

13 STEPS TO BETTER STUDY SKILLS

By Judi Kesselman Turkel

<http://booksthatteach.com/articles/13steps.htm>

Effective studying is the one element guaranteed to produce good grades in school. But, it's ironic that the one thing almost never taught in school is how to study effectively. For example, an important part of studying is note taking, yet few students receive any instruction in this skill. Reliable data on how to study does exist, though. It has been demonstrated scientifically that one method of note taking is better than others and that there are routes to more effective reviewing, memorizing and textbook reading as well. Following are 13 proven steps you can take to improve your study habits.

STEP 1: Use behavior modification on yourself. Remember Pavlov's dogs, salivating every time they heard a bell ring? Such association can also work with you. If you attempt as nearly as possible, to study the same subject at the same time in the same place each day, you will soon find that when you get to that time and place you're automatically in the subject groove. Train your brain to think French on a time-place cue, and it will no longer take you 10 minutes a day to get in the French mood. You'll save time, and the experts say you'll also remember more of what you're studying!

STEP 2: Don't spend more than an hour at a time on one subject. Psychologists say that you learn best in short takes. In fact, studies have shown that as much is learned in four one-hour sessions distributed over four days as in one marathon six-hour session. One reason you learn better this way is that you use time more efficiently when you're under an imposed time restriction. (Have you noticed how much studying you manage to cram into the day before a big exam?) Also, between study times, your mind subconsciously works to absorb what you've just learned. If you're doing straight memorization, whether math formulas or a foreign language or names and dates, don't study more than 20 to 30 minutes.

STEP 3: Keep alert while you're studying. The amount of attention you give a subject is as important as the amount of time you spend. The more alert you are while studying, the more you'll learn. You can promote a high level of alertness by minimizing distractions: two or three hours of study without noise or other interference is more effective than 10 hours of trying to work amidst bedlam. Another technique for keeping your mind from wandering is to begin with your most boring subject—or your hardest one—and work toward the easiest and/or the one you like best.

Take frequent rest breaks. The specialists say you'll get your most effective studying done if you take a 10-minute break between subjects. (Again, it's akin to behavior modification. Pavlov's dogs were taught to respond on cue by being rewarded with tidbits. The break is your reward.) Dr. Walter Pauk, Director of the Reading and Study Center at Cornell University, suggests you take that short break whenever you feel you need one, so you don't fritter your time away in clock-watching and anticipating your break.

STEP 4: Study similar subjects at different times. Brain waves are like radio waves; if there isn't enough space between inputs, you get interference. The more similar the kinds of learning taking place, the more interference. So separate your study periods for courses with similar subject matter. Follow your hour of German with an hour of chemistry or history, not with Spanish.

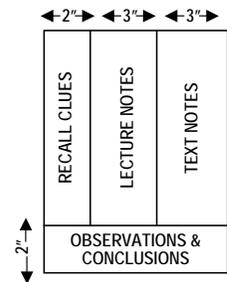
STEP 5: Avoid studying during your sleepy times. Psychologists have found that everyone has a certain time of day when he or she gets sleepy. Don't try to study during that time. If you have a pile of schoolwork, use that time to sort your notes or clear up your desk and get your books together.

STEP 6: Study at the most productive time for each type of course. If it's a lecture course, do your studying soon after class, if it's a course in which students are called on to recite or answer questions, study before class. After the lectures you can review, revise and organize your notes. Before the recitation classes you can spend your time memorizing, brushing up on your facts and preparing questions about the previous recitation.

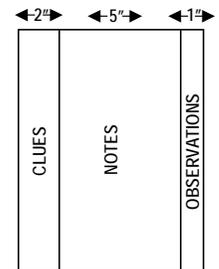
STEP 7: Learn the note-taking system the experts recommend. Quite a bit of research has been done on note taking, and one system has emerged as the best. It has several minor variations; here's the one we prefer:

Use 8½ by 11-inch loose-leaf paper and write on just one side. (This may seem wasteful, but it's one time when economizing is secondary.) Put a topic heading on each page. Then take the time to rule your page as follows:

- A. If the course is one in which lecture and text are closely related, use the 2-3-3-2 technique. Make columns of two inches down the left-hand side for recall clues, three inches in the middle for lecture notes and three inches on the right side for text notes. Then leave a two-inch space across the bottom of the page for your own observations and conclusions.



- B. If it's a course where the lectures and the reading are not closely related, use separate pages for class notes and reading notes, following the 2-5-1 technique: two inches at left for clues, five in the middle for notes and an inch at the right for observations.



The clue column is the key to higher grades. As soon as possible after you've written your notes, take the time to read them over—not studying them, just reading them. Check, while it's all still fresh, to see whether you've left out anything important or put down anything incorrectly, and make your changes. Continue then, in that left-hand column, to set down clue words to the topics in your notes. These clue words should designate or label the kind of information that's in your notes. For example, to remember the information contained so far in this section on note-taking, you need just the following clues: 8½-by-11 loose leaf, one side; 2-3-3-2; 2-5-1. As you can see, they're simply memory cues to use later on in your actual studying.

Dr. Robert A. Palmatier, assistant professor of reading education at the University of Georgia, suggests that you study for tests in the following manner. Take out your loose-leaf pages and shift them around so the order makes the most sense for studying. Take the first page and cover up the notes portion, leaving just the clues visible. See if you can recall the notes that go with the clues, and as you get a page right, set it aside. If you're going to be taking a short-answer test, shuffle up your note pages so they're out of order. (That's why it's important to use just one side of the paper.) "This approach provides for learning

without the support of logical sequence.” Dr. Palmatier says, “Thus closely approximating the actual pattern in which the information must be recalled.” If you’re going to be taking an essay test, you can safely predict “those areas on which the most notes are taken will most often be the areas on which essay questions will be based.”

The beauty of the clue word note-taking method is that it provides a painless way to actively think about your notes and make logical sense of them in your mind. You won’t learn by passively paging through your recorded notes. It’s been proven that active recall is more conducive to remembering what you’ve learned.

STEP 8: Memorize actively, not passively. Researchers have found that the worst way to memorize—the way that takes the most time and results in the least retention—is to simply read something over and over again. Instead use as many of your senses as possible. Try to visualize in concrete terms, to get a picture in your head. And also use sound: say the words out loud and listen to yourself saying them. Use association: relate the fact to be learned to something personally significant or find a logical tie-in. For example, when memorizing dates, relate them to important events with dates you already know.

Use mnemonics. For example, the phrase “Every good boy does fine” is used for remembering the names of the musical notes on the lines of the treble clef. Use acronyms, like OK4R, as the key to remembering the reading method outlined below in Step 9.

STEP 9: Take more time for your reading. Read with a purpose. Instead of just starting at the beginning and reading through to the end, you’ll do the assignment a lot faster and remember a lot more if you take the time to follow the OK4R method devised by Dr. Walter Pauk.

- O. Overview: Read the title, the introductory and summarizing paragraphs and all the headings included in the reading material. Then you’ll have a general idea of what topics will be discussed.
 - K. Key ideas: Go back and skim the text for the key ideas (usually found in the first sentence of each paragraph). Also read the italics and bold type, bulleted sections, itemizations, pictures and tables. Now you’ll know what the author is saying about his topic.
- R1. Read your assignment from beginning to end. You’ll be able to do it quickly because you already know where the author is going and what he’s trying to prove.
- R2. Recall Put aside the text and say or write, in a few key words or sentences, the major points of what you’ve read. (This is the time to put down reading notes in your loose-leaf book.) Dr. Pauk says that one minute spent in immediate recall nearly doubles retention of that piece of data!
- R3. Reflect: The previous step helps to fix the material in your mind. To keep it in your memory forever, relate it to other knowledge: find relationships and significance for what you’ve read.
- R4. Review: This step doesn’t take place right away. It should be done for the next short quiz, and then again for later tests throughout the term. Several reviews will make that knowledge indelibly yours.

STEP 10: Devise a color and sign system for marking your personal books. Dr. Palmatier suggests red for main ideas, blue for dates and numbers, yellow for supporting facts. Circles, boxes, stars and checks in the margins can also be utilized to make reviewing easy.

STEP 11: Clue your lecture notes, too. Underline, star or otherwise mark the ideas that your teacher says are important, thoughts that he says you'll be coming back to later, items that he says are common mistakes. Watch for the words—such as “therefore” and “in essence” that tell you he's summarizing. Always record his examples. In fact, in such subjects as math your notes should consist mainly of the teacher's examples.

Pay closest attention in your note-taking to the last few minutes of class time. Often a teacher gets sidetracked and runs out of time. He may jam as much as half-hour's content into the last five or ten minutes of his lecture. Get down that packed few minutes' worth. If necessary, stay on after the bell to get it all down

STEP 12: Keep your themes to the point. Themes are graded on what you say and on how well you say it. Narrow down your topic to one you can cover easily in the assigned length. Stick to the topic and develop it thoroughly, using facts or examples to support every statement. (Be careful to label what's fact and what's opinion.) Once you've got it all down, do what all professional writers do: edit and rewrite. And remember that a simple word used correctly is infinitely better than a complex word misused.

Name, list, define, tell, enumerate, all mean just to give the information asked for.

Summarize and outline mean give the main points.

Define means just give the meaning.

Illustrate means give examples.

Justify means give the facts to prove it's true.

Prove means show that it's true and its opposite is false.

Discuss and review means examine from all angles.

Compare means show how they're the same and how they differ.

Contrast means show the difference.

Evaluate means give your opinion as to the advantages and disadvantages.

Criticize means examine the pro's and con's and give your judgment.

Explain means how, in logical sequence, something happened.

STEP 13: Pre-read math, science or engineering text material just before the topic is covered in class. That will provide clues for taking class notes and will also make the lecture partly a review.

When doing homework, it's important to understand new words, new concepts and new laws before trying to solve sample problems. If you can't do a problem, which has complex numbers in it, try substituting simple numbers. In these subjects you'll learn infinitely more from your mistakes than your correct answers, so always redo to find out where you went wrong.

Fully 20 percent of all computation errors are made from inaccuracy. Write all numbers carefully, in straight columns, and write it all down—don't short cut by figuring parts of the problem in your head.

If, after the homework is explained in class you still don't understand something, look for help immediately. Each new bit of information in math and science is built on the step before it, and if any one step is rickety your entire staircase to understanding will fall the first test.

In studying for tests, teach yourself to recognize a problem—and its method of solution out of context. Copy out the problems from all the chapters you're reviewing, mix them up and then do them.

Research has proven that it's not how much time you study that counts; it's rather how well you study. In fact, in at least one survey, students who studied more than 35 hours a week came out with poorer grades than those who studied less. Use your study time wisely, and you too will come out ahead.

The Study Smart Series by Judi Kesselman Turkel and Franklynn Peterson

The Study Smart Series, designed for students from junior high school through lifelong learning programs, teaches skills for research and notetaking, presents strategies for testtaking and studying, provides exercises to improve spelling, grammar, and vocabulary, and reveals secrets for putting these skills together in great essays.

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ACTIVE READING STRATEGIES

THE SURVEY Q4R METHOD OF STUDY

In the beginning, the Survey Q4R Method may seem strange or difficult. However, after you become familiar with the method, it will result in a far greater mastery of your assignment, with no increase in the time spent in studying. It has these advantages; you are learning to distinguish between main ideas and details; you reduce mind-wandering because you make frequent checks; you make brief notes—using your own words—which prepare you more adequately for tests; and you are making the best possible use of the principles of memory; and you train yourself to answer questions as you would on a test.

I. SURVEY:

Get a general idea of the content, structure, organization, and plan of the chapter. Your reading comprehension will be better if you don't start reading the chapter "cold." To begin reading your lesson without this bird's eye view is like beginning an automobile trip without a road map or without knowing where you are going.

- A. Locate the exact pages of the assignment. Estimate how long it will take you and how much time you are going to spend on it now.
- B. Think about the title and the sub-titles. These contain your main ideas.
- C. Think about the illustrations in the chapter.
- D. Read the introduction of a chapter and the first paragraph. Here you will find the purposes of the author and the main ideas.
- E. Read the summary. Here you will find the relationships between the main ideas.
- F. Get the main thought out of the various paragraphs in your chapter. This may be done by reading the topic sentence (often the first sentence, but sometimes the last), clues such as italics, boldface types, names, dates, numbers, " ", and the like. Main ideas often surround these clues.

II. QUESTION:

Having a question results in (a) a spontaneous attempt to answer the question with information already in mind, (b) increased concentration and attention while reading to find an answer to the question, (c) increased comprehension due to the mind's activity in its attempt to find an answer to the question.

In *surveying* your textbook, *questions* may not stand out as readily.

- A. Use your knowledge you gained in surveying the chapter as basis to ask yourself questions that you expect to find answered in the chapter.
- B. One way to elicit these valuable helpers is to turn headings or subheadings into questions. Example: "Thickness of the Ionosphere" might become "*How thick is the ionosphere?*". "How Negative Thinking Slows You Down" becomes "*What is negative thinking? How can it slow me down?*". Once you start asking questions more will come to mind. You'll find your interest in your assigned work growing with each question. You may want to jot some of them down to be answered later through your reading. Remember: every second you spend in the Survey and Question steps are very

worthwhile. Surveying will make your reading easier, and you will understand what you read better.

- C. If there are no headings, ask questions that you think might be asked by your instructor.

III. **READ:**

Read to answer your questions. Your rate of reading will depend on your purposes, the difficulty of the material, and your familiarity with it.

Be a flexible reader; adjust your speed to your needs. If a word meaning is not clear to you through its use in the selection, reread. If it is still unclear, underline the word or jot it down and look it up when you finish reading. Especially in reading magazines and newspapers, ask yourself: What is the writer's purpose? What is he trying to get me to think or do? Is he giving facts or his opinions?

IV. **RECITE:**

After you have read the first section, look away from your book and try briefly to restate in your own words the answer to the question. If you can't give the answer, reread the section.

V. **"RITE":**

After you have recited, write in a notebook the cue phrases to the main ideas. Write these notes in outline form.

- A. Write the question. (One sheet of paper is to contain all the notes for this chapter—so keep it brief. Use abbreviations.)
- B. Write the answer—use only key words, listings, etc. that are needed to recall the whole idea.
- C. Be sure to use your own words and not the author's.

VI. **REVIEW:**

Increase retention; eliminate cramming by 90% by means of immediate and delayed review. You tend to forget most of what you learned during the first 24 hours. But remember that you can often relearn in a few minutes what took you an hour to learn the first time.

CAUTION: You cannot relearn that which you did not learn well in the first place.

- A. When your lesson has been read, look over your notes to get a bird's eye view of the various ideas and their relationships.
- B. Check your memory by covering up the notes and trying to recall the main points.
- C. Next, expose each main point and try to recall the sub-points listed under it.
- D. Further, you should always go over your outline just before a test.
- E. When you have a textbook on which you are tested at mid-term and the end of the semester only, it is a good idea to review at the end of each week, gradually accumulating several chapters to review; hence there is no need to "cram" for the exams.

IMPROVING EFFICIENCY DURING THE READING STAGE OF SQ4R

Your eyes do not move in a steady flow of vision across the printed page. Instead, they pause on one word or group of words and then leap to another word or group of words, where they pause again, these pauses are called fixations.

If you make too many fixations per line or pause too long, you slow down your reading. One of the best ways to increase your reading speed is to increase the range of your reading speed is to increase the range of your eye-span and shorten the pause. The fewer the fixations you have per line and the shorter the pauses, the faster you will read.

You can decrease the number of fixations by developing your ability to read in thought-units rather than word by word. A thought-unit is a phrase or group of words that are used together to produce meaning. The following line is marked off in thought-units:

• • • •
When you go / to the store / please get / some butter

The eye sees by first focusing on the center of an object and then spreading outward in all directions. You can demonstrate this by moving your eyes from one dot to the other across the sample line above. You will also see the words with each fixation. For practice, read a few lines and mark the groups of words as in the preceding sentence. Then place a dot above the middle of each thought-unit as a guide for your eyes.

SQ4R Worksheets are provided at the back of this study packet.

OUTLINING STRATEGY FOR TEXTBOOKS

I. SURVEY

the chapter as in the SQ4R

II. READ

the chapter, highlighting in yellow or pink all materials of reasonable importance, including main ideas and all significant supporting details.

III. RE-READ

all highlighted material highlighting over the yellow or pink for all key ideas and important concepts with a contrasting color, such as green or orange.

IV. WRITE

the double highlighted materials one more time. Underline the main ideas and significant vocabulary. Write key words in the margin. When the material presents sequential or other enumerated ideas, list the key words and number them, also write in any questions, comments, conclusions you gain from reading

V. NOTE

This is obviously a time-consuming process. Once done however, one really knows the material. A student should be able to review a 30-page assignment for a major essay test in no more than 15 minutes. Even a year later a student should be able to briefly review the chapter and discuss it knowledgeably or take a test on it.

READING COMPREHENSION STRATEGY

RECIPROCAL QUESTIONING

Skilled learners are skilled question-askers of themselves and others.

PROCEDURE

1. STUDENT reads paragraph to a teacher, tutor, or friend (LISTENER)
2. STUDENT asks the LISTENER as many questions as he/she can about what was just read.

What...?

When...?

Who...?

Where...?

Why...?

What if...?

Do you think...?

Suppose...?

3. The LISTENER asks the STUDENT as many questions as possible about what was just read.
4. Go on to the next paragraph.

MEMORY AND RECALL

R-C-R-C

When you need to memorize something or study something carefully, use RCRC

R = READ

Read a little bit of material. Read it more than one time.

C = COVER

Cover up the material with your hand.

R = RECITE

Tell yourself what you have read.

C = CHECK

Lift your hand and check.

If you forget something that is important, begin again.

MEMORY IMPROVEMENT (Solso, 1979; West, 1985; Lapp, 1987)

- A. Eliminate non-essential material
 - 1. Memory space is scarce and thus precious
 - 2. Items that can be recalled via notes, references, etc. should not be remembered unless essential for daily life
- B. Facilitate attention
 - 1. Reduce unwanted visual, auditory, somatosensory and anxiety-related distractions
 - a. Organize and control your learning environment
 - b. Use earplugs to reduce noise
 - c. Relaxation techniques to reduce anxiety/stress
 - d. Stretching/exercise to reduce muscle tension
 - 2. Maintain task focus by being "single-minded"
 - a. If going to another room to get something, complete that task before being distracted by another
- C. Maximize depth of processing
 - 1. Think about significance of new material
 - 2. Elaborate and make connections
 - 3. How does new information fit in with what you already know
- D. Optimize the timing of learning
 - 1. Study to assure that immediate memory (seconds), short-term memory (minutes), and long-term memory (one day or more) are competent
 - a. Review the same materials at least three times
 - 2. Space study periods, providing at least 10 min per hour of rest
 - 3. Distribute material to be memorized over several short study periods rather than one long one (avoid cramming)
 - a. Remember that short-term memory capacity is limited
 - 4. Try studying before going to sleep to minimize interference

- E. Rehearse to facilitate transfer from short-term to long-term memory
 - 1. Use successively longer intervals
 - a. Repeat after 10 seconds, then after 20 seconds, then 40 seconds
- F. Use external memory aids
 - 1. Take notes; make sure paper and pencil available; keep all notes in one place so you don't forget where you put them
 - 2. Use electronic reminding devices which can be programmed to ring an alarm and print a message at a specified time
 - 3. Put objects or notes in prominent places where they can't be overlooked
 - a. Link new tasks to old habits
 - b. E.g. place pills to be taken in morning by toothbrush
 - 4. Use devices that let you know if you forgot
 - a. Use divided pill boxes so you can see if you have taken pill or not
- G. Develop "habits" of remembering (procedural memory)
 - 1. If you frequently lock yourself out of your house because of forgetting keys
 - a. Develop habit of having keys in your hand before pulling door shut
 - b. Initially will require active attention and perhaps external cues, i.e. large sign on door "keys in hand"
 - c. With sufficient practice, procedures will become an "automatic habit"
- H. Explore your learning/memory style
 - 1. Discover how you learn best
 - a. Listening (auditory input channel); left temporal-parietal processing
 - b. Reading (visual input channel); left temporal-parietal processing
 - c. Writing (motoric output with visual and kinesthetic feedback); left temporal-parietal processing
 - d. Visual imagery (mainly right temporal processing)
 - e. Acoustic imagery (mainly right temporal processing)
 - 2. Practice using different approaches to optimize your learning mode
 - 3. Study with friends who have complementary styles of learning (left/right learners may benefit from each other)
- I. Use associative techniques to facilitate encoding and retrieval
 - 1. Method of successive reduction
 - a. Review materials repeatedly until the number of associable elements is reduced to a manageable list. Then use method of paired associates.
 - i Verbal-nonverbal associations
 - (a)The more bizarre and striking, better the memory. For example, an "endocarp" is a fruit pit. Picture yourself hitting a carp (fish) with a gigantic fruit pit (nonverbal visual image)
 - ii Acustico-verbal images
 - (a)For above image of hitting fish with fruit pit, add play on words, such as, "This is the end o' carp."
 - (b)E.g. sound of state names could be visualized, e.g. Minnesota = mini soda
 - (c)Use rhymes and rhythms, "Thirty days has September..."
 - iii Verbal-image combinations
 - (a)To remember that the capital of Maryland is Annapolis, think of Mary landing on a apple
 - iv Verbal-verbal combinations

- (a) Use mnemonics such as jingles, to help remember a list of terms in order.
E.g. "On Old Olympus' towering top..." for cranial nerves, "Olfactory, Optic, Occulomotor, Trochlear, etc.
 - v Numerical-verbal combinations
 - (a) Make up memorable 7-letter words for phone numbers using the letters on the dial: 1=ABC, 2=DEF, etc
 - (i) So 463-3696 becomes HOE DOWN
 - (b) For automatic teller codes, make up a 4-word phrase: number of letters in each word is the number in the code
 - (i) If code is 5424, code might be "Money, give me some!"
 - (ii) Make code relevant to task to minimize
 - b. Method of loci
 - i Best for sequential recall
 - (a) A list of cues is derived from memory images of geographic or spatial locations (top of head, forehead, nose, ears, chin, neck, etc.)
 - (b) Items to be remembered are associated with each of these locations
 - (c) The imaginal construction should be unusual, bizarre and striking
 - ii Mental mapping
 - (a) A variation of the method of loci
 - (b) Allows for construction of an analogue of the materials to be learned in the form of a conceptual drawing with interaction components
- 2. Memory strategies
 - a. Remembering faces
 - i Look directly at the person, say the name aloud as soon as you are introduced
 - ii Rehearse the name at successively longer intervals
 - iii Look for the most memorable feature and associate that with name (e.g. a man named Bentavagnia who has a hooked nose—imagine him with a nose like a bent weather vane.)
 - iv Invent a feature with the name
 - (a) Zukerman = sucker man (imagine the man with an all day sucker)
 - b. Remembering foreign words
 - i Study Latin and Greek prefixes and suffixes to facilitate semantic associations
 - (a) Form multiple associations to each word
 - (b) Do English-foreign and then foreign-English

REMEMBERING

1. **ATTENTION:** Attend to the material intensely and wholly. Nothing else should enter your mind. Later, but not now.
2. **INTEREST:** Ask questions to stimulate interest. Take part or sides in the problem issues and subjects you are reading about.
3. **INTENTION:** Intend to remember as if your life depended on it.
4. **BELIEVE:** Trust and believe in your ability to remember. It will strengthen as you lay burdens on it and because you trust it.

5. **START RIGHT:** Concentrate on accurate input, not speed, at the beginning.
6. **SELECT:** Concentrate on the most significant things, the essential and the important. You can't nor are you expected to get 100%, so give your most intense attention to what is new, difficult and must remember.
7. **ASSOCIATE:** The more associations you can elicit for an idea, the more meaning it will have; the more meaningful the learning, the better one is able to remember it. People with good memories usually THINK OVER their experiences—real and vicarious—and systematically relate or associate them with previous learning.
8. **BACKGROUND:** Build background. The more background you have on a subject, the more interest you will have and the better you can form associations and discern relationships between the new and old.
9. **ORGANIZATION:** A good memory is like a well-organized and well-maintained filing system. When a new fact presents itself and you decide to keep it, you will associate (file) it with its natural or logical group. Bunch or associate ideas, facts, or details consistent with the organization of the chapter.
10. **RECITATION:** Quiz or self-test yourself after every paragraph or natural break. Recite in your own words. Recitation not only serves memory but tests and promotes understanding.
11. **NOTES:** Take brief notes in your own words and arrange them in some meaningful order. Review them immediately after concluding the chapter.
12. **REVIEW:** Best time to review is immediately after initial learning has taken place. We forget most in the first 24-48 hours.
13. **SPACED REVIEW:** Periodically review so that forgetting has less of a chance to take place. If the intervals between reviews are too widely spaced, more forgetting will occur.
14. **OVERLEARN:** When you are sure you know it, then one more time or two. If you can recall it instantly, you have overlearned it. The more important and difficult the learning, the more you should overlearn it and reinforce it with frequent reviews.
15. **STUDY⇒SLEEP:** Freshly learned material is better remembered by most people after a period of sleep or mental activity than after a period of daytime activity when interference takes place.

TEN SUGGESTIONS FOR GOOD NOTE-TAKING

1. **Label your notes at the top of the page with your professor's name, the course, the date, and the title of the lecture.** Think of your notes as chapters in a book, each with its own title. Later, when you study your notes, the titles will immediately help focus your mind on the subject of the lecture.
2. **Make your notes legible.** Notes taken in ink on one side of the paper can be read more easily and for a longer period of time than pencil notes.
3. **Be an aggressive note-taker.** Regard note-taking as hard work. Sit as close as you can to your professors so that you will be able to hear them without straining. While you are taking notes, maintain an alert physical attitude. Then your mind will usually stay alert also.
4. **Start taking notes when the professor starts talking.** Don't sit back during a lecture and wait for something to strike you. Remember that you professors are likely to examine you on any of the material they present in their lectures. Writing down the title of the day's lecture and taking a note or two on the introductory remarks will usually get you well started so that you won't miss important points later.
5. **Ignore all distractions that might interfere with your concentration.** Don't think about what your professors are wearing, the other students in class, the good weather outside, or anything else but the business at hand. Instead, concentrate on getting as many notes as possible during the class period.
6. **Isolate the specialized vocabulary for each course as early as possible and learn it so that you and the professor will be talking the same language.** In order to talk about a subject your professor will use the language of that subject, though not always taking the time to define each term that is unfamiliar to you. Circle difficult words, draw a line from them out to the margin, and label them there with a V for vocabulary. This is a quick note to yourself that you must find out more about these words. Until you do, the lecture won't make complete sense.
7. **Learn to differentiate fact from opinion in lectures.** Get the facts straight and learn them; keep them separate from the professor's opinions. Label your professor's opinions as such if you wish. It is also a good idea to insert your own opinions, questions, ideas, and reflections into your notes as they occur to you. Separate your ideas from the material presented by your professor by placing them in square brackets, thus: [].

When your notes are sprinkled liberally with your own reactions in square brackets, they are more interesting to study later. Such reactions also make it easier for you to come up with topics for papers and to answer those exam questions that demand original thought.

8. **Develop your own set of symbols to identify or emphasize various items in your notes.** It has already been suggested that a circled "V" in the margin can identify an unfamiliar term and that square brackets can be used to set off your own ideas. In addition, a circled "A" in the margin can identify an assignment slipped in without warning at the end of a lecture. A circled "B" in the margin can identify books mentioned in the lecture. A circled "P" in the margin can identify a possible paper topic that you thought of during a lecture. Questions in your own mind can be jotted down, labeled in the margin with a "Q", and asked at the end

of class. Cross-references to passages in the textbook can be indicated in your lecture notes as “see Text, p. 231.”

Finally, emphasize main ideas in your notes by underlining them, and write a star next to material that is likely to be on an exam.

9. **Always take notes on discussion.** Good discussion leaders come into class with a list of points that they want to make. Rather than presenting them in the form of a lecture, they draw the information from the class by asking questions. It is your responsibility in a discussion, just as it is in a lecture, to try to discover what points are being made and to record them so that you will not forget them. If you cannot outline the discussion, at least skip a line each time the subject is changed.
10. **Get in the habit of always attending lectures.** You will be less tempted to cut classes if you think of each class as a chapter in a book you are reading. If you cut a class, you miss a chapter and that interferes with comprehension.

NOTETAKING HINTS

- ☺ Be Prepared. Do assigned reading; review previous lecture notes before class
- ☺ Use 8 ½" x 11" paper, record date, topic each lecture
- ☺ Write legibly, recopying is a waste of time
- ☺ Use abbreviations (formal, or your own inventions)
- ☺ Summarize/ use own words whenever possible
- ☺ Record anything written on board
- ☺ If lecturer refers to test, jot it down
- ☺ If you miss something, leave a space. Ask instructor or student later
- ☺ **MAJOR POINTS** – Listen for them and make them **STAND OUT!** (should be written to left margin)

Watch for lecturer's CLUES:

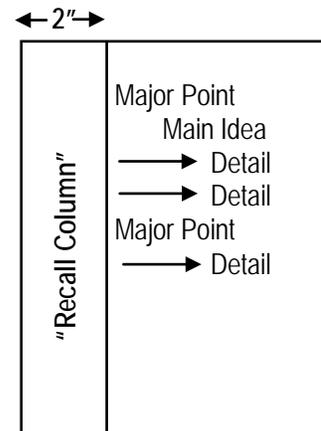
- May state directly: "The main point is..." "I want to emphasize..."
- May repeat information
- May speak louder, move forward, write on board

SUPPORTING INFORMATION – Listen for details, examples, etc. (should be indented from major points)

Words that signal information:

- Advantages
- Types
- Differences
- Characteristics
- Causes
- Reasons
- Etc.

- ☺ **FORMAT** – Use "Recall Column" and "Indentation" format
- ☺ **EDIT** your notes – ("fill in gaps" as soon after lecture as possible—add information, expand examples, etc.)
- ☺ **RECALL COLUMN** – Used for studying, to assist memory—fill-in words, key phrases, ideas, questions



NOTETAKING STRATEGY

Preview

(to provide a mental set and aide understanding)

Review old notes
Read assignment before class.

Select

(to help you get what is important on paper)

Don't write all. Get core ideas.
Listen and watch for instructor's cues as to what is important.

Question

(to help you understand and remember)

Question instructor OR self. Focus notes around questions.

Organize

(to help you "picture" your notes and remember them)

Use a format that is logical and useful for you.
See lecture as a gestalt (whole).

Review

(to help you see how old lectures relate to new ones to aid understanding and memory)

Review notes immediately after class.
Edit notes by filling in missed words, getting main ideas on side column, etc. Write down questions you have to ask instructor.

PROBLEM SOLVING STRATEGY

Situation

What is the problem for which you have to come up with a solution?
What is really bothering you?

Options

Brainstorm for all the different ways you could solve that problem.
Write down all your thoughts

Consequences

Write down the consequences for each option you thought of.

Simulation

Practice each option and feel the consequences. Eliminate options.

Decision

Decide the best solution to the problem and ACT.

TAKING EXAMINATIONS

HOW TO TAKE AN OBJECTIVE TEST

Taking an objective examination is somewhat different from taking an essay examination. The objective examination may be composed of true-false, multiple-choice, or matching responses. Also included occasionally is a fill-in section. There are certain things that you must remember to do as you take this kind of test.

First, roughly decide how to divide your time. Quickly glance over the pages to see how many kinds of questions are being used and how many there are of each kind. Secondly, carefully read the instructions and make sure that you understand them before you begin to work. Indicate your answers exactly as specified in the instructions. If your instructor has not indicated whether there is a penalty for guessing, ask him or her about it; then, if there is a penalty, do not guess.

Be prepared to find some questions that are easy for you and others that are difficult. Answer those that are relatively easy as soon as you have read them carefully and are sure of the answer. Check those that you find difficult and pass them for the moment. After you have answered all the easy questions, you can properly apportion the remaining time to try to answer the more difficult questions. Remember that in objective examinations all the questions of the same kind usually count the same and you get no more credit for a difficult question than you do for an easier one. Don't waste precious time worrying about the harder questions.

You can improve your objective examination results by learning and practicing the art of reading and deciding on the correct answers on objective tests.

True-False Questions

True-false questions usually state the relation of two things to one another. Because the instructor is interested in knowing whether you know when and under what circumstances something is or is not true, s/he usually includes some qualifiers in the statement. The qualifiers must be carefully considered.

With the following qualifiers, you are wiser to guess "yes" if you don't know the answer because you may stand some chance of getting the answer right: most, some, usually, sometimes, and great.

On the other hand, with these qualifiers, you should guess "no" unless you are certain that the statement is true: all, no, always, is, never, is not, good, bad, equal, less.

Beware of the false notion that certain words automatically make a statement true or false. Even though it is difficult to construct true statements with such words as: no, never, every, or other sweeping qualifiers, instructors sometimes do without making them giveaways. Such statements will catch the student who isn't judging them on their merits.

Usually the best true-false questions are one-clause statements, but occasionally two clauses are used. When there are two clauses, judge each of the two statements separately. If one of them is false, mark the question false even if the other clause appears to be true. Most of the time both statements are either true or false.

Suppose you read the following statement on a test and want to analyze it to determine whether it is true or false: "All oranges are orange." First of all, note that all is the qualifier. Now, try substituting other qualifiers for all:

"Most oranges are orange."

"No oranges are orange."

“Some oranges are orange.”

“All oranges are orange.”

If you can find a qualifier that makes a better statement than the one on the test, the test question is false. If your substitution is not better, the question is true.

Even though examination questions are naturally more complicated than these examples, this explanation of analyzing qualifiers should prove helpful. Despite the fact that it doesn't always work, it should help you find the key word or words in a statement. It is important to remember that there is always an adjective, adverb, or word or group of words on which the truth or falsity of the statement hinges.

Multiple-Choice Questions

The first and most important thing to remember in answering multiple-choice questions is that you must read the directions carefully so that you can answer the questions as they are supposed to be answered.

Basically, multiple-choice questions are true-false questions arranged in groups. There is a lead phrase or clause at the beginning of the question and three or more endings to make different statements.

The multiple-choice question differs from the true-false item in that only one item out of the group is to be selected. This item is the one best answer or the one answer that is more nearly true. With multiple-choice questions it is a relative matter, not one of absolute truth or falsity.

Read through the question to eliminate alternatives that are clearly false. Mark through the letter or number that precedes these statements and then concentrate on those that may be true. Read them once more. Find and test the key words as you would in a true-false question. If you don't know the answer to the question, place a check mark in front of the question and leave it until you have finished the easier questions.

Matching Questions

Read all the items to be matched in matching questions in order to get an idea of the range of possibilities. Go back to the first item on the left and read down the items on the right until you find the one best match. If you can't find the correct match, go on to the next item. Proceed in this manner until you have filled in all the answers you know. This will simplify the job by reducing the number of possibilities. Some matching questions consist of words or brief phrases while other contain whole clauses similar to those in true-false or multiple choice statements. These key words must be tested just as they are in true-false or multiple-choice questions.

Completion Questions

Another type of question used is the completion question. This type of question is much like the true-false question except that one word or a phrase is left out. Be very specific in your choice of words because the instructor will be expecting a technical term or key word. Try to think of the answer that fits, but if you cannot think of an answer, write down your best guess. Even though such answers may not be exactly what is wanted, they may get complete or partial credit.

Summary

Always remember that you must answer test questions while considering what was said in class or in the textbook. Don't answer the questions according to the latest magazine article, your personal opinion, or some other course you have taken.

Leave some time for a final rereading of your examination just in case you have made a foolish mistake such as leaving some questions unanswered. If you are tempted to change some of your answers, do not do it hastily or impulsively. Remember that you put some thought into the answers and they should not be changed without good reason. Carefully read the question again and weigh the various alternatives. If you recall something relevant that you didn't recall on the first reading, or if you perceive the meanings of the alternatives more clearly, you may increase your chance of being correct by changing the answer. Avoid last minute hasty changing of answers for the first answer is usually the correct one.

HOW TO TAKE AN ESSAY TEST

The essay examination is one of the most practical and yet one of the most demanding writing situations you will encounter in college. It is demanding because you are required to write under the pressure of a rigid time limit and your ability to read accurately and to write well within that time limit is tested. For this reason, the essay examination is as much a test of thinking and writing ability as it is a test of your knowledge of the subject material of the course.

Many students fail to get good grades on their essay examinations, not because the answers are ungrammatical or awkward, but because they cannot express their knowledge of the subject adequately through their writing. According to instructors, the chief weakness of most essay test answers is that they are not carefully planned and then adequately developed. Many students write without any clear purpose, and assume that as long as they are writing, they are answering the question. Consequently, the results are often answers that are not clear, not adequate, and not relevant.

You can improve your ability to get the better grades you want on essay examinations by pursuing the following practice.

Before the Examination

Obviously, the student who is not prepared in the content of the course cannot hope to get a good grade on an essay-type examination in which there is no opportunity to guess the right answer from a group of answers which are already there. The best way to prepare for an essay test is to keep up with the daily assignments so that all you need do just before the test is a general review of lecture notes and the notes you took while reading the textbook. While you are reviewing for the test, remember that you should concentrate on the main ideas or major concepts of the course because the essay test is not designed simply to test your knowledge of details. It is meant to test your thinking as well as your memory by eliciting your understanding of the main concepts as supported by sufficient thinking and use of detail.

An essay test requires more sustained concentration than any other kind of test, so be sure to get plenty of sleep the night before the test. Remember that the mind works more slowly and not as accurately when it is tired.

During the Examination

Read the entire essay examination before you attempt to answer any part of it. Look at the total number of points allocated to each essay question. Decide which essay questions you know the most about and write about them. Do not vacillate between questions; make your decision and stick to it.

Plan the amount of time that should be devoted to each essay question so that you will have enough time on each question; then adhere to your time limits. Remember to allow time at the beginning for the preliminary reading and at the end for rereading, corrections, or additions. Keep in mind that you should not try to write all that could be said about a topic on the essay test, but that you must write the best answer possible within the time limit specified. No matter how thorough or brilliant the answer, each question receives only a certain number of points.

Read the question thoroughly to see what it asks you to do before you try to answer it. If you do not interpret the question correctly, your entire answer may be wrong. Certain key words in a question require a different approach to the answer. Following are some of these key words with their meanings:

Analyze – This means to separate an idea or thing into its elements or parts. You may simply want to examine the individual parts, or you may want to show how the parts relate to each other and to the whole.

Compare – Tell how two things are alike. In some cases, also write about their differences.

Contrast – Tell how two things are different.

Criticize – Tell, in your own opinion, about the views mentioned.

Define – Give clear, concise, authoritative meanings but not details. Give the limits of the definition and show how the thing you are defining differs from things in other classes.

Describe – Characterize, recount, relate or sketch in story form.

Diagram – Use a chart, drawing, plan or graphic to answer. Label a diagram and sometimes add a brief explanation or description.

Discuss – Examine and analyze carefully, giving the reasons for and against. Give details and be complete.

Enumerate – Give points specifically one by one in list or outline form.

Evaluate – Appraise the problem carefully, remembering to cite both advantages and limitations. Emphasize what authorities said and add a little of your own personal evaluation.

Explain – Clarify or interpret the material you present. Give reasons for results or for differences of opinion. Analyze causes.

Illustrate – To explain or clarify a problem by using a concrete example, diagram, figure, or picture.

Interpret – Translate, give examples of, solve or comment on a subject in a judgmental way.

Justify – Prove or give reasons for decisions or conclusions. Be convincing!

List – Write a series of concise statements.

Outline – Organize a description under main and subordinate points. Omit minor details and stress the classification of things.

Prove – Cite factual evidence or give logical reasons to establish that something is true.

Relate – Tell how things are related to, or connected with, each other. Show how one causes another, correlates with another, or is like another.

Review – Critically examine a subject. Analyze and comment on the important statements to be made about it.

State – Write the main ideas in brief, clear sequence. Usually the details, illustrations, or examples are omitted.

Summarize – Write the main ideas in brief, clear sequence. Usually the details, illustrations, or examples are omitted.

Trace – use narrative form to describe, from the point of origin, development, historical events, or progress.

Create a thesis or topic sentence first; then develop it through explanatory or illustrative details. Be sure to relate everything you write in your answer to the controlling idea in the topic sentence. Remember that the question itself will usually suggest the one central idea to be developed in the answer to the essay question. Understanding something about outlines is most helpful in this kind of writing. If you fail to organize your answer, you may find yourself merely listing or recounting the facts without plan and, therefore, rambling all around the subject without really answering the question or making your answer clear. Keep in mind that careful organization leads to unity, logic, and correct emphasis. With these things in your essay examination answer, you won't need to worry about your grades.

Keep in mind that your instructor expects concrete, precise, and specific terms. Nothing is more irritating than a succession of unexplained and unsupported generalizations; yet, this is one of the chief faults of examination answers.

You are naïve if you think that an instructor will accept obvious padding as a contribution to an essay examination answer. This merely draws attention to the fact that the student is trying to conceal his/her ignorance.

Critically read your essay examination answer again to be sure that you did what you intended to do. Even though there is little time for a complete revision of an answer, you may need to make a few specific changes or insert a comment between the lines or in the margin. Also, you may be able to correct obvious errors in spelling, punctuation, or grammar. Instructors rarely expect perfection in mechanics and style, but a lot of mistakes may make a bad impression and thus influence the instructor while s/he is grading your examination.

Recommendations To Follow During An Essay Examination

1. Remember the reader. Write legibly in ink unless you are requested to use pencil. Leave a margin on the left and on the right sides of the paper for the instructor's comments. Use the same numbers that the instructor used to number the questions.
2. When technical terms are involved, use them correctly and be sure that they are spelled correctly.

3. When you do not know the answer, admit it; trying to bluff your way through an examination makes a very bad impression upon our instructor.
4. Forget introductions; they waste both your time and your instructor's time.
5. Remember to emphasize the difference between theory and fact.
6. When you write about a controversial subject, be sure to cite what "authorities" have said about the subject and name these "authorities."
7. When you cannot remember the answer to a question, use your own background of knowledge and common sense to try to recall the answer.

Summary

In conclusion, then, to insure the best results when you take an essay examination, practice the following:

1. Read the question before you begin to write so that you are sure about what is expected.
2. Write an outline of your intended answer to assure a logical structure.
3. Note the time and points allotted to the questions; then plan and write accordingly.
4. Be as precise as possible in your answers.

These suggestions for taking an essay examination will only be helpful if they are read early enough to be assimilated before the testing period.

GENERAL SUGGESTIONS FOR TAKING TESTS

1. Plan your arrival so that you have plenty of time. Be sure to check your test taking material prior to leaving for the exam. (Showing up for an exam late or without a pencil is a sure way to focus unfavorable attention on yourself.)
2. Read all directions. Underline key words in the directions that give indication as to how your answers are to be recorded and how they should be worded.
3. Budget your time. Survey the test to determine the type and number of questions to be answered. Determine where you will start on the test. Check yourself at 15 or 20 minute intervals to determine if you are progressing at an acceptable rate.
4. Be aware that you may have problems remembering from time to time. If you find yourself blocking, move on to the next question.
5. Ask for help in interpreting test questions that you do not understand.
6. Be aware of any negative statements you are telling yourself about the test. Such statements as "I am failing, I didn't study for this, and the test is too hard for me" are sure ways of increasing anxiety.
7. Do not be concerned with what the other students are doing. (Another sure way of increasing anxiety is to tell yourself you are the only one having trouble.)
8. As a general rule answer the easy questions first.

TAKING OBJECTIVE EXAMS

1. Answer the questions in order.
2. Leave check marks by the questions that are doubtful.
3. Read the questions carefully. Be especially careful of questions containing negative words such as “not, no, least,” etc.
4. Check for wording such as “all, most, some, none; always, usually, seldom, never; best, worst; highest, lowest; smallest, largest.”
5. Watch for limiting phrases in true-false statements. Names, dates, places are often used as the key to make a statement false.
6. In multiple choice questions look for grammatical inconsistency between the stem and response. In most case the alternative is not correct if you find an inconsistency.
7. Change your answers only if you are sure you made an error.

SQ4R WORKSHEET

Directions: Select a chapter from one of your own textbooks. Choose a chapter that has been assigned by one of your instructors or one that has a good chance of being assigned soon. Read the chapter using the SQ4R reading-study system. Use the following SQ4R worksheet to get started.

S-Survey Read the title of the chapter, the introduction, each boldface heading, the summary, and look at any pictures or graphs included.

1. What is the chapter about?

2. What major topics are included?

Q-Question Turn the first heading into a question.

R-Read Read the material following the first heading, looking for the answer to your question.

R-Recite Reread the heading and recall the question you asked.

R-Write Briefly answer this question in your own words without looking at the section. Check to see if you are correct.

Continue using the question, read, recite and write steps until you have finished each part in the chapter. Then complete the review step.

R-Review Look over the total chapter by rereading the headings. Try to answer the question you made from each heading.

Answer to Question 1:

Answer to Question 2:

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Answer to Question 1:

Answer to Question 2:
