Central Technical Institute

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KANSAS CITY 8, MO.

HOW TO STUDY

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A COURSE OF STUDY
IN
ELECTRONICS, RADIO & TELEVISION TECHNOLOGY

PREPARED AND EDITED BY THE
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HOW TO STUDY

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WHY STUDY IS IMPORTANT

No one is born educated, wise or skillful. Everyone has to acquire such information, knowledge, wisdom, and skill as he possesses. Knowledge is acquired in several different ways.

We learn by experience, by observation, by association, by reading, by analyzing, by experiment, by discovery and, many times, by accident.

Studying is a process through which we seek to learn something by intention, usually for a specific purpose or use. In studying, we may employ any or all the methods or avenues through which learning occurs.

Some people learn more easily than others.

Some people have greater opportunity to learn than others.

Some people study more and try harder to learn than others.

Some people study more effectively, or efficiently, than others.

Men like Abraham Lincoln and Benjamin Franklin are examples of people who have a great desire to learn, who study at every opportunity and who study efficiently. Neither of these men had very good opportunities to learn but both took full advantage of such opportunities as they possessed and made their own opportunities to a great extent. Although both of these men had limited educational opportunities in that they could not attend residence schools, and correspondence training was not available, they read everything they could get and *mentally digested what they read.*

The study habit is essential to success for every individual and, like any other undertaking, it takes *time*, *effort*, and *system* to accomplish worthwhile results.

If everyone had equal ability and equal opportunity to learn, TIME would be the most important and limiting factor in learning. Because of individual differences, TIME is more important in learning for some people than for others. Everyone HAS JUST 24 HOURS A DAY of time. Someone has pointed out that TIME is "rationed." Everyone has just so much of it at his disposal; you can't draw on your quota in advance, and if you waste it you can never recover it or make up for it.

The first item to consider in planning a program of study is to determine how much time you have available for study. If you sleep 8 hours and work 8 hours you have only 8 hours left out of the 24. Allowing another 4 hours for eating, bathing, and other personal needs, plus travel to and from work, you have only 4 hours per day left for recreation, study, social activities, and miscellaneous items which make demands on your time.

THERE ARE MANY WAYS TO SAVE TIME

Some people organize their use of time and secure better utilization of it by reading the newspaper while eating, reading or studying while riding to and from work, planning or memorizing while shaving or dressing, etc.

However, since most people utilize such time savers, it is only the individual who undertakes a planned program of study during his spare time who succeeds above the average. In budgeting spare time, study should receive *first* consideration because it alone is the *ACCELERATOR OF SUCCESS.*

PLANNING YOUR STUDY PROGRAM

In planning your study program, don't expect too much of yourself. Don't set up an impossible program which you cannot

adhere to or achieve, because you are bound to fail and become discouraged. The habit of failure is one of the things which all successful people learn to avoid. Don't try to study when you are too tired—you will only "muddle" around and accomplish little. Plan to do your studying when you are mentally and physically fit for it even if it has to be early in the morning. Remember your study time demands your best—because it alone is the *ACCELERATOR OF SUCCESS.*

Do not be influenced by others who may try to belittle your desire to study. Stop and analyze such persons and see where they are headed. Are they the most important or most successful persons in your community? Are they genuinely interested in your welfare? Men like Charles M. Schwab, Walter P. Chrysler, Henry Ford, and many other successful business leaders, have testified to the importance of study in their own lives and have

"Look, darling, isn't that Mrs. Bimpwell over there?"

ARE THE PEOPLE WHO TRY TO DISTRACT YOU REALLY INTERESTED IN YOUR WELFARE?

consistently encouraged the men around them to improve their time by study.

Check yourself on the best methods for you to use in studying; then always approach your study in the most effective manner.

THE COMPOSITION OF THINKING OR STUDYING

Study is a form of effective thinking. It involves an idea about how to solve the problem, a step-by-step method of procedure, and an inference or conclusion. Its foremost motivating force is natural curiosity, the desire to know not only "what," but "how" and "why." To many, it is a means to an end, or a

"Now for one hundred dollars, quickly—what's the cube root of 9411682?"

goal; to others, it is the end in itself. Thus, some study so that the knowledge gained will increase their earning power, or their business or social prestige. Others study for the sheer desire to learn, for the exultation or satisfaction that comes through self achievement.

As with any art, there are certain procedures involved in the thinking or studying process, certain ingredients which, when combined in the proper proportions, create an acceptable finished product. Likewise, there are definite tools (equipment—materials —devices) for studying, without which the study process lacks effectiveness. Knowledge of the materials, the tools, and the use of the tools, is necessary for the full development of effective study.

EXAMINE YOUR MENTAL ATTITUDE

Do you *want* to learn the particular subject matter you are studying? If you do not have an interest in the material you are attempting to grasp, your study will be of little use to you. It is presumed that you have chosen this particular course of study so that you can earn a livelihood, become a useful citizen of your community, and be happy in your chosen work. If this is true, then you have a goal, without one all study suggestions are useless.

No doubt there will be phases of your chosen course of study which will be of minor interest to you. Yet, when you realize that all parts of your course have been selected to fit you more completely for a position in which advancement is possible, your interest should be stimulated. Make yourself believe that for you, at that time, it is the most important thing in the world. Perhaps you find it hard to believe that some portion of the course is useful. How can you know? If you were in a position to judge the usefulness of every part of the course, the extent of your knowledge would be sufficient that you would not require the course of training.

APPROACH THE SUBJECT MATTER WITH AN OPEN MIND

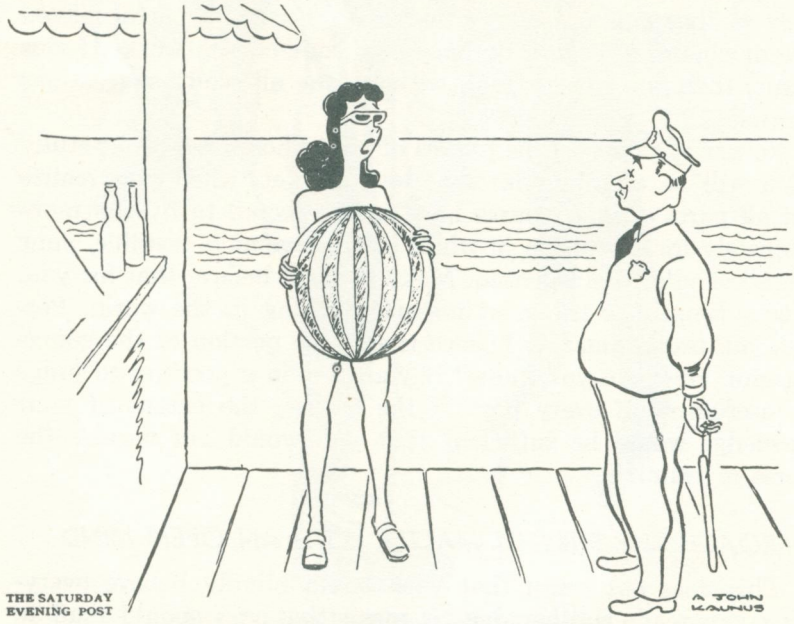
This does *not* mean that you should blindly believe everything you read. Neither does it mean that you should read to contradict or find fault with the author. Rather your purpose should be to weigh and consider. Develop mental courage and

determination in your ability to grasp the subject. Your object is to understand the subject, not merely to read a book. In fact, you may read a lesson many times until, at last, you can recite it practically word for word, but until you understand it you haven't really learned anything.

Most likely you are limited in the time available for the preparation of your lesson, and it may be necessary for you to accept frequently a statement which you read, although the reason for it at the time may not be clear to you. Accept it conditionally and make a written note of it as something to come back to for further study. You may even find further explanation on the next page or even the next sentence. If not, you will then have the written note to remind you to look it up later.

DO NOT STUDY WITH PRECONCEIVED IDEAS

Approach the material with the scientific attitude of mind. This means that you should organize facts and then draw a logical conclusion. Further, it means that you will be ready to accept any logical conclusion even though it be distasteful to



"I most certainly *do* have a bathing suit on."

SOME STATEMENTS MUST BE ACCEPTED AT "FACE" VALUE

you. Remember that the truth is more important than any of your beliefs. In looking up reference material consult all authoritative references, not only those which support your own beliefs.

YOUR MIND MUST BE ALERT AND ACTIVE

Studying is not a passive occupation; it requires honest effort on your part. Do not expect ideas to come to you out of nothingness. Exert your mind; it will be stimulated by such effort.

"There is no door, I tell you!
You'll have to find your way out!"

HONEST EFFORT IS REQUIRED

SYSTEM IS A GREAT TIME SAVER

Having definite times set aside for your study periods will actually give you more time for other things. Use your study period profitably. Do not think about beginning—actually begin. Apply your efforts consistently, and haul your mind back when

it starts to wander. How do you know that you can't concentrate? How earnestly have you ever tried? Don't think that the man who has great power of concentration was born that way. He had just as much trouble as you are now having when he started to cultivate this faculty.

CONCENTRATION CAN BE ACHIEVED

DOES STUDY GIVE YOU A HEADACHE?

It isn't due to the mental effort expended. Maybe you need glasses; lots of people do, you know. It might be wise to check up on your physical condition. Are you getting sufficient exercise? The mind doesn't require rest, but the body does; and with the body in poor condition you are only adding to the distractions pulling you away from your proper mental effort.

WHEN — WHERE — AND HOW TO STUDY

Set aside a definite amount of time for study (even though it is only 15 minutes a day) and then DO it. The world is full of failures who planned to study and then allowed social activ-

ities, recreation, friends, the heat, the cold, or this-and-that to interfere with their schedule. Keep in mind that your employer values your time and will probably "fire" you if you consistently allow other activities to interfere with working for him. Certainly, your study schedule is equally important to you—so stick to it.

Designate a definite place to study, a place where you have space enough, where you keep your study equipment and materials—so that you do not waste time looking for a pencil, an eraser, note paper, etc. You will soon establish the habit of study in such a place.

Organize your study place so that materials, references, files, typewriter, or similar equipment, have a definite place and are so arranged as to be readily accessible to your reach without disturbing your concentration on the subject of your study.

GIVE YOUR MIND A FAIR CHANCE BY SELECTING THE PROPER PLACE AND TIME FOR STUDY

When you are attempting to cultivate your ability to concentrate, you should at first try to provide the minimum of distraction. Proper lighting, temperature, ventilation, and freedom from noise are some of the things to consider. Later on, when you have developed your ability to concentrate, will be soon enough for attempting study under adverse conditions.

DEFINITION

Learning is made easier by the proper and frequent use of the dictionary. If you are not sure that you understand the exact meaning of a word or term, look it up in the dictionary.

Another useful device is to make your own definition of a thing in writing and then compare it with dictionary definitions or check it against all the cases you can find that apply. Example: write your definition of a chair. Next, list under it all the types of chairs you can think of such as straight-chair, rocking-chair, posture-chair, pullman-chair, high-chair, wheel-chair, tablet-arm-chair, folding-chair, executive-chair, overstuffed-chair, etc., and then examine the definition which you wrote to see if it is broad enough, inclusive enough, or specific enough to enable anyone who had never seen a chair to understand the concept of "chair."

MEMORY

Memory is the process by which we recall the observations that we have made or have learned from others. The man with a retentive mind obviously has an advantage over the one with a poor memory. He can recall previous facts and relations that he has grasped for use in future study.

HAVE YOUR STUDY PLACE PROPERLY ARRANGED

SPECIAL METHODS AND DEVICES IN STUDYING

MEMORIZING: There are two types of memorizing, namely, recall and recognition.

The recall type of memorizing is what we do when we learn to recite a poem, or state a law or principle, such as Newton's laws of motion in physics, or the axiom that "A straight line is the shortest distance between two points" in geometry. In memorizing such material it is usually better to learn the whole state-

ment or poem at one time rather than just a sentence at a time. If, however, the material is very lengthy, such as Scott's "Lady of the Lake," it is most easily memorized by stanzas or cantos.

The recognition type of memorizing is the one we use most and may be illustrated by the exercise of learning the names of the States of the Union and their abbreviations or their capitals. The objective being that when you see the abbreviation "Nebr." you recognize that it refers to Nebraska, etc. Memorizing of this type is most easily accomplished by writing the names on one side of slips of paper and the abbreviations on the other, and then writing or saying the corresponding term while looking at one of them. Thus, we learn to associate one with the other and to "recognize" a concept whenever we see either of them.

Only a small per cent of material to be studied requires memorizing. There are some things which should be memorized thoroughly because that is the most efficient way to handle or use them. Among these are:

The letters of the alphabet
The Arabic numerals
The spelling and pronunciation of common words
The typewriter or teletype keyboard

The procedure of driving an automobile—

and many other items of information or manipulation which we use so often and so routinely that if we had to stop and think of every step or look up the item each time we used it would cause us to lose too much time. It is cheaper in time and effort to *overlearn* these items to the point where our responses become automatic. There are some aspects of every job which need to be overlearned. LEARN TO SPOT SUCH ITEMS AND CONCENTRATE ON MEMORIZING THEM; AND DON'T WASTE TIME MEMORIZING USELESS INFORMATION.

ASSOCIATION

We learn to remember most things by association.

Association is the binding agent of our thoughts. It causes us to recall our learning by leading us from one point to the next. Our ideas do not come to us in just any way, but only as the complex mechanism of association causes one thought to bring forth another. By proper association there is determined the quality of our thinking. It causes us to think of the right thing

at the right time, the circumstances before us having caused a chain of thoughts which lead to the proper solution.

We remember a great number of things by association with something else. For example, the word "sun" brings to mind such concepts as: Sunday, sunlight, sunshine, sunburn, sunrise, sunset, sun-lamp, sun-glasses, etc.

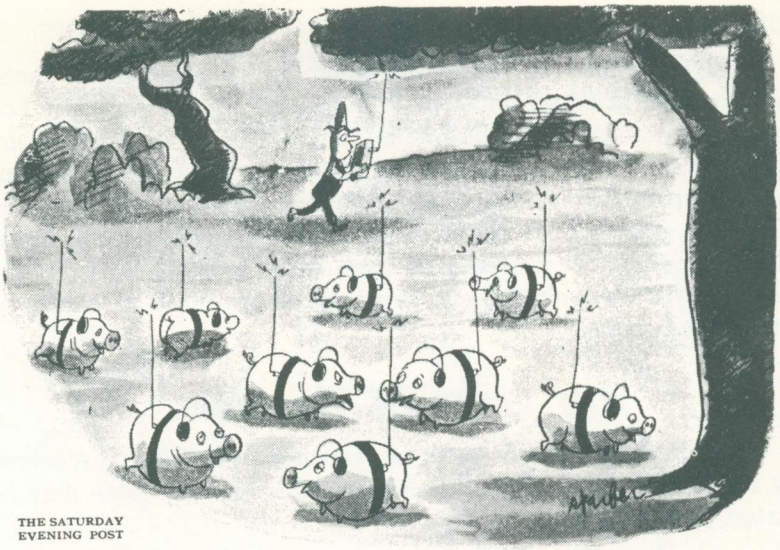
Analogy and association are also helpful in gaining understanding. Example: Electricity is a broad and somewhat abstract and intangible concept; whereas, water is a tangible, visible substance. To convey an understanding of how electricity behaves in circuits, teachers often use what is commonly known as the "Water analogy," likening electromotive force to water pressure, etc.

Analogy as a device in thinking or learning always partakes of the elements of comparison and contrast. In explaining the dynamic force of a tornado we may liken it to a huge vacuum sweeper, or explain that an airplane rides on air, like a ship rides on the sea. This thought process is evident in our common expressions such as:

"Hail as big as hen's eggs"
"A hail of bullets"
"A torrent of words"
"A tempestuous nature"
"A savage disposition"
"A sea of faces"
"A horde of men"
"A mouse of a man"
"Rabbit courage"
etc.

IMAGINATION

The ability to think beyond the bare facts as they may be presented to us involves imagination. Memory depends upon the past; imagination projects into the future. It can be a great help in the process of studying, but it can also be a hindrance. It elevates us above the literal-minded, allowing us to develop our mental behavior beyond the plane of mere imitative acts. It is a necessary ingredient in the process of thinking but it must be used in right proportions along with the other ingredients.



IMAGINATION IS A GOOD THING IN RIGHT PROPORTIONS

READING

Next to observation, most people learn more through reading than in any other way. Learn to read well. Don't skip over words or passages. Look for main ideas and main topics, then outline with main topics as headings and fill in the related ideas and sub-topics under them. This is a very effective way to study and it assures that you do not overlook important items or get the emphasis in the wrong places. It also provides an outline for quick review which you can go over and over until sufficient learning has occurred. This device is a great economizer of time.

ANALYSIS

Analysis is the process whereby we pick to pieces the problem confronting us—what makes it tick? Without it, we would accept or reject any situation or conclusion merely on our beliefs, and our thinking would be on the lowest levels. Analysis involves not only the taking apart of a problem, but also the viewing of the parts with the proper perspective so that we may see how each is essential to the integrated whole. We thereby assign relative importance to each portion.

JUDGMENT

Judgment may be called the weighing or appraisal of facts, motives, and assorted evidence. It measures not the quantity but the quality of the facts before us, and allows us to reach a decision or conclusion. It makes us critical of what we observe or read; it prevents us from accepting everything that may be offered as evidence. It allows us to see the flaws and weaknesses of an argument. It prevents us from being carried away by the novelty of a viewpoint. Good judgment is the mark of a trained and mature mind.

THE LAWS OF LEARNING

Certain principles or laws of learning have been discovered by educators and teachers. The most important of these may be stated as follows:

DEFINITENESS — The more definite the learning, the more prompt and certain the response will be when the information is needed.

SATISFACTION — Experiences which are satisfying tend to be repeated, while unpleasant experiences tend not to be repeated. (This is a good reason for setting up your study place and routine so that you really accomplish something and gain a feeling of achievement. Your study periods should be interesting and pleasant. Do not allow yourself to become frustrated or discouraged.)

RECENCY — The more recent the learning or the repetition, the more accurate and certain will be the response when the information is needed. (This is the cue to review what you have learned frequently and definitely, thus you learn to recall it with a minimum of effort.)

FORGETTING — The less definite and less recent the learning, the less prompt and less certain the response. (Ebbinghaus, investigating forgetting, scientifically found that most of the loss occurs in the first few hours; after that, forgetting proceeds very gradually. After one hour he

forgot 56%, after nine hours 64%, after two days 72%, and after 31 days 79%.) This is another most significant reason for studying in such a manner (outlining, etc.) that one can review frequently and quickly.

DON'T ALLOW YOURSELF TO BECOME FRUSTRATED

METHODS OF STUDY

Ignorance of how to study is perhaps the greatest reason for failure in schools and colleges. Recently it was reported that 64 per cent of the freshman class of one of our large universities with a select group of students and with high academic stand-

ards felt that they needed urgently a special course of instruction in how to study. The experience of every instructor confirms the opinion of these freshmen.

What do we do when we study? Most of us would answer that we read so many pages as assigned, work out the problems given, and prepare the papers or the outlines set by our instructor. In truth, we may do one or more of a variety of things. One who has really studied will agree that study is the energetic use of one's mind for the satisfaction of a felt want or for the solution of a real difficulty. The mechanic trying to determine why an engine will not start studies a real problem as truly as does the student in the formal class in mathematics or navigation. Study may involve such activities as the following:

Rapid reading, or skimming to get the gist of a passage.
Careful reading for full and detailed comprehension.
Memorizing.
Thinking to solve problems or difficulties of various kinds.
Critical observation.
Practicing a skill, as in studying music or typewriting.
Listening with attention.
Writing, composing, or outlining what others have written.

Definition: Any process that we employ as an aid to learning we may call studying.

OBSERVATION

We perhaps learn more by observation than in any other manner. We observe how a thing appears, sounds, feels, or how much it weighs, how hard or soft it is, how hot or cold, how long or short, how large or small, how far or near, etc. Thus, by making close observations and comparing it with other things we gain a concept of it, which includes a series of descriptive and related facts which gives us understanding.

The primary means of gathering facts is through observation. We make use of our senses of seeing, hearing, feeling, smelling, and tasting. Whatever sharpens our senses aids in our observations, and thus improves our thinking. Our observation depends quite naturally upon our interest in a particular subject. Some of us see things vaguely or incompletely, perhaps for lack of interest or training. Each of us has his own particular field of interest in which observations will be keenest.

If a group of people view the same object or evidence, each may receive a different impression, depending upon where his interest may lie. Suppose that a movie audience is watching a photoplay; all may be conscious of the dialogue and the actions

"There's a definite leak somewhere."

MANY THINGS ARE LEARNED BY OBSERVATION

of the players, yet an architect in the audience will leave the theatre with a much better impression than will anyone else of the types of buildings that were shown in the story. A clothes designer could give a far more detailed account of the clothing worn by the cast than could the average person. Weakness in the plot might be discernible only to the professional author, and a sour note in the musical score only to the trained musician. Observation for the most part was general, becoming specific only when some point of individual interest was touched. Through

training we learn to observe not only facts but the relationships between facts. We learn to discriminate, directing our attention to pertinent facts.

SYNTHESIS

Synthesis is the opposite of analysis. It is the building or constructing of a group of facts or individual conclusions into a complex whole. Thus, it is often the purpose of analysis. We may pick something to pieces to find out how to put it together. Synthesis implies organizing or constructing. Thus, the executive weaves the various operations of many departments into a successful vital whole, and forms, or constructs something which did not exist before.

PRACTICE

Some learning can only be completed through practice. The best known examples of this type of learning are perhaps piano playing and typewriting. The most important thing to guard

BAD HABITS AND WRONG CONCEPTS HAVE TO BE UNLEARNED

against in this type of study is the practicing of error. Habit is a very useful, but also a very powerful element; once a thing is learned the wrong way, or a mistaken concept is gained, it is very difficult to unlearn the wrong way or break the bad habit. Be sure that you are proceeding in the right way before you practice.

EXPERIENCE

Experience is not always the same as experimenting. For example: For a beginner to learn how to drive a car by experimenting, without instructions, would be unwise, and perhaps costly both as to time and safety. However, no amount of reading about how to drive or talking about it would ever teach him to drive unless he actually tried to drive and gained the actual experience which is so necessary to this type of manipulative learning.

TEACHING AND TELLING

One of the best ways really to learn a thing is to teach or tell someone else about it. If you can explain it so that he understands it, it is good evidence that you, yourself, know and understand it. This procedure gives you practice in putting your thoughts and ideas into words. You should seek to state the facts or principles in as few words as possible, using the exact word which will convey the meaning which you intend, and avoid using irrelevant, misleading, or ambiguous words. If there is no one to "tell it to" write it out in a letter to a friend, edit it carefully and then throw it in the waste basket or file it for future reference or review. This is one of the finest possible devices for mastering a subject and really "making it your own."

SUGGESTIONS FOR STUDENTS

Be sure that what you study is worth knowing.

Make sure that you understand what you are to do.

Develop the time-and-place habit of study.

See that the conditions for effective study are right. There should be adequate light, air, heat, quiet. TURN OFF THE RADIO OR TELEVISION.

Make certain that all necessary materials, texts, etc., are at hand.

Begin work promptly. Do not dawdle. Attack your work promptly and vigorously.

It helps to take the easier points first; for example, to draw the necessary diagrams or charts, to write out the problem and the data, to jot down ideas, to review the main points of the preceding lesson or job.

Allow no lapses of attention, no pleasant day-dreaming. Put other things out of your mind, concentrate, and work purposefully and steadily.

If the lesson involves reading, get a general view of the lesson by reading the entire assignment before tackling the details.

At times during your studying, with your book closed, recall the new points you have learned in their proper relationships. Then center your attention on those which you do not thoroughly understand.

Make an outline or summary of the main points of the work you have covered.

Memorize the main ideas or any required facts or information.

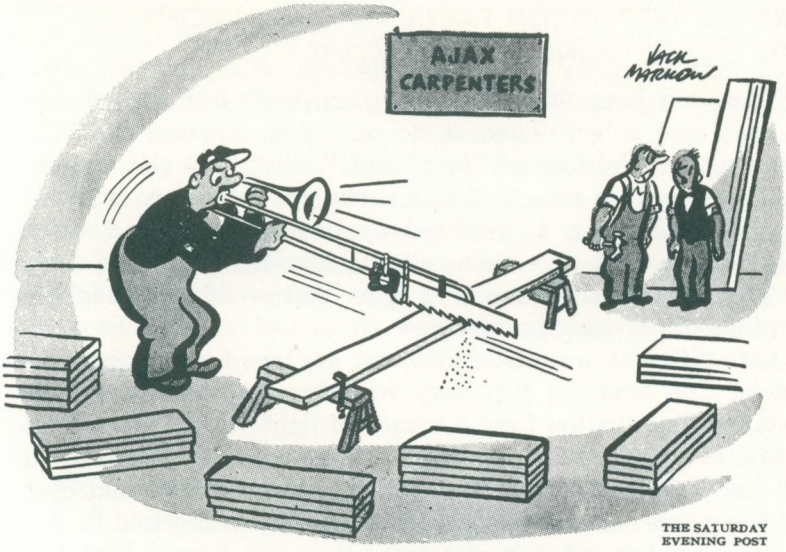
If you are studying principles, illustrate each with a concrete example of that principle. To do so will help fix the principle in your mind.

When you believe that you have completed your studying, check the assignment to make sure that you have done, to the best of your ability, all that was assigned.

TRY TO ACHIEVE THE CORRECT PROPORTIONS OF STUDY, RELAXATION, AND REST

Do not become an extremist in your efforts to learn. The mind does not require rest, but it does need a frequent change of occupation for maximum efficiency. Alternate your periods of study with times of relaxation, light reading, engaging in sports, and during such times keep your mind free from worry about your studies. Do not, however, make your study periods so short that your mind is not brought up to its fullest powers of concentration.

Keep in mind at all times that the purpose of study is not to collect an assortment of facts, but to develop your ability to meet and face squarely new problems as they arise.



STRIVE FOR BALANCE BETWEEN WORK AND PLAY

LEARN TO DO INDEPENDENT WORK

Only by the surmounting of your own facilities can you gain the strength required to attack more difficult material. You shouldn't expect things to be too easy. Naturally, you will make mistakes; but when those mistakes are pointed out to you, and you fully understand the reason for your errors, you will have gained immensely in your ability to solve similar problems. Welcome examinations as a means of indicating to *you* your own weaknesses. Remember that the instructor does not give you a mark—you mark yourself.

YOU MUST LEARN TO FORMULATE CLEARLY THE PROBLEM THAT CONFRONTS YOU

Suppose you are attempting to solve a problem. List the known facts. What facts are required to be found? Visualize the problem; draw diagrams. Which of the known facts are essential to the solution? What intermediate steps must be taken in going from the essential known facts to the required answer? You should state all of these points clearly before you ever begin the actual solution.

LEARN TO DISTINGUISH FACTS AND DEFINITIONS FROM CONCLUSIONS AND OPINIONS

When you have read that there are 5,280 feet in one mile you have read a fact. There is no reason for it other than the fundamental definitions of "foot" and "mile." It would be possible for you, given time and equipment, to verify this fact, but you must realize that to verify every fact that you read about would require that you make all the investigations that have been made since the beginning of time. You would not be taking advantage of previous knowledge.

Quite different are conclusions that are based upon a number of facts. For example, you may read from physics that "the amount of illumination from a source of light varies inversely as the square of the distance." Assume that you were required to learn this; you could, of course, merely repeat it over and over until the words came automatically. You have memorized it, but you have not learned it in the sense that you have full understanding of its meaning. For complete learning of this information, you should first make sure that you know the meaning of the various parts of the statement. What does "amount of illumination" signify? What is meant by "varies inversely?" Can you picture the meaning of "Square of the distance?" Next, you should consider how you can apply this information. What examples of its application do you already know? Finally, ask yourself how you can state the information in other words. The ability to express a given thought or group of thoughts in *your* words rather than those of the author's is a good indication of your understanding of the material.

In re-stating the principle, would it be adequate to say, "The closer a source of light is, the brighter the illumination?" Is the illumination 8 times or 64 times as great at a distance of 8 feet as at a distance of 64 feet? Does this same principle apply to a source of sound and sound intensity, or loudness?

TO UNDERSTAND A THING WELL, YOU MUST LEARN NOT ONLY WHAT IT IS BUT ALSO WHAT IT IS NOT

Recognize the limitations of a conclusion. Analyze it from every viewpoint. Consider some cases to which it does not properly apply. Perhaps the conditions are not the same. It is, for example, fairly well known that most materials contract when

their temperature is lowered. We might, therefore, attempt to apply this conclusion to all materials throughout all temperature ranges. However, if we are cautious we will recognize the possibility of there being exceptions to this rule. Water is a very common one. As water cools, it contracts until a temperature of approximately 40 degrees Fahrenheit is reached, after which, with additional cooling, it begins to expand. As the temperature falls below the freezing point the water changes to ice with a fairly large expansion taking place during the process. We see, therefore, that it is wise not to jump to a conclusion and that, after a conclusion is reached to be wary of applying it to all cases indiscriminately.

"Ugh! Somebody left a horrible old can of worms under the seat."

GENERALIZATION

Generalization is the process of finding the rule which applies to a given set of circumstances and then extending that rule to fit as many given conditions as may be possible. Perhaps you have observed or read that where a stream is shallow the flow of the water is rapid. You might generalize and state that the swiftness of the water depends upon the depth of the stream. Does the familiar expression, "Still water runs deep" follow from the generalization? With training, your generalizations will become more accurate. You will be less tempted to jump to a conclusion and you will extend your generalizations only when pertinent and conclusive data is presented to you.

REVIEW YOUR STUDIES AT FREQUENT INTERVALS

To review is not to re-study, rather it is to go over the important main points in the material to be reviewed. It is a good idea to use a part of each study period for review work. A short review of the previous lesson before starting the study of a new one will show what has been imperfectly learned and provide a better foundation for the new material that is to be studied. In reviewing for an examination, review selectively. Make a list from your knowledge of the subject of the important points in the material to be covered. This will show you wherein you are weak so that your review time can be spent most profitably on the doubtful points.

DO YOU THINK ABOUT YOUR COURSE OF TRAINING ONLY WHEN YOU HAVE AN OPEN TEXT BEFORE YOUR EYES?

Perhaps you are the type of student all of whose study period is devoted to staring at an open text; if so, your study methods are far from efficient. After reading a particular discussion, close your text and reflect upon what you have just read. Do you understand it? Will your understanding of it pass the test of your ability to express the information in *your* words? How does this information tie in with previous learning? How did the author reach his conclusions? If this is not immediately apparent, do not spend too much time on it but see how you would have reached a conclusion and whether your results agree with those of the text.

LEARN TO BE MODEST IN YOUR KNOWLEDGE AND TO ACCEPT CORRECTION AS A MEANS OF FURTHERING IT

No type is more obnoxious than the swelled head who blatantly expounds his supposed wisdom. He is truly the example of a narrow mind. With recognition of the limitations of your own knowledge you will be able to use corrections to your own advantage. Following this, you will find that the more you learn, the more you become aware of the things yet to be learned and you will grow humble in your knowledge.

SUMMARY ON "HOW TO STUDY"

1. Set aside a definite amount of time for study.
2. Establish a regular place for study.
3. Organize and arrange the study place for efficient work.
4. Eliminate distracting influences.
5. Begin work promptly and keep at it.
6. Memorize only essential material.
7. Outline the material you are studying.
8. Experiment as directed.
9. Practice, but do not practice error.
10. Write or tell it to someone else.
11. Review and repeat what you have learned frequently.
12. Strive constantly to study more efficiently.

REMEMBER:

STUDY IS THE ACCELERATOR OF SUCCESS

STEP ON IT!