relearn, and do so effectively the next time you see it.”**

**–Dr. Kornell, NY Times**

## Reinforced Learning

Positive reinforcement is a principle that works by adding a stimulus to increase a behavior. For example, if you wanted to increase the time you spend studying, you would come up with the amount of time you want to study for, and reinforce yourself after you complete the set amount of time. An example of reinforcement might be a half an hour break to watch your favorite TV show or a piece of chocolate. Because you are being rewarded for the behavior of studying, you are more likely to continue that behavior as long as it is being reinforced. This principle will increase the likelihood of studying, but not the effectiveness. This should be paired with