



CHAPTER 13

DEVELOPING CRITICAL THINKING SKILLS

LEARNING OBJECTIVES

After studying and working with the information in this chapter, you should be able to:

1. Explain what critical thinking is.
2. Describe the process of critical thinking.
3. Identify the ways that critical thinking can improve your life.
4. Define the term metacognition and explain its relationship to critical thinking.
5. List the Nine Rules of Critical Thinking.
6. Identify some common mistakes in critical thinking.
7. Begin developing critical thinking skills.

Using the rules of critical thinking can improve your life by making you feel mentally adequate in all kinds of situations.

Have you ever shopped around for the best price on a car or other important purchase? Have you ever discussed a problem with a trusted friend, parent, or teacher? Have you decided that the information in this book is helpful and important? Are you already using some "Tools for Active Learning"?

If your answer to any of these questions is “YES,” then you have done some critical thinking. Critical thinking comes naturally and easily to the mind. You do it all the time, quite unconsciously. However, you can improve your critical thinking skills by learning more about them and by consciously practicing the critical thinking techniques presented in this chapter.

Developing good critical thinking skills can help you to do well in your studies and in your work. What critical thinking skills do you already possess that could be helpful in both school and work?



Critical thinking is an important part of learning and living. Many schools today list critical thinking as one of their teaching goals. More and more employers look for people with critical thinking skills because jobs have changed. In the past, most work was done by hand and individuals followed their bosses' instructions. Today the trend is toward work performed in teams using highly technical equipment. This new workplace environment requires independent thinking and problem-solving abilities that are based on habits of critical thinking.

This chapter will acquaint you with some basic critical thinking concepts and provide you with some skills for improving your thinking. Because there's a lot of information about critical thinking, some suggestions for further reading are listed in the recommended bibliography in Appendix F.



SELF-EVALUATION

The following self-evaluation will give you an idea of how familiar, or unfamiliar, you are with some of the topics and terms dis-

cussed in this chapter. After reading each statement, circle the letter (Y, S, or N) most appropriate to your answer. Please answer thoughtfully, rate yourself at the end, and then complete the information for Chapter 13 on page 375 in Appendix A.

Y = yes; frequently S = sometimes N = no; never

- | | | | |
|--|---|---|---|
| 1. I regularly think about my thinking. | Y | S | N |
| 2. I know what critical thinking is. | Y | S | N |
| 3. I make decisions with careful thought and planning. | Y | S | N |
| 4. I know the definition of the word "metacognition." | Y | S | N |
| 5. I know when I need more information. | Y | S | N |
| 6. I know at least five Rules of Critical Thinking. | Y | S | N |
| 7. I know the difference between "apple polishing" and "name calling." | Y | S | N |
| 8. I can identify common mistakes in thinking in advertising and political speeches. | Y | S | N |
| 9. I can identify and describe how critical thinking affects my life. | Y | S | N |
| 10. I realize that knowledge about thinking can improve thinking. | Y | S | N |

Rate Yourself

Number of Ys _____ x 100 =

Number of Ss _____ x 50 =

Number of Ns _____ x 10 =

Total =

Take time to think . . . It is the source of power.

- Anonymous

WHAT IS CRITICAL THINKING?

Critical thinking is thinking about thinking in order to decide what to believe and how to behave. Critical thinking is time consuming. It involves planning and information gathering before decisions get made and actions begin.

Tasks requiring critical thinking fill your life. Using time management techniques, reading labels on food products in order to avoid salt, and deciding how to vote in an election are three familiar activities that involve critical thinking.

List three decisions you've made recently that you believe involved critical thinking:

1. _____
2. _____
3. _____

Select one of the decisions that you listed and describe how you came to the decision you made. Use the following questions to help you with your description.

- When did you know you needed to make a decision?
- What planning did you do?
- What steps did you take? (when begun? when ended?)
- Who had to be involved?
- What information did you need?
- How long did the process take?
- Were the results what you wanted?

Critical Thinking Is a Process

As you can see from the previous exercise, critical thinking is a process. It often takes more time than you are used to spending on daily things like cooking, dressing, bathing, etc. You are used to speed in your life. Stopping to think can feel dull and boring. So can memorizing, taking notes, planning schedules, and the other study activities that are described in this book.

Changes in society and technology have added this speed to our lives. Most of us are used to getting results quickly. Slowing down to do such simple, yet time-consuming tasks such as waiting in line, cleaning a room, or mowing the lawn can feel unnatural and unending.

Take a moment and do the following exercise in order to realize how life has sped up in recent years.

How have the following aspects of life sped up in the last 100 years?

Example: Clothing was made at home; now we buy it ready-made at stores.

Bread _____

Transportation _____

Communication _____

Although your daily activities have sped up, *the thinking and learning processes of the brain have not changed.* Education is a process that requires time and practice. It cannot be purchased as a product at a store. You have to do things in order to learn. One of the things you have to do to learn is stop and think things out for yourself.

In Chapter 1 you learned about becoming an active learner, constantly thinking about your reasons for going to school and about some of the strategies you can use to be a successful student. This constant thinking about your learning in order to be a successful student is another example of critical thinking. *Critical thinking is an important part of active learning.*

Improving Life with Critical Thinking

It is true that many ordinary tasks can be done quickly. However, many can be done *better* using critical thinking. For example:

Putting away the groceries: arranging the groceries in categories makes it easier to find things later and to keep track of what's "on hand."

Several other tasks are listed below. In the space provided, describe the thinking that can improve each one.

1. Buying clothes for a new job: _____

2. Deciding on courses for next term: _____

3. Selecting a location for a club party: _____

4. Deciding on charities to support: _____

Deciding what to believe. Using critical thinking to decide what to believe is important. Careful thinking can save you from being cheated, can keep you pointed toward your goals, can save you time and money, can help you select friends, and so forth.

Often it is difficult to decide what to believe. In the autumn of 1991, millions of American people tried to decide whether to believe Anita Hill or Clarence Thomas. Mr. Thomas was accused of sexually harassing Ms. Hill when she worked for him years earlier. At the time, Mr. Thomas was seeking approval by the United States Senate for an appointment to the highly respected Supreme Court. Mr. Thomas was eventually confirmed, but many people still believe Ms. Hill was telling the truth.

Belief is a big issue in courts of law. The accused are considered innocent until proven guilty. Decisions come from careful consideration by a judge or the vote of a jury. Sometimes justice is unsuccessful and the innocent are found guilty. You have probably read or heard news stories about people being released from prison after years behind bars because of new evidence proving their innocence.

When do you have to decide what to believe in your daily life? You probably are already skeptical about advertisers and politicians. But what about the people you see every day? What claims do they make that you are asked to believe?

Think about recent events in your life and select several situations in which you've wondered whether someone or something was believable.

Examples: Does a friend really like the gift you gave her?
Is a college education really necessary for success in life?

1. _____

2. _____

3. _____

Select one of the examples you listed and think about it or discuss it with your classmates, using the following questions as guides:

- How important is it for you to know the truth?
- In what ways will you be able to know the truth?
- What will you do if you know the truth?

Example: Knowing the truth about my friend and the gift can save me money and make my friend happy. I might learn the truth by noticing if my friend uses my gift. I could also ask her other friends, or I could ask her point blank. If I know the truth, I will know how to make better gift selections in the future.

Many learning activities call for critical thinking about what to believe. Two examples are reading and writing. When you read, you decide whether to believe the author. When you write, you want your readers to decide to believe you.

It is easy to get used to believing what is written in your assignments or told to you by teachers and other sources of information. Have you ever heard of the expression “question authority”? Consider the slick salesman who always has the answers. Remember that a person who knows a lot about a subject can be a better liar than someone who knows nothing.

There is no easy way to be sure that critical thinking will provide correct answers, but it can help you avoid obvious mistakes in thinking. Taking time to think critically can also make you feel better about yourself and the decisions that you make.

The next two sections of this chapter are devoted to helping you develop your critical thinking skills. The first will provide you with some guides called the Rules of Critical Thinking. The second will point out some common mistakes in thinking that are often used to influence your beliefs and your behaviors.

W

are what we think. All that we are arises with our thoughts. With our thoughts we make the world.

- Buddha, Indian religious leader

THE RULES OF CRITICAL THINKING

The rules of critical thinking are valuable in several ways. First, they can help you identify situations that can be improved by critical thinking. Second, the rules can also help you feel mentally adequate and enable you to avoid harmful gossip and arguments. Finally, the rules encourage the practice of **metacognition**, or conscious attention to your thinking. Metacognition comes from *meta* which means beyond and *cognition* which means thinking. The regular use of metacognition, or thinking about thinking, will make your thinking better!

The Nine Rules of Critical Thinking, listed in Figure 13–1, are the tools for putting critical thinking to work. A short explanation of each rule follows the list. Use these rules to improve your critical thinking.

Figure 13–1
The Nine Rules of Critical Thinking*

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1. Be open-minded about new ideas.
 2. Don't argue about things you know nothing about.
 3. Know when you need more information.
 4. Be aware that different people have different ideas about the meanings of words, gestures, etc.
 5. Know the difference between something that must be true and something that might be true.
 6. Avoid mistakes in your thinking.
 7. Question anything that doesn't make sense.
 8. Separate emotional and logical thinking.
 9. Develop your vocabulary in order to understand others and to make yourself understood.

* Adapted by L.Loomis [from Anita Harnadeck (1976)].

Explanation of the Rules of Critical Thinking

Read the description for each of the rules for critical thinking carefully. Think about each one and discuss with your classmates any personal examples you can think of. *Using the rules of critical thinking can improve your life by making you feel mentally adequate in all kinds of situations.*

Be open-minded about new ideas. This rule seems easy until a new idea comes along. For you, a new idea could be presented as new

information in one of your classes. This idea may seem strange, silly, stupid, boring, artificial, unimportant, etc.

A sign that you are experiencing a new idea is if you feel uncomfortable or feel yourself resisting it. For example, if your instructor decides to change the way you hand in your homework assignments, it is easy to say "I've gotten along fine the other way. Why should I change now?"

Begin to notice when you are feeling uncomfortable or resisting and ask yourself if there is a new idea floating around. Since the world is changing rapidly these days, it is important to become open-minded about new ideas in order to survive.

Think about a time when you experienced open-mindedness. Describe it below.

Don't argue about things you know nothing about. If you feel yourself reacting to a new idea, it is a good idea to hold your tongue until you have enough information on which to base your opinion.

If you hear a rumor, use this rule to avoid gossip that can harm others. A simple "I don't know anything about it" can eliminate hurtful talk.

Think about a time when you tried to argue about something you really didn't know much about. What happened?

Know when you need more information. How do you know when you need more information? Your brain doesn't tell you directly. Instead, it may tell you that you feel stupid, frustrated, incompetent, etc.

The next time you get a "stupid" message, say to yourself "I'M NOT STUPID, I JUST NEED MORE INFORMATION." Then ask a question, make a note to ask someone, or look something up. Remember the reminders in Chapter 1—"I do not understand and will ask my instructor" and "Know when to ask for help and then ask for it." These are two examples of how to use this rule.

Practice saying "I need more information" and learn to get rid of negative self-talk about being dumb or inadequate.

Describe a time when you received a "stupid message." What happened? What can you do in the future to get rid of "stupid messages?"

Be aware that different people have different ideas about the meanings of words, gestures, expressions, etc. This is a rule that could also be called "different strokes for different folks." It is easy to agree with the rule. BUT when someone disagrees with you about something, it is also easy to get angry and refuse to listen to the other point of view.

Getting angry is a signal to use metacognition. Stop and think about the situation. Talk yourself into listening to the other person. The more you practice, the better you get. The old expression "count to ten before answering when you are angry" is a metacognitive strategy for this circumstance. This can help you to avoid saying things you don't mean. Using this rule can also cut down on arguments and fights.

Can you think of a time when someone disagreed with you? What happened? How can this rule help you deal with people better?

Know the difference between something that *must* be true and something that *might* be true. This rule will help you separate facts (must be's) and opinions (might be's). It is another useful rule for avoiding rumor and gossip situations.

For example: It is a *fact* that someone in the class is whispering (must be); it is an *opinion* that the whispering is about you (might be).

Whenever someone makes a statement that sounds like a fact, ask yourself if the statement is a fact (must be) or an opinion (might be) and look for evidence to support or refute the statement.

Can you think of a time when a fact became confused with an opinion? What happened?

Avoid mistakes in your thinking. There are many kinds of mistakes in thinking. The next section of this chapter describes some of them. A very common mistake is called “hasty generalization.” If one taste of a new food leads you to say the food is nasty, then you are guilty of hasty generalization.

Question anything that doesn't make sense. Questioning is a great exercise for developing critical thinking. When you don't understand something someone says, what do you usually do?

It is important to know that when someone wants to trick you, they sometimes try to make you feel stupid in order to keep you from asking questions. They then try to hurry you and give you the feeling you are an idiot when you want to slow down and think critically. They know that you may become suspicious because their answers may not make sense.

If you let a situation go by *without* understanding something someone says, then you have let an active learning opportunity pass you by.

What can you do the next time you don't understand something?

Separate emotional and logical thinking. You have feelings (emotions) and reasons (logical thinking) for everything you experience. Good critical thinking invites you to use both emotions and logic in making decisions. This rule suggests that you do two things. First collect logical information and see where it leads you. Then notice your feelings.

For example: Your logic may tell you that the red dress or tie is a better buy than the blue one. But if you don't like the red item, then purchasing it will be a waste of time and money and a source of regret because you probably will never wear it.

In school you may be unhappy about the results of a test. While you can use your logic to see your mistakes and make plans to improve your work, you also need to express your emotions and recover from your disappointment in the company of supportive friends and family.

This rule is difficult. The ability to use it is considered a sign of maturity.

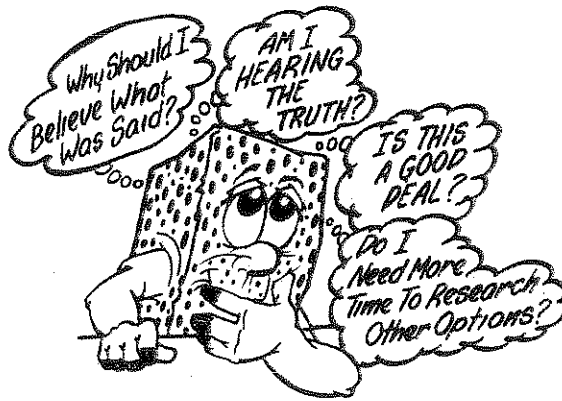
Develop your vocabulary in order to understand others and make yourself understood. Chapter 5 is devoted to building vocabulary. Use its tips and guidelines to increase your knowledge of the English language. Enjoy the power provided by a large vocabulary. Your studying will be easier.

The brain loves words. Feed it!

Practicing the Rules of Critical Thinking

Now it's time to practice the rules. Is critical thinking taking place in the following situations? Circle YES or NO and then write a short explanation of your answer citing the rules that are being kept or being broken.

Are you aware of when you are thinking critically? Is the process of critical thinking going on here?



Example: Mary says she is going to drop her psychology course. The professor talks all the time about things she's never heard of and she can't imagine how any of the information could ever be useful. YES/NO

Mary is not using critical thinking. She is not being open-minded about new ideas.

1. Erin is having problems writing biology lab reports and makes an appointment to get help from her instructor. YES/NO

2. Ed is upset about failing a test. He tears it up, leaves the room before the professor goes over the questions, and cuts the next two classes. YES/NO

3. Takeisha cannot find her notebook and accuses her roommate of hiding it. YES/NO

4. Whenever Sergei comes across an unfamiliar word he writes it down in a special section of his notebook. After collecting several of these words he stops, looks them up, and records the meaning that fits whatever he is reading. YES/NO

SOME COMMON MISTAKES IN THINKING

This section is devoted to avoiding mistakes in your thinking. There are so many mistakes in thinking that books are written about them and philosophers spend their lives discussing them. Some of the most common mistakes in thinking are described in the following paragraphs. *Your critical thinking will be greatly improved by becoming aware of these mistakes.*

Making decisions is a part of critical thinking. BUT some decisions are not made with the benefit of critical thinking. Going along with the crowd in order to be popular, making fun of some-

one or something you disagree with, and returning an insult with an insult all involve decisions made without the benefit of critical thinking. These kinds of decisions are considered “mistakes in thinking” and have names: peer pressure, horse laugh, and two wrongs make a right.

Another mistake in thinking was mentioned in the description of this rule. It is called *hasty generalization*. Common examples of this include deciding you don’t like someone you’ve just met, giving up a new sport or hobby after only one or two tries, and refusing to listen to some new music because you didn’t understand it the first time you heard it.

Additional common mistakes in thinking are described below:

Name calling. Name calling substitutes a personal insult for a direct response to another person’s statement.

Example: John says, “Being metacognitive about studying is a great help” but Alex responds, “That’s a typical nerd statement if I ever heard one!”

Scare tactics, appeals to pity, and apple polishing. These all focus on emotional thinking and ignore logic. Which one is which in the following examples?

Example A: “Professor Rankin, please let me hand in my paper tomorrow. I had to take care of my sick relative. When I finally started typing I ran out of paper and it was too late to get any. If you accept my paper late, I’ll be able to stay off probation.”

Mistake : _____

Example B: “We, the membership committee of the Sigma Club, understand that you’ve been very active with the student newspaper. Did you know that it was *our* club president that was kicked off *your* paper’s editorial board last year?”

Mistake : _____

Example C: “Joe, please let me photocopy your notes to study for the exam. Your handwriting is so much neater than mine and you always get more than I do from Professor Thomas’s lectures.”

Mistake: _____

False dilemma. People use false dilemma to make you think there are only two choices in a situation: the one they want and an unattractive or terrible alternative.

Example: The statement “Strong men drink liquor—what’s the matter with you?” is intended to make you think that you

aren't strong if you don't drink. Actually there are many ways to be strong. The peer-pressure tactic mentioned earlier often combines forces with false dilemma.

Slippery slope. Situations involving change often encounter slippery slope thinking. Claims are made that the change will lead to many more changes and that the end result will be awful.

Example: "If we let you have two excused absences from class then you'll want pass/fail exams and before we know it all our academic standards of excellence will have disappeared."

Begging the question. This is also known as circular reasoning. The same statement gets repeated in reverse order. Nothing new is added to the thinking.

Example: "Athletes need a good, healthy diet. Therefore paying attention to what you eat is important if you want to perform well in sports."

Straw man. Have you ever had anyone disagree with you by changing your statement? The changed statement is the "straw man." Notice how your brother changes your "one time clean-up" suggestion to a "daily one" in the following example.

Example: You ask your brother to help you clean the bathroom. He says he can't clean it up every day. It's too much work and a waste of time.

You're another. This last example of common mistakes in thinking is often used by people who spend a lot of time together. It resembles "straw man" because it avoids the subject. Where "straw man" changes the original statement, "you're another" introduces another subject.

Example: If your brother's response to your suggestion about cleaning the bathroom had been, "and when are you going to get me a date for New Year's Eve?" then you would have experienced "you're another." You can respond with: "Let's deal with both of these issues. They are important. Which one shall we discuss first?"


Do you recognize these mistakes in thinking? They are purposefully used in many situations in order to influence your decisions. *Name calling*, *scare tactics*, and *false dilemma* are favorites of politicians. Advertisers are fond of *apple polishing*, *peer pressure*, *slippery slopes*, and *straw men*. Look for these mistakes in thinking when you read or hear political speeches or advertisements.

Practice Identifying Mistakes in Thinking

Practice identifying some of the mistakes in thinking described in this section by doing the following matching exercise.

Can you recognize when you are failing to think critically? What mistake in thinking is this advertisement appealing to?

**Wear the shoes
that makes the pros great and your
teammates more competitive.**



Run Faster!

Jump Higher!

**Leave your
opponents in
the dust!**

Don't be left behind!

Match mistakes in thinking with their examples by placing the letter of the example next to the number of the mistake. Try not to refer back to the text.

- | | |
|---------------------------------------|---|
| <p>___ 1. Two wrongs make a right</p> | <p>a. One look at that woman's clothes and I knew we had nothing in common.</p> |
| <p>___ 2. Hasty generalization</p> | <p>b. I'd like to have you on my committee. You're always on time, you have lots of good ideas, and you are great on the telephone.</p> |
| <p>___ 3. Peer pressure</p> | <p>c. Joe, tell me how to do this assignment. I need to get a good grade and I won't tell your girl friend I saw you out with Sue.</p> |
| <p>___ 4. Scare tactics</p> | <p>d. Recycling in this town? You've got to be kidding. What a joke.</p> |
| <p>___ 5. Apple polishing</p> | <p>e. After Anita ruined my dress and made no effort to replace it, I had no problem lending her cashmere sweater to my sister without asking her permission.</p> |
| <p>___ 6. Horse laugh</p> | <p>f. I don't know if we ought to admit women to this club. The next thing you know</p> |

___ 7. Slippery slope

___ 8. Begging the question

___ 9. Straw man

___ 10. Name calling

they'll be running everything their way and all the men will quit.

g. Anna says that regular planning helps her keep on top of her studies. That's too much for me. I can't be bothered jotting things down on my schedule every five minutes.

h. You mean you don't have a tape player? Everyone I know owns one.

i. Well, that's just like a freshman to want to know the way to the bookstore.

j. Keeping an up-to-date assignment book helps you remember your homework. You won't forget your assignments if you write them all in the same place.

You see things and you say, "Why?" But I dream things that never were; and I say, "Why not?"

- *George Bernard Shaw, author and playwright*

POINT OF VIEW

The mistakes in thinking that you've been learning in this chapter are frequently used by people who want to persuade you to believe or do something. They have a particular point of view and their messages to you are tilted to favor that point of view. That tilt is called **bias**.

Two common groups of persuaders in our American society are politicians and advertisers. Politicians want you to believe in their ideas and vote for them. Many of their statements are biased in that direction.

What do advertisers want you to believe and do? _____

In order to influence you, a persuader only shows you part of the picture . . . that is, the picture from that person's point of view OR from a point of view that he or she thinks you will like. Presenting part of a picture is often called "card stacking." The persuader only shows you the cards he or she has chosen, instead of giving you the whole deck.

When you recognize bias, several rules of critical thinking are especially useful:

1. Because you realize you are not getting the whole picture *you know you need more information, and you see it's time to separate the facts from the opinions.*
2. If the persuader is playing on your emotions (pity, fear, pride, greed, etc.), then alert yourself to think logically.
3. If the persuader is using unfamiliar terms and trying to make you hurry, *question anything that doesn't make sense and build up your vocabulary.*
4. If the persuader has a different point of view and some new ideas, you might want to learn more about his or her message. Perhaps there is something worthwhile behind the bias. *Keep an open mind, don't argue if you have no information, and know that there can be other points of view than yours.*

Here's an example of an everyday kind of persuasive situation:

An old friend is trying to get you to go to an expensive benefit dinner for a local charity. You recognize a persuasive situation so you do some critical thinking. Identify the rules you use as you go through the following process.

1. "Do I know everything I need to know? What more information do I need?"
-
-

2. "Why is my friend pushing so hard for me to attend. It doesn't make sense."
-
-

3. "I know that the charity is important but what else might be going on? What might I be getting into?"

4. "I've never been to a benefit dinner for charity. I've always thought it better to give to the charity directly. However, if everything looks O.K., I might give it a try."

Persuasion, bias, and point of view are everywhere. What are some of your points of view? When have you tried to persuade someone to do something? Use the following space to list a few situations in which you've done some persuading.

Example:

Persuasive act: Asking someone to vote for you in an election.
 Point of view: You have had experience and will work hard. The incumbent has not kept his campaign promises and doesn't deserve to be reelected. Also, you like to be a winner and you want to be famous. (Notice your emotional bias in the second sentence.)

Now develop your own examples:

1. Persuasive act:

Point of view:

2. Persuasive act:

Point of view:

Looking for points of view is a quality of critical thinking. Determining point of view can help you make decisions. Another

person's point of view can be acceptable or unacceptable, depending on your own biases. You'll often choose to believe points of view with which you agree and which you think will help you in your life. **HOWEVER, REMEMBER: BE OPEN-MINDED TO NEW IDEAS.** Practice using other points of view and accept people who have them. So much new information is being produced these days that new ideas are unavoidable.

Points of view connect with what you believe is important in life. What's important to you carries feelings. Thus, part of your critical thinking is always related to your feelings. (Remember the rule about logic and emotions?) Be a careful critical thinker by continuously noticing your feelings about situations and by examining what you believe is important.

Most sources of information have points of view. This book, for example, is biased in favor of studying and learning. The author feels that education is important and believes that everyone can learn how to learn. The author values learning.

Describe the point of view of a person who would not want to use this book:

Critical thinking asks you to think carefully not only about ordinary events, but also about current environmental and economic topics, such as global warming, the appropriate role of government, and other aspects that can affect your daily life. You probably have some strong feelings about quite a few of these topics. List some of them in the space provided below.

Some current topics that concern me are: _____

Philosophers who study critical thinking and the new knowledge being learned about the brain believe that the human mind has the ability to solve the problems of the world. But to do so will take educating people about critical thinking as well as a commitment to use it. *Study Skills: The Tools for Active Learning* is based on knowledge about the brain. Furthermore, the whole book, not just this chapter, invites you to be a critical thinker . . . to think about yourself, your life, your goals, to believe you can learn, and to act accordingly.

Part of your life as an active learner often includes an essay, a paper, or a speech in which you have to organize and show your thinking. Sometimes you have to do this quickly on a test. In Chapter 15, you will find more information on how to present your point of view.

THE USE OF YOUR MIND

You live in an era about discovery of the power of your mind and your ability to think. New discoveries about the brain are being revealed regularly. Every chapter in this book contains advice and information based on up-to-date information about your brain.

People used to think that mental and physical abilities were set at birth. Now it is known that you can improve both through instruction and practice. In fact, your brain won't age as quickly as your body. Being an active learner and a critical thinker will keep you mentally sharp all your life.

SUMMARY

1. Critical thinking is thinking about thinking in order to decide what to believe and how to behave.
2. Critical thinking is a process. In order to become a critical thinker, you have to learn to stop and think things out for yourself. It helps you to decide what to believe. Critical thinking can also improve your life.
3. Metacognition means thinking about thinking. The regular use of metacognition will make your thinking better.
4. The Nine Rules of Critical Thinking are the tools for putting critical thinking to work. Becoming aware of them is the first step in this learning process.
5. Making decisions is a part of critical thinking. However, it is important to be aware of the common mistakes in thinking that influence your decisions.
6. Becoming an effective critical thinker will give you the intellectual power to succeed in almost any situation.



REVIEW

Using your own words, answer the following questions based on the information you learned in this chapter.

1. In your own words, what is critical thinking?

2. What is metacognition? What is its relationship to critical thinking?

3. Describe a situation in which you did some critical thinking.

4. Explain how critical thinking can improve your life.

5. Name and explain the importance of three of the Rules of Critical Thinking.

6. Name and explain three examples of mistakes in thinking.

7. When, where, and how will you use critical thinking in your studies?
