The Problem

In many colleges, over 80% of the students report problems concentrating on their studies. Most of these students blame outside distractions for their problems.

Many research studies manipulating noise levels and distractions have found that such disturbances may increase, decrease, or not even affect concentration. These researchers have therefore, concluded that distractors don't cause concentration problems directly. It is the way the distractors are interpreted by the students that disrupt their study.

Creating a Study Environment

1. Find a place to study and keep it for study only.
2. Tool-up the environment with all study needs.
3. Control noise level and the visual environment to acceptable levels.
4. Avoid relaxing while working; create a work atmosphere.

When To Study

1. Best before bedtime, you'll remember better.
2. Best when there are the fewest competing activities in progress.
3. Best when adequate rest periods are provided.
4. Stop studying when fatigue or lack of attention occurs.

How to Study and Concentrate

1. When distractors are present, become intensely involved.
2. Keep a pad of paper handy to jot down extraneous thoughts that cross your mind while studying, get them out of your mind and on to the paper.
3. Set study goals before you begin each period of study (number of pages, number of problems, etc.).
4. Design adequate rewards after specified goals are attained.
5. Break-up the content of study by mixing a variety of subjects, thereby building up interest and removing boredom.
6. Make the most of rest periods — do something quite different.
7. Don't try to mix work and play.
8. Start with short study periods, build slowly to longer periods, only as long as you maintain concentration.
9. If necessary, make a calendar of events to clear your mind of distractions.
10. Realize that you won't lose friends, respect, or a "good time" just because you're studying... these will keep.
11. Plan the length of your study period by the amount of material you have decided to cover, not by the clock. (Often the clock is one of the most serious distractors.)

Diagnostic Matters

It is probably necessary that you identify which subjects are related to the most serious concentration problems. You may notice that you really don't give yourself a chance with these subjects because of the time, order, or place you use to study. It may also be valuable to assess what your motives are for studying in the first place? What is your reward for your effort?
MEMORY TECHNIQUES

1. Review lecture and textbook notes on a regular basis, i.e. at least once a week. A short review once or twice a week takes less time than long periods of last minute cramming.

2. Use a multi-sensory approach:

   Visual. Try to remember how things look – maps, charts, important pages from the textbook. In a history course, make yourself a time chart; in a biology course, visualize whatever parts of the body you are studying and attach labels. Make an attempt to visually recall important words, relationships, and events.

   Verbal. Use verbal mnemonic devices (described below). Read notes out loud, or tape your notes and listen to them.

   Tactile. Try to imagine what things feel like. Vocabulary words may have a certain "feel" to them, try to remember that feel. Imagine what it would feel like to be a soldier during the American Revolution, or to hold a beating heart in your hands.

3. Use Flash Cards. Use 3" by 5" index cards. Write the word, phrase, or date on one side and its definition, or the important information connected with the date, on the other side. Flip through the pack front side up and try to recall what is on the back. Then reverse the process. Next, start at the middle of the back and work forwards, or backwards. It has been proven that in long memorizing tasks, the ends are memorized first, the middle last.

4. Use associations to trigger your memory. Make associations between things already familiar to you and something newly learned. Make use of any past knowledge, experience, or interest that helps you remember.

5. Use mnemonic devices:
   a. Rhyme, i.e., "I before E except after C, or when sounded like A as in neighbor and weigh."
   b. Rhythm, i.e., "A, B, C, D, E..."
   c. Acronyms, i.e., "Homes" for the names of the Great Lakes.
   d. Sentences, i.e., "Every good boy does fine" for the notes of the musical scale.
   e. Location, i.e., using your memory to find a lost object.
   f. Link Method, i.e., connecting items which need to be memorized in order.
REMEMBERING

Psychologists do not fully understand just how memory works. It has been experimentally proved that tiny physical traces of what we have experienced remain with us: electrical stimulation of certain areas of the brain will reproduce in our consciousness, as vividly as if they had just happened, the sounds, sights and smells of events we have not thought of in years and of which, until thus stimulated, we have had no conscious memory. So apparently we never actually lose what we have once experienced: it's still there, physically, encoded in our brain cortex. The problem is to get at it, as every suffering student knows.

A good deal is known about the learning process, however, and it has been proved that certain techniques of learning help retention and recall. The human mind is comparable to a data bank, and certain methods of input help us consciously produce what we need when we need it. The actual process of calling back to consciousness what we once consciously knew is a mystery. There is no button to push, facilitating memory.

1. Above all, understand what you are called on to remember. Set up a frame within which to organize the details and their relationships to each other. If the whole makes sense, the parts are easier to recall. For example:

   a. The medical student forced to remember the names of every nerve in the human body will remember more easily if he knows the function of each nerve and how it interacts with the others.

   b. The history student will better remember the necessary names, dates, and other details if he has a thorough understanding of purposed, trends, philosophies, the broad sweep of events.

   c. The language student will better remember the inflections of a language - the individual prefixes and suffixes which signal number, tense, etc. - if he has a grasp of basic structure.

In other words, remember in a context of principles, theories, important generalizations. Before you try to fix details in your mind, know the structure and main emphasis of what you are studying. The SQ3R (survey, question, read, recite, review) method of study, with its emphasis on surveying, questioning, and reading for main ideas, is a valuable aid.

2. The more thoroughly and the deeper you go into a subject, the better you will remember it. Apparently, broadening knowledge increases the number of associative links between one aspect and another and makes the whole structure stronger. This is one virtue of extra reading - doing extra problems - seeking out other points of view - tracking down ramifications.
3. Get yourself beyond the recognition stage, to the recall stage, the first time you encounter something you know you will have to remember. A certain amount of forgetting is inevitable anyway, but this method retards forgetting and makes recall easier. For example:

The SQ3R method of study puts heavy emphasis on the "recite" stage for this very reason. Deliberately closing the book, and going through the conscious effort of recalling the main points of what you have just read, while it is still fresh in your mind, seems to open the recall channel, so to speak, at a time when it is the easiest to open. The material seems closer to the surface, more easily accessible to review, if the deliberate attempt to recall is made immediately after first reading.

The emphasis here is on conscious effort: it is not enough to feel familiar with what you have just read, so that on second reading the main points and key details are easy to understand. Close the book and pull the points and details back to consciousness, from memory. Write them out in your own words if necessary; when you can say these things in your own words, you have made them yours.

4. In certain subjects – foreign languages, sciences, math for instance – the process known as overlearning is of material help; in fact, in language study it is essential. Examples are:

a. Overlearning is defined as "practice well beyond the point of mastery." It is an extension of the conscious effort to recall, to the point where conscious effort is no longer needed. "Overlearning results when a person continues to use a response repeatedly, with confirmation." How did you learn the alphabet?

b. Verbs, formulae, comparative anatomy, whatever it is you have to know without reaching for it - should be overlearned. The process is speeded if you use sight, sound and feeling to help you; write it down and say it aloud, let the senses reinforce each other.

c. A pack of file cards is often helpful. If you are studying complicated terminology for a science course, for instance, you can write the term on one side and its definition on the other. Flip through the pack front sides up and try to recall what is on the back. Then reverse the process. Then start at the middle of the pack and work forwards, or backwards. (It has been proved that in any long memorizing job, the ends are memorized first, the middle last.)

5. The importance of associations of ideas has already been emphasized. It often helps to deliberately build associates with what you have to remember. Doing this is like constructing a chain which will lead you to what you want. If you have one end firmly in mind it will lead you to the other end. Human minds vary greatly in the type of associative link to which response comes easiest, so there is no one best method, but here are a few approaches that have worked. A multi-sensory approach is usually best.
a. **Visualize.** Some people have vivid visual memories - i.e., memories for how things look. If you find yourself visualizing often - that is, if you remember better form charts and graphs than you do from the printed page, or if you remember how the page looked when you are trying to recall what was on it, you can make this tendency into an effective "aide-memoire."  

In a history course, for instance make yourself a time chart. If you are the medical student memorizing all the nerves, visualize the nervous system and attach labels. If you are taking a statistics course, remember visually the relationships between, for instance, standard deviations, z scores, t scores, and percentile ranks, and then reason from there. In recalling verb forms or vocabulary words, make a deliberate attempt to visualize the words.

b. **Use verbal mnemonic devices.** The world is full of examples: in spelling, for instance, the saying "there is a rat in separate" - nonsensical as it is - has helped many people remember how to spell separate. Students memorizing the colors of the spectrum remember the nonsense name Roy G. Biv: red, orange, yellow, green, blue, indigo, violet. Medical students have hundreds of such devices, passed on down the generations. Make up your own.

c. **Some people with a strong sense of rhythm recall some things by first remembering the lilt or rhythmic pattern; the words come next, and are recalled because they fit the rhythmic pattern.** One such person remembers phone numbers by the pattern they make: he recalls a number such as 8646265 by remembering the lilt of "EIGHT six FOUR six TWO six FIIIIVE."

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1 - From University of Maryland, Reading and Study Skills Center.  
2 - Quotations from *Educational Psychology*, by Lee J. Cronbach.