

Center for Academic Enrichment

Study

Skills

**Research Based
Practices**

CAE

More Effective VS. Less Effective

Are your methods of study the most effective use of your time?

Are your methods the most effective at learning?

Here are some old and new techniques

Highlighting

Blocked Practice

Less Effective

Long periods of time

Rereading

Multitasking

Less Effective...

Multitasking

- ❖ Time is wasted on context switching
 - The brain has to restart and refocus
- ❖ Lowers IQ to that of 8 year old child
- ❖ Causes permanent brain damage
 - Low density in anterior cingulate cortex
 - Region responsible for empathy, cognitive and emotional control



Less Effective continued....

Highlighting and underlining

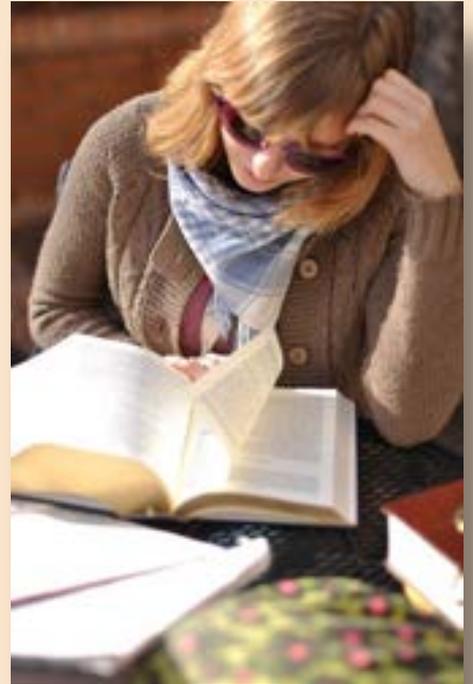
- ❖ Most people over-highlight
- ❖ Useful if used to note main ideas
- ❖ Non useful when it is needed to make a conclusion on a topic



Less Effective continued....

Studying for long periods of time

- ❖ Pseudo-working
 - Studying for long periods of time, but without focus so doesn't get much accomplished.
- ❖ Might not realize you're doing that because it's what you've always done.
- ❖ Formula: Intensity of focus x Time spent = Work accomplished
- ❖ Need breaks to recharge



Less Effective continued....

Rereading a text or notes

- ❖ Good for reviewing a topic after a long period of time
- ❖ Not good for retention of information



Less Effective continued....

Blocked Practice (Cramming)

- ❖ Studying a single subject for a long period of time and repeating phrases over and over to memorize them
- ❖ Create the illusion of mastery, but gains fade quickly



Practice Testing

Mnemonic Devices

Self Explanation

More Effective

Interleaved Practice

The Pomodoro Technique

Spaced Retrieval Practice

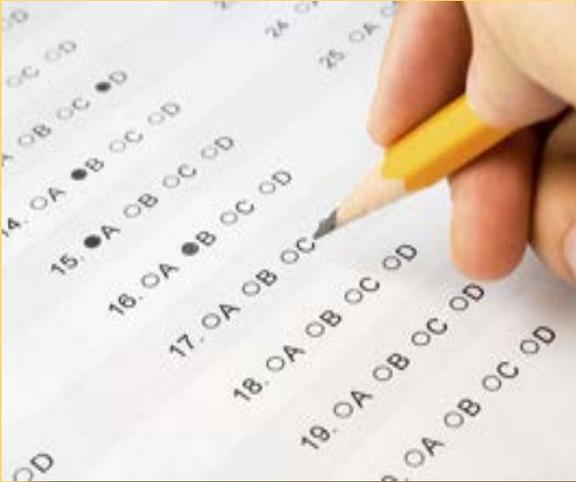
More Effective...

Spaced Retrieval Practice

- ❖ Spacing out and retrieving the knowledge learned to help retain information better
- ❖ Waiting until it's almost forgotten and then reviewing again to reinforce what you've learned
- ❖ Works with physical and online flashcards
 - Anki (available for free on desktop)



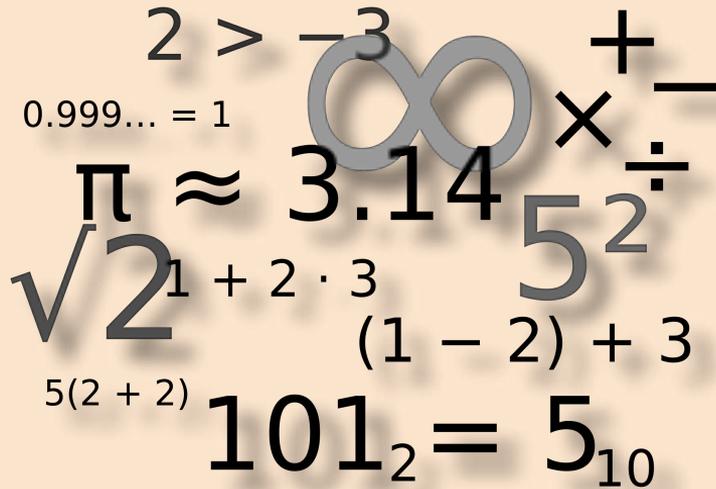
More Effective...



Practice Testing

- ❖ Test yourself prior to learning
- ❖ Practice tests at end of chapters or flashcards
- ❖ Make test questions for yourself when you are learning a new concept
- ❖ Cornell Notetaking system
- ❖ Use ChatGPT to make a practice test for you!

More Effective continued...



A collage of mathematical symbols and equations. At the top left is $2 > -3$. Below it is $0.999... = 1$. In the center is a large infinity symbol ∞ . To the right of the infinity symbol are the symbols $+$, $-$, \times , and \div . Below the infinity symbol is $\pi \approx 3.14$. To the right of that is 5^2 . Below 5^2 is $1 + 2 \cdot 3$. Below that is $(1 - 2) + 3$. At the bottom left is $\sqrt{2}$. At the bottom center is $101_2 = 5_{10}$. At the bottom left of the bottom center is $5(2 + 2)$.

Interleaved Practice

- ❖ Alternate the practice of different kinds of items or problems
- ❖ Topics learned in the previous session was reviewed along with the rules from earlier sessions
- ❖ Work on a set of problems that are related but not all of the same kind

More Effective continued....

Self Explanation

- ❖ Having students explain some aspect of their processing during learning
- ❖ Explaining what you know helps to ingrain that information into your long term memory



More Effective continued....



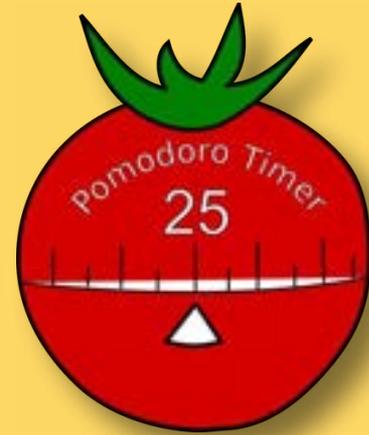
Mnemonic Devices

- ❖ Use of acronyms/phrases/sentences to memorize other information
- ❖ Remain in long-term memory due to uniqueness
- ❖ More information is remembered from self-created mnemonics vs. peer- or expert-generated

More Effective continued...

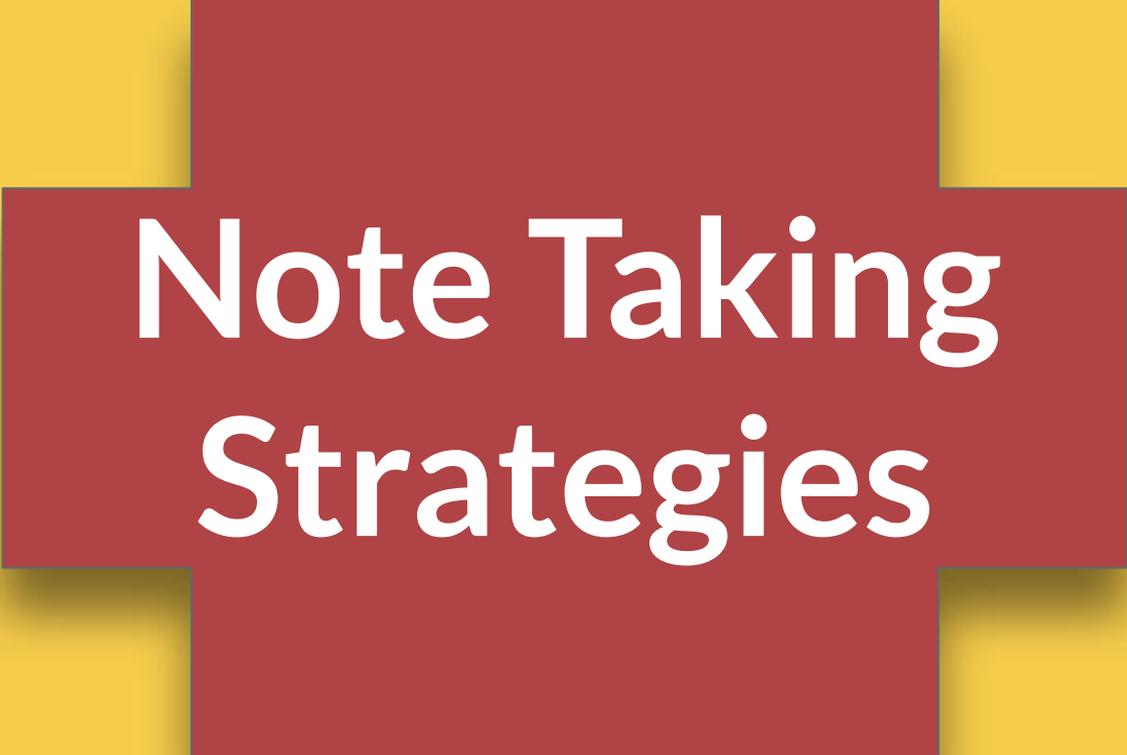
The Pomodoro Technique

- ❖ Choose a task you'd like to get done.
- ❖ Set the Pomodoro for 25 minutes.
- ❖ Work on the task until the Pomodoro rings.
- ❖ When the Pomodoro rings, put a checkmark on a paper.
- ❖ Take a short break.
- ❖ Every 4 pomodoros, take a longer break.



When life happens at home:

- Inform
- Negotiate
- Schedule
- Call back



Note Taking Strategies

General Tips

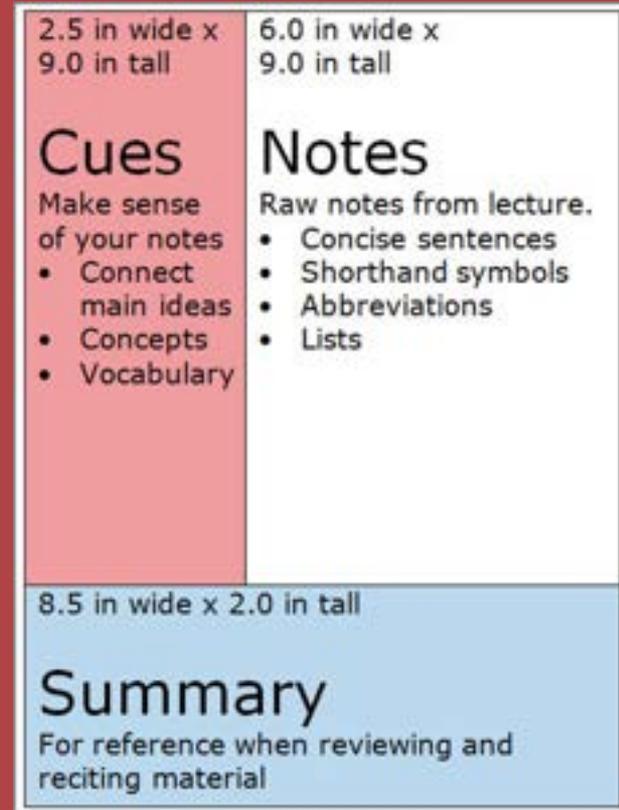


- ❖ Students who take notes by hand during lecture have been found to perform better on exams vs students who use laptops or tablets (Carter et. al 2017)
 - However, some students may be unable to take notes by hand
- ❖ Drawings, diagrams, and other visual representations of information such as graphic organizers improve recall (Wammes et. al 2015)

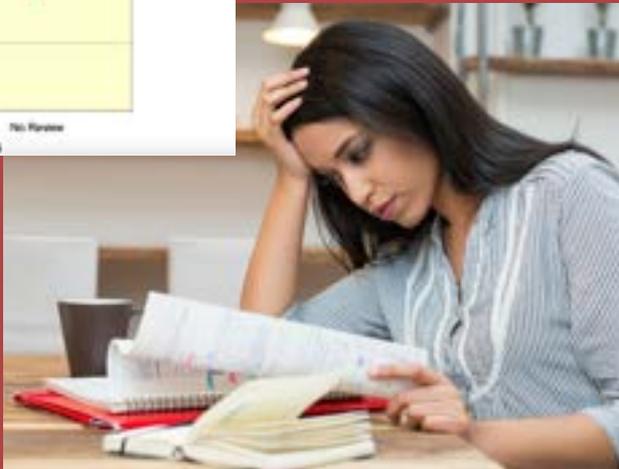
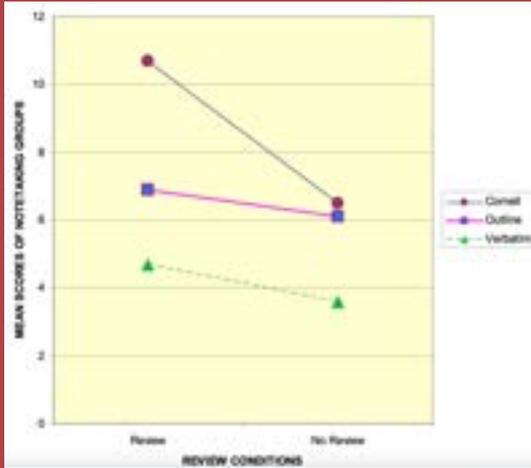
Specific Method for Note Taking

- ❖ **Cornell Notes**
 - Format consists of
 - One column of questions/main ideas
 - One column of raw lecture notes
 - Summary section

 - Retain more information than verbatim notes or outline (Akintunde 2013)
 - Specific aspect
 - Apply specific info to summary creation



Reviewing Your Notes



- ❖ Students who review their notes are able to recall more information (Akintunde 2013)
 - Especially w/ Cornell notes
- ❖ Be strategic about HOW you review your notes (Friedman 2014)
 - Within 24 hours of note creation
 - Quiet area without distractions
 - Make process interactive

- ❖ While some of these are less effective, if paired with other techniques can still be an effective way to study
- ❖ What is most important is to find what works best for you!

QUESTIONS?

Thanks for attending the session.
We'd love your feedback :)



Works Cited

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