

*Let me think...*

## Study Strategies that work: Metacognition



Jill Alban, Ed.D.

Director of Academic Support

Paisley Rosengren, M.S.

Learning Specialist

Short Cuts to Success

August 20, 2018

# Overview

- 2 Common Study strategies that **don't** work
- Study strategies that **do** work
- **Metacognition, Self testing, Spaced repetition**
  - What is it?
  - How do you do it?
  - You may already be doing it!
  - Case Studies
  - Study Plan

# Today's Presentation

- We are going to talk about successful and unsuccessful study strategies.
- We will look at two case studies and by the end of the presentation, you will know why one student excelled while the other struggled.

# What are the Best and Worst Ways to Prepare for an Exam?

- There is a lot of evidence based research on study strategies.
  - What do you do?
- Research investigating how students learn was first conducted at highly competitive institutions.

**Table 4.** Utility Assessment and Ratings of Generalizability for Each of the Learning Techniques

Technique	Utility	Learners	Materials	Criterion tasks	Issues for implementation	Educational contexts
Elaborative interrogation	Moderate	P-I	P	I	P	I
Self-explanation	Moderate	P-I	P	P-I	Q	I
Summarization	Low	Q	P-I	Q	Q	I
Highlighting	Low	Q	Q	N	P	N
The keyword mnemonic	Low	Q	Q	Q-I	Q	Q-I
Imagery use for text learning	Low	Q	Q	Q-I	P	I
Rereading	Low	I	P	Q-I	P	I
Practice testing	High	P-I	P	P	P	P
Distributed practice	High	P-I	P	P-I	P	P-I
Interleaved practice	Moderate	I	Q	P-I	P	P-I

Note: A positive (P) rating indicates that available evidence demonstrates efficacy of a learning technique with respect to a given variable or issue. A negative (N) rating indicates that a technique is largely ineffective for a given variable. A qualified (Q) rating indicates that the technique yielded positive effects under some conditions (or in some groups) but not others. An insufficient (I) rating indicates that there is insufficient evidence to support a definitive assessment for one or more factors for a given variable or issue.

# Examples of Ineffective Study Strategies

- Highlight what you read
  - **Research shows that it does not help memory or learning.**
- The problem with highlighting as you read text for the first time is that you do not know what is important enough to highlight.

I had the worst study habits  
in the history of college,  
until I found out what I was  
doing wrong -- highlighting  
with a black magic marker

- lolz



## Example #2 of Ineffective Study Strategies

- Another ineffective study method is rereading.
- You may feel like you are getting to know the material better and better.



# Rereading

- Rereading is like someone explaining the same thing repeatedly.

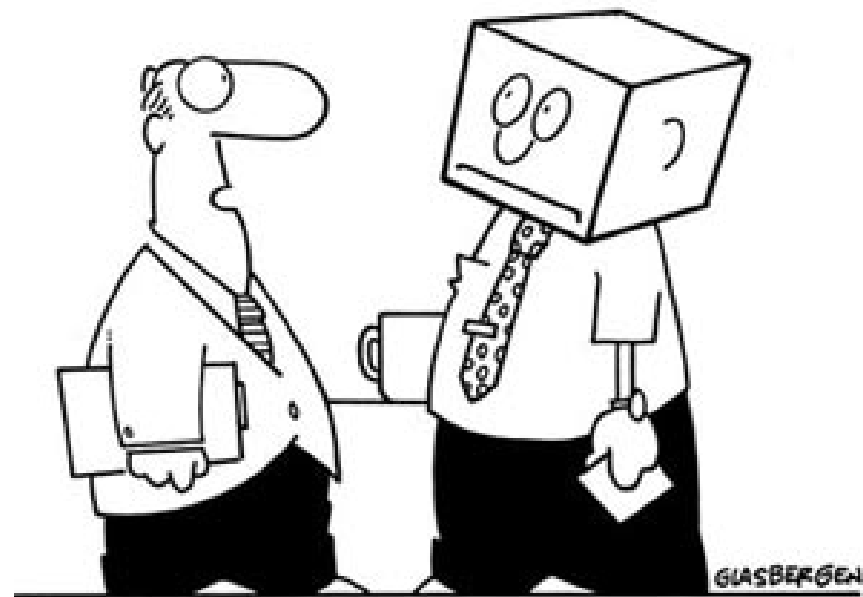
# Reviewing versus explaining

- Reviewing an explanation is not the same as being able to explain something yourself.

# The Flaw in Rereading

- The flaw in rereading is failing to know if you have learned the material-points to our first good study technique: self-testing and metacognition.
  - Self-testing may involve flashcards.
  - Designing questions that address your confusion as you are studying.
  - Fielding questions lobbed by a study buddy.

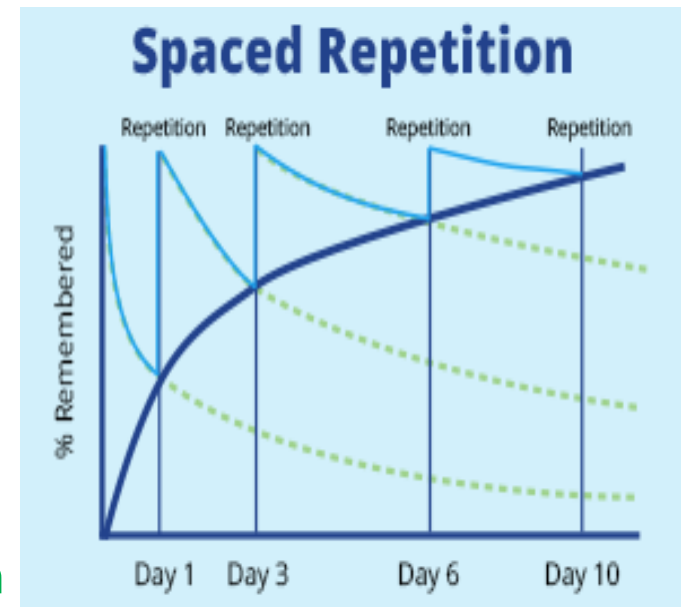
Copyright 2005 by Randy Glasbergen. [www.glasbergen.com](http://www.glasbergen.com)



**"Thinking outside of the box is difficult  
for some people. Keep trying."**

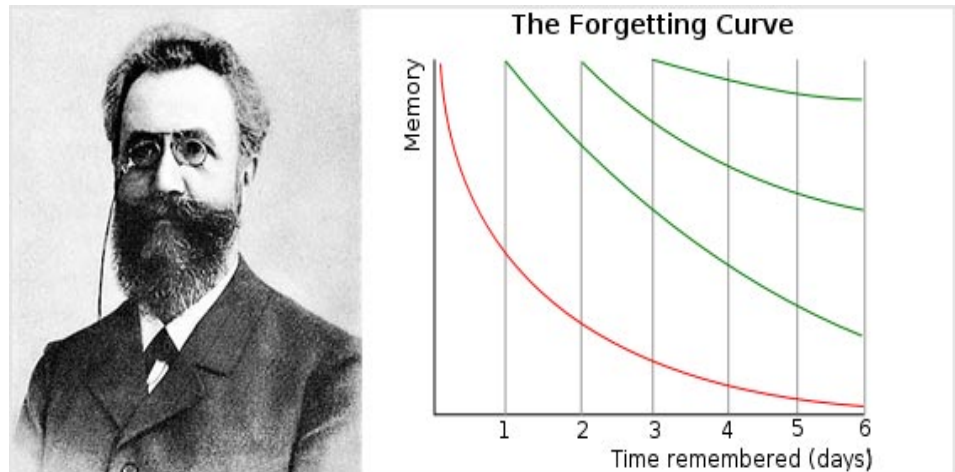
# Spaced repetition

- Origin: German psychologist – Hermann Ebbinghaus
- Over 100 years ago experimented with how learning and forgetting works
- Powerful, evidence based study technique
- Can enhance learning and long term retention of new knowledge



# Ebbinghaus – on forgetting

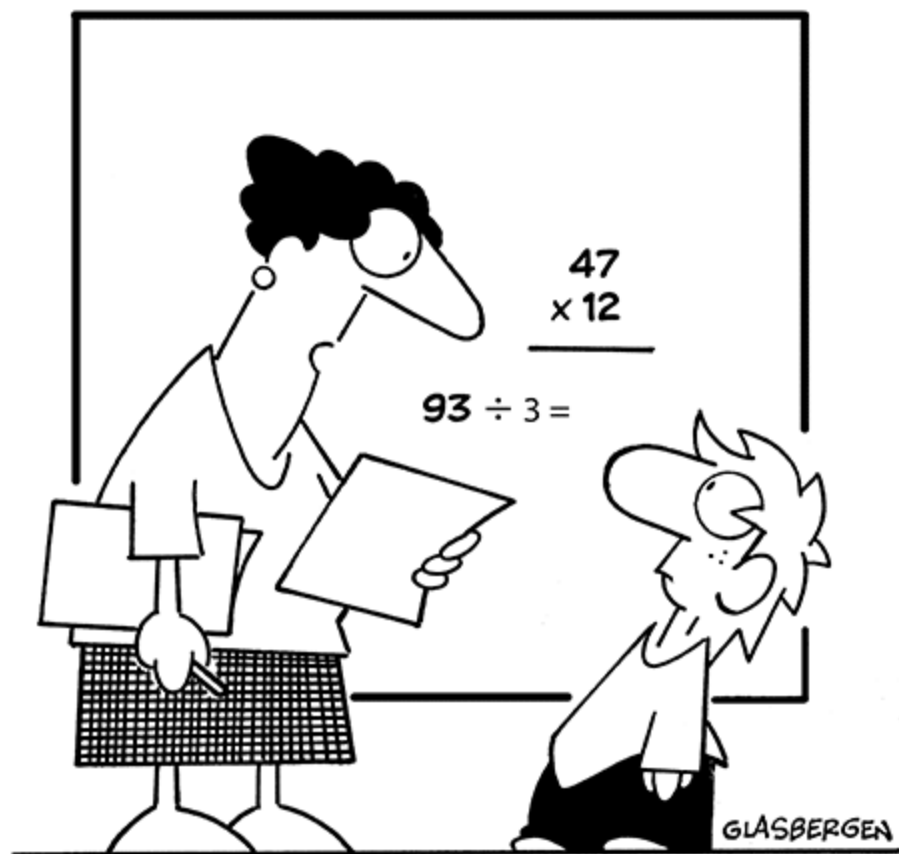
- Concept of “forgetting curve”:
  - “large amounts of forgetting occur quickly, followed by a more slow and steady decline in retention.”



# How quickly we forget

- Forgetting happens almost immediately after a student learns something.
- Within **20** minutes of learning some new information, students can only recall about **60%** of the information they just learned.
- By **9** hours, retention is less than **40%**
- By **10** days retention is less than **20%**

*Does this sound like you?*



**“Yes, love is the answer...but not on a math test.”**



# Self Testing

- Another research based study strategy
  - - Self-testing
- Self-testing requires metacognition.
- On par with spaced repetition it is one of the most research based study strategies.

# Benefits of Self Testing

- There are two main benefits of self-testing.
  1. Self testing offers an accurate assessment of what has been learned and whether one needs to keep studying.
  2. Studies show that self-testing is a great way to cement material into our long term memory.

# Two Case Studies

Let's discuss two case studies of students we may find.

Think about these cases as we discuss them. Think about why one excelled while the other struggled. What techniques did they employ?

# Student #1: Junie

- Junie announced she was happy to have had the Jewish holidays off in order to study for her block exams.
- Over the course of the week leading up to the exams she had studied 12 hours a day.
- She had not attended lectures but had spent hours reviewing media site, pathoma, her textbooks, highlighting and rereading.
- She was frustrated that she had failed her exams.

# Student #2: Patricia

- Patricia had begun studying after the first day of lectures. She previewed and reviewed the lectures thereafter.
- She reviewed her slides, objectives & noted her confusion.
- She made flashcards that she reviewed in small chunks. Studying no more than 3 hours at a time.
- She monitored her confusion by self-testing.
- When her study group did not seem to have the answer she went to her instructor for clarification.

# Study Strategies

- Why did Patricia excel and Junie did not?
- What were the differences in their study strategies?

# Differences in study strategies

- Junie crammed for her exams and used inefficient study strategies-highlighting and rereading.
- Patricia used the two most effective evidence based study strategies to excel:
  - **Spaced repetition,**
  - **Self-testing**

# Time Management

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
6-7am	Breakfast	Breakfast	Breakfast/ study	Breakfast	Breakfast/ study	Breakfast	Breakfast
8-9	Study		Class	Study	Class	Study	Study
10-11				Class		Class	
11-12		Class	Study		Study		
12-1	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
1-2	Gym	Class	Study	Class	Class	Study	Gym
2-3	Study		Class			Zumba	Study
3-4		Study	Study			Movie	
5-6	Dinner		Class	Gym	Dinner	Dinner	Dinner
7-8	Movie			Dinner	Study	Visit grammy	Study
9-10	Study	Dinner	dinner	Study	Study		
11pm- 6am	Sleep	Sleep	Sleep	Sleep	Sleep	Sleep	Sleep



# Academic Support Services is always available to help refine your study strategies.

You can find us at 690 Walnut Ave.

Mon-Thurs 7:30AM-5:30PM

Friday 8AM-3PM

Contact us for an appointment

Jill Alban, Ed.D.  
Director of Academic  
Support

Phone: 707-638-5961

Email:  
jillalban@tu.edu

Paisley Rosengren,  
M.S.

Learning Specialist  
Phone: 707-638-5957

Email:  
brigida.perez@tu.edu