Studying for Success in Dr. Roblyer's POLS

How to Fight for Understanding

Familiarity is NOT understanding

- Familiarity is key to academic success in high school
  - …but the key to academic problems/failure in college & professional life
- Familiarity is often marked by following:
  - "Reading over" slides or book and thinking "I'll remember that"
  - Rote memorization & lots of highlighting
  - Frequent confusion between concepts/terms/events
  - Planning to "recognize" the correct answer on the exam
  - Inability to explain the material in your own words
- Familiarity does not allow us to retain information for later use, or to allow us to build on it by connecting more advanced concepts

Understanding is not a foreign idea

- When you are learning about your passion (hobby, skill, sport, etc.), you never settle for familiarity, but insist on understanding!
  - Components
  - Reasons & rationales *(history, why?, …because)*
  - Relationships *(similarities and dissimilarities, connections)*
  - Sequences
  - Likely outcomes
  - Sizes of important numbers & ratios
- Understanding enhances any academic subject or practical skill, even those you think only require memorization
  - Science, math, engineering, language, etc.

Understanding is the foundation of academic success

- Understanding occurs when information finds a "home" in our internal neural network
  - Connections exist to other related information—the information "fits"
  - Permits quick recall, or recall in unexpected, indirect ways
  - Permits expanding upon that information in size, interconnectivity, and complexity
- Understanding is a prerequisite to follow-on learning
- Understanding is a prerequisite for explaining, remembering, and teaching

Steps in fighting for understanding

- Expose yourself to each lecture's material in triplicate within a 48 hour window
  1. Beforehand - "*Prime the pump*" by pre-reading the textbook for an initial exposure to the material to be covered
  2. @Lecture - Bring the lecture slides to class, so you can concentrate on listening, analyzing, and understanding what I am teaching (write only as much as you need)
  3. Afterwards – Go back and review the lecture slides and your own notes; reference the textbook only as needed, but remember the reading assignments!
- This is a "Triple Crown" approach – Shown repeatedly by researchers to deliver much better understanding and retention of course material
  - I have received many "This works!" testimonials from previous students

Steps in fighting for understanding

- Get Active! – Be on the lookout for connections when you read the text & slides, or listen to the lecture
  - Listen for the story
  - Look for the structure
  - Notice the system
- What are the different themes/threads/elements that run throughout the crafting, operating, and changing of governments, and their relationships with each other and their citizens/residents? Several examples follow…
    - The conflicting and reinforcing roles of factions and individual participation
    - The role of power, winning, and losing in politics and government
    - The similar and differing needs of elites and non-elites
    - Disagreement over the role of government
    - Evolution and retraction of civil liberties and rights
    - Reshaping of fiscal, policy-making, and rhetorical relationship of states and federal governments
- How, where, and when do these interwoven themes intersect? *What is the result?* Do they reinforce each other or conflict? *Why?* What themes win out? *Do they remain winners as history continues to unwind?*

Steps in fighting for understanding

- Train yourself to frequently ask yourself "Do I understand this?"
  - Do this whether reading, listening, or watching
  - Also can be rephrased as "Does this make sense to me?"
  - Watch out for:
    - Words that are unfamiliar: *"What does that mean?"*
    - References to foreign facts or concepts: *"Come again?"*
    - Connections or conclusions that don't make sense: *"Where did that come from?"*
  - Set the standard high: *To understand* is to be able *to explain in your own words*

Steps in fighting for understanding

- When the answer is "*No, I don't understand!*", what do you do?
  - In class or have your email account open? Ask a question!
  - Anywhere else? Add the concept to your TIDNUY list
    - Things I Do Not Understand Yet
    - List may be electronic, paper, in notebook, on phone, etc.
    - If you just "try to remember," you won't! THEN there is a strangely high probability that the exam will cover that very issue!

Steps in fighting for understanding

- OWN the information you don't understand
  - No one but you can tell what you understand or don't
  - No one but you will seek to resolve your gap in understanding
- Resolve the items on your TIDNUY list as soon as possible
  - Look again at the textbook and slides
  - Ask your quizzing partner
  - Ask the prof (in class, before/after class, via email)
  - Ask a Success Center tutor in an on-campus Tutor Zone
  - Search the web for one of the many student-friendly teaching resources out there

Steps in fighting for understanding

- Test your own understanding
  - Explain the material **in your own words**
  - Be tough on yourself—don't accept shoddy work!
  - Best approaches for testing yourself:
    - **Quizzing partner:** Usually much more efficient and fun than going solo!
    - Blank word processing screen
    - Blank piece of paper
    - Voice recorders (phone, etc.)

This is the hands-down best approach. For more info, see the next presentation: "How to Make the Most of Quizzing Partners."

"What Works ~~& What Doesn't~~"

#1!

1. SELF-TESTING Quizzing Yourself Gets High Marks

HOW IT WORKS: Unlike a test that evaluates knowledge, practice tests are done by students on their own, outside of class. Methods might include using flash cards (physical or digital) to test recall or answering the sample questions at the end of a textbook chapter. Although most students prefer to take as few tests as possible, hundreds of experiments show that self-testing improves learning and retention.

In one study, undergraduates were asked to memorize word pairs, half of which were then included on a recall test. One week later the students remembered 35 percent of the word pairs they had been tested on, compared with only 4 percent of those they had not. In another demonstration, undergraduates were presented with Swahili-English word pairs, followed by either practice testing or review. Recall for items they had been repeatedly tested on was 80 percent, compared with only 36 percent for items they had restudied. One theory is that practice testing triggers a mental search of long-term memory that activates related information, forming multiple memory pathways that make the information easier to access.

WHEN DOES IT WORK? Anyone from preschoolers to fourth-year medical students to middle-age adults can benefit from practice testing. It can be used for all kinds of factual information, including learning words in foreign languages, making spelling lists and memorizing the parts of flowers. It even improves retention for people with Alzheimer's disease. Short, frequent exams are most effective, especially when test takers receive feedback on the correct answers.

Practice testing works even when its format is different from that of the real test. The beneficial effects may last for months to years—great news, given that durable learning is so important.

IS IT PRACTICAL? Yes. It requires modest amounts of time and little to no training.

HOW CAN I DO IT? Students can self-test with flash cards or by using the Cornell system: during in-class note taking, make a column on one edge of the page where you enter key terms or questions. You can test yourself later by covering the notes and answering the questions (or explaining the keywords) on the other side.

RATING: High utility. Practice testing works across an impressive range of formats, content, learner ages and retention intervals.

Article posted on eCampus or at dwightroblyer.sites.tamu.edu in "Studying & Grade Improvement"

- Article from *Scientific American Mind*, Sep/Oct 2013, pp 47-53

"~~What Works &~~ What Doesn't"

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What Doesn't Work

#Last!

These techniques were rated as low utility because they are inefficient, ineffective or beneficial only for certain types of learning and for short periods of retention. Most students report rereading and highlighting, yet these techniques do not consistently boost performance, and they distract students from more productive strategies. Other methods mentioned below are just too time-consuming.

HIGHLIGHTING

Students commonly report underlining, highlighting or otherwise marking material. It is simple and quick—but it does little to improve performance. In controlled studies, highlighting has failed to help U.S. Air Force basic trainees, children and remedial students, as well as typical undergraduates. Underlining was ineffective regardless of text length and topic, whether it was aerodynamics, ancient Greek schools or Tanzania.

In fact, it may actually hurt performance on some higher-level tasks. One study of education majors found that underlining reduced their ability to draw inferences from a history textbook. It may be that underlining draws attention to individual items rather than to connections across items.

WHAT YOU SHOULD DO INSTEAD: Highlighting or underlining can be useful if it is the beginning of a journey—if the marked information is then turned into flash cards or self-tests. Given that students are very likely to continue to use this popular technique, future research should be aimed at teaching students how to highlight more effectively—which likely means doing it more judiciously (most undergraduates overmark texts) and putting that information to work with a more useful learning technique.

REREADING

In one survey of undergraduates at an elite university, 84 percent said they reread textbooks or notes during study. It requires no training, makes modest demands on time, and has shown some benefits on recall and fill-in-the-blank-style tests.

Yet the evidence is muddy that rereading strengthens comprehension, and whether its effects depend on knowledge level or ability is also woefully underexplored. Most of the benefit of rereading appears to accrue from the second reading, with diminishing returns from additional repetitions. No experimental research has assessed it using materials from actual courses—ironic, given that this strategy is the one most commonly reported by students.

WHAT YOU SHOULD DO INSTEAD: Don't waste your time—in head-to-head comparisons, rereading fares poorly against more active strategies such as elaborative interrogation, self-explanation and practice testing.

Three less commonly used study techniques also fared poorly in our assessment. "Imagery for text learning" needs more evidence before it can be recommended, whereas "summarization" and "keyword mnemonic" appear to be ineffective and time-consuming.

In summarization, students identify a text's main points, excluding unimportant material. Whether it works is difficult to answer, as it has been implemented in many different ways. It is unknown whether summarizing small pieces of a text or large chunks of it works better or whether the length, readability or organization of the material matters.

With keyword mnemonics, imagery is used to enhance memory; for example, a student learning the French word *la dent* ("tooth") might use the similar-sounding English word "dentist" to form a mental image of a dentist holding a large molar. Mnemonics do seem to help with foreign-language vocabulary, word definitions and medical terminology, but the effects have not been shown to endure, and in the end the effort involved in generating keywords may not be an efficient use of time.

Another technique that uses mental pictures is imagery for text learning, in which students are told to create images for every paragraph they read. Research has revealed a patchwork of inconsistent results that have not been shown to last over the long term. Teachers may consider instructing students to attempt using this technique with image-friendly texts, but further demonstrations of its usefulness are necessary.

What's Next: "How to Make the Most of Quizzing Partners"

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