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To all my children, with a love
that transcends time and trouble





序　言

在 20 世纪的大部分时间里，很多教育工作者都觉得学生通过学习某些学科（尤其是数学和自然科学）就学会了思考，因此没必要正式地教给他们批判性思维的技能。然而最近风向变了：中学和大学普遍承认了思维技能的重要性，以及正式教授这些技能的必要性。现在，几乎每个教育协会都在呼吁要更加重视批判性思维。教育家、政治家、社会学家以及各个领域的学者都明白，言语和影像的诉求在不断地轰炸我们，试图说服我们去相信、去行动、去购买或者去参与。我们都需要批判性思维的技能和策略，这样才能理解和分析那些诉求。

本书既可以给正式的批判性思维课程作为教材，也可以给各个强调批判性思维的学科作为教学补充材料。

这个版本有哪些新内容?

《思考的艺术》第 11 版主要增加了与时俱进的新鲜内容，比如很多贴近时下社会背景的新应用练习，其主题包括如下内容。

（1）应用练习鼓励学生批判性地思考新近发生的一些争议事件，比如：

- 斯诺登揭露美国政府监控
- 自己嫁给自己的女人
- 处罚使用枪支的行为
- 扩大联合国的权力
- 财富再分配

- “就地防卫”法
- 最低工资

（2）第 2 章增加了一个新的策略，可以帮助学生掌握调查技能，它所基于的原则是：如果你不理解争议的双方（或各方），你就不理解这个争议。

（3）进行了全面的更新和修订，确保所有内容的时效性、趣味性和吸引力。

哪些内容没有改变?

就像本书之前的各个版本一样，如下 4 个前提仍是这一版内容和布局的基础。

（1）一本讨论思考的书应该强调“要做什么”，而不是“要避免做什么”。思考不是象牙塔中的事业，而是实际问题。思考是积极、动态的，而不是消极、静态的。有效的思考者不会坐在那里批评别人的努力，他们会解决问题，做出决策，表明立场。教思考时专注于谬误，这不会比教音乐时一味强调避免错误的音符更成功。

（2）一本讨论思考的书应该让读者掌握思考的原则和技巧。过去 50 年里出版的大量相关文献已经证实，思考的创造性思维过程与批判性思维过程相互交织：我们首先产生想法（多少都带有一定的创造性），然后对想法进行判断。让读者知道已经形成的问题和争议是不够的，还必须让他们学会构造自己的问题和争议。

（3）一本讨论思考的书应该教会读者怎样评价自己的想法以及别人的想法。人类非常善于自欺，因此对于读者来说，看到自身的盲点、偏见和错误，要比给别人挑毛病困难得多。然而对他们的有效思考而言，最大的障碍恰恰是他们自身的弱点和错误。

（4）一本讨论思考的书应该教会读者怎样说服别人。有很多巧妙的想法从未付诸实践，就因为原创者以为别人自然会认识到其想法的绝妙之处。读者需要学习怎样预测和克服自己的想法可能遭到的反对。

为了支持这些前提，本书将促进能力的发展和策略的掌握。

- 章节的安排尽可能符合解决问题和分析争议的真实顺序。例如，第 7 章是表述问题或争议，然后第 8 章是调查问题或争议，接着第 9 章是产生想法，而第 11 章是改进问题的解决方案。
- 第二部分“要有创造性”直接回答了最令读者困惑、阻碍他们思考的一些问题，比如：“在寻找问题的解决方案时，我怎样才能更有想象力、更有独创性？”“在遭遇思考障碍时，在我茫然困惑时，或者在我的思维变得僵化时，我应该怎么做？”“顿悟是怎样发生的？我怎样才能激发顿悟？”
- 第 1 章有一节的标题是“让讨论有意义”，专门为课堂讨论提供了指导原则。
- 第 8 章详细阐述了怎样快速、高效、巧妙地调查争议，介绍了 11 种信息来源（“调查什么”），以及怎样使用互联网和怎样避免抄袭。
- 第 6 章是独立的一章，激励读者把思考技能应用在日常的学习和生活中，用来解决碰到的问题和争议。权威们一致认为，要想取得成效，思考教学必须同时注重技能和态度。
- 第 14 章和第 15 章帮助学生有效、有说服力地表达自己的想法。尽管在一本探讨思考的书中大篇幅地讨论写作和演讲似乎不太合适，但是只要你打算传播或实施自己的想法，那么不管你使用什么媒介，表达的质量都有可能是决定成败的关键因素。我们希望帮助你更深刻地认识思想与表达之间的互补关系，以及力求把这两方面都做得出色的重要性。
- 在每章的末尾先是简短的“热身练习”，然后才是较长的“应用练习”。尽管“热身练习”可能看起来不太严肃，但是正如爱因斯坦所指出的，游戏心态是“创造性思考的本质特征”（参见第 5 章中“创造型人才的特征”）。以我的经验来看，“热身练习”有助于营造更放松的气氛，能让你变得更有想象力甚至更大胆，不再感到局促和难堪。尤其是对腼腆或紧张的人来说，在这样的气氛中获得的自信往往能延续到“更严肃”的“应用练习”

中。

- 每一章都有较长的“应用练习”，鼓励大家实际应用学到的原则和方法。

更多功能

本书已被成功地用于作文、公开演讲、创造性和批判性思维等课程，以及商科、人文学科、社会科学和自然科学等众多学科。如果教师觉得本书的目录不太符合课程或学生的需求，可以考虑在授课顺序上做如下调整：

用于作文课

- 第 15 章“有效地写作和演讲”的前半部分
- 第 1 章“培养思考能力：概述”
- 第 14 章“说服别人”
- 第 2 章“奠定基础”
- 第 3 章到第 13 章

用于演讲课

- 第 15 章“有效地写作和演讲”的后半部分
- 第 1 章“培养思考能力：概述”
- 第 14 章“说服别人”
- 第 2 章“奠定基础”
- 第 3 章到第 13 章

其他可选方案

这个顺序适合于已经精通写作或演讲的学生。

- 第 1 章到第 4 章
- 第 14 章
- 第 5 章到第 13 章

文森特 • 赖安 • 拉吉罗

Preface

Throughout most of the last century, the sense among many educators was that students learned to think through the study of certain subjects—notably math and science—and that the formal teaching of critical-thinking skills was unnecessary. More recently, however, the pendulum has swung in the other direction: The importance of thinking skills—and the need to teach these skills formally to students at both the secondary and college levels—was recognized. Now virtually every major educational association has joined the call for an increased emphasis on critical thinking. Educators, politicians, sociologists, scholars in every discipline understand that we are constantly bombarded by appeals—both words and images—intended to persuade us to believe something, do something, buy sometime, join something. We all need the skills and strategies to understand and analyze these appeals.

This book is designed for use both in formal courses on thinking and as a supplement in courses in a wide range of disciplines where critical thinking is stressed.

WHAT'S NEW IN THIS EDITION OF *THE ART OF THINKING*

The focus in this eleventh edition of *The Art of Thinking* has been primarily to bring a fresh and current perspective to the text. In addition, a number of timely new Applications have been added. The subjects include the following:

- New Applications encourage students to think critically about controversial, contemporary issues including:
  - The Snowden revelation about government surveillance
  - The woman who married herself
  - Punishing the *use* of guns
  - Expanding U.N. powers
  - "Redistributing" wealth
  - "Stand your ground" laws and
  - The minimum wage
- A new strategy in Chapter 2 helps students with their investigative skill. It is based on the principle that *if you don't understand both (or all) sides of an issue, you don't understand the issue.*
- Updates and revisions throughout ensure that all the content is current and engaging.

WHAT HASN'T CHANGED IN THIS EDITION

As in every edition of *The Art of Thinking*, the following four premises underlie its content and organization.

1. *A textbook on thinking should emphasize what to do rather than what to* avoid *doing.* Thinking is not an ivory tower enterprise; it is a practical matter. It is active and dynamic, not reactive and static. Effective thinkers do not sit back and criticize others' efforts; they solve problems, make decisions, and take stands on issues. Focusing on fallacies is no more successful in teaching thinking than focusing on avoiding wrong notes would be in teaching music.
2. *A textbook on thinking should introduce students to the principles and techniques of thinking.* The considerable literature that has been published on thinking over the last half-century demonstrates that the creative process and the critical process are intertwined: first, we produce ideas (more or less creatively); then we judge them. Giving

students *already formed* problems and issues is not enough; they must be taught how to generate problems and issues of their own.

3. *A textbook on thinking should teach students how to evaluate their own ideas, as well as the ideas of others.* Human beings have a great capacity for self-deception. Accordingly, it is much more difficult for students to see their own blind spots, prejudices, and errors than it is for them to see those of others. Yet it is their own weaknesses and mistakes that pose the greatest obstacle to their effective thinking.
4. *A textbook on thinking should teach students how to persuade others.* Many brilliant ideas have never been put into practice simply because the originators assumed that others would recognize their excellence without assistance. Students need to learn how to anticipate objections to their ideas before they occur and how to overcome them.

In support of these premises, *The Art of Thinking* is designed to encourage skill and strategy building.

- Wherever possible, the chapters are presented in the sequence that occurs in actual problem solving and issue analysis. For example, expressing the problem (Chapter 7) is followed by investigating the problem (Chapter 8), producing ideas (Chapter 9), and refining the solution (Chapter 11).
- Part II, "Be Creative," offers direct answers to the questions that baffle students most and prevent their progress in thinking. These are questions such as "How can I be more imaginative, more original in my solutions to problems?" "What should I do when I experience 'thinker's block,' when I get confused, or when I get in the rut of producing the same kinds of solutions?" and "How does insight occur, and what can I do to stimulate it?"
- In Chapter 1, a special section titled "Making Discussion Meaningful" provides guidelines for class discussion.
- Chapter 8 explains in detail how to investigate issues quickly, efficiently, and with ingenuity, both inside and outside the library, and

includes sections on describing eleven sources of information ("What to Look for"), on using the Internet, and on avoiding plagiarism.

- A separate chapter (Chapter 6) addresses the problem of motivating students to apply their thinking skills to problems and issues in every college course, as well as in everyday life. Authorities agree that to be effective, thinking instruction must focus not only on skills but also on attitudes.
- Two chapters—Chapters 14 and 15—assist students in expressing their thoughts persuasively and effectively. Although giving attention to writing and speaking may seem out of place in a textbook on thinking, the quality of expression can make the difference between success and failure whenever ideas need to be disseminated or implemented, in whatever medium. We do students a service by deepening their awareness of the complementary relationship between thought and expression and the importance of striving for excellence in both.
- Brief "Warm-Up Exercises" precede the lengthier "Applications" at the end of each chapter. Although these exercises may seem frivolous, playfulness, as Einstein noted, is "the essential feature in productive thought." (See "Characteristics of Creative People" in Chapter 5.) In my experience, the "Warm-Up Exercises" help to create a more relaxed atmosphere in which students can be imaginative and even daring without feeling embarrassed. The confidence students gain in such an atmosphere tends to carry over (particularly for shy or anxious students) into more "serious" "Applications."
- Each chapter includes lengthy "Applications" that encourage students to make practical use of what they have learned.
- An updated Instructor's Manual is available to qualified adopters. The Instructor's Manual offers teaching suggestions on how to stimulate students and create a thinking classroom. Also included are additional exercises and answers to *The Art of Thinking*'s applications.

VARIATIONS IN TEACHING FORMAT

The Art of Thinking has been used successfully in composition courses and public speaking courses, as well as in creative/critical thinking courses, and in a number of disciplines, including business, humanities, social sciences, and sciences. Instructors for whom the book's table of contents does not immediately seem well suited to their courses or their students' needs may wish to consider one of the following alternative sequences:

For Composition Courses

The first half of Chapter 15, "Writing and Speaking Effectively"
Chapter 1, "Developing Your Thinking: An Overview"
Chapter 14, "Persuading Others"
Chapter 2, "Establish a Foundation"
Chapters 3 through 13

For Speech Courses

The second half of Chapter 15, "Writing and Speaking Effectively"
Chapter 1, "Developing Your Thinking: An Overview"
Chapter 14, "Persuading Others"
Chapter 2, "Establish a Foundation"
Chapters 3 through 13

Another Alternative

This alternative is appropriate for students who are already proficient in writing and/or speaking.

Chapters 1 through 4
Chapter 14
Chapters 5 through 13

ACKNOWLEDGMENTS

I wish, first, to express my appreciation to all the men and women—the prophets, the researchers, the risk takers—who labored to advance the cause of knowledge in a subject that for many decades was unfashionable. Without their contributions, this book would never have been written. I also wish to thank the following professors for their constructive criticisms and helpful suggestions for this edition and several previous editions: Brian Barbour, Guilford Technical Community College; Larry Beason, University of South Alabama; Michael Berberich, Galveston College; Liz Burke, John F. Kennedy University; Michaela Cosgrove, Keuka College; Kathryn Cowan, Cabrillo College; Adam Brooke Davis, Truman State University; Bart Demeter, ITT Technical Institute; Jeffrey Easlick, Saginaw Valley State University; Maureen Girard, Monterey Peninsula College; Cory Goehring, Warner University; Lynne R. Graft, Saginaw Valley State University; Jezreel Kang-Graham, Southern Utah University; Julia Keefer, New York University; Philip M. Keith, St. Cloud State University; Constance Kent, College of the Sequoias; Alice M. Kracke, Tulane University; Melinda Kreth, Central Michigan University; Nicole Lyons, ITT Technical Institute; Joel Maatman, Lansing Community College; Jane Maulfair, Crest College; Catherine McCartney, Bemidji State University; Donald McDonough, Central Connecticut State University; James Michael Mullins, University of Texas at El Paso; Liz Noblis, Lansing Community College; John Pappas, San Joaquin Delta College; Joanna N. Paull, Lakeland Community College; Jody Pierce, Lincoln College of Technology; Thomas Riddle, Guilford Technical Community College; Steve Ryan, ITT Technical Institute; Jessie Sams, Stephen F., Austin State University; Elizabeth Sawin, Missouri Western State College; Dahlia Schweitzer, Fashion Institute of Design and Merchandising; Sandra Snow, Central Michigan University; Charles Stone, DePaul University; Leila E. Wells, University of Louisville; Amanda Yates, ITT Technical Institute.

Vincent Ryan Ruggiero

Thinking is an art, with its own purposes, standards, principles, rules, strategies, and precautions. And it is an art well worth learning, for every important thing we do is affected by our habits of mind.

Contents

PART I Be Aware

PART II Be Creative

PART I

Be Aware

"Every man takes the limits of his own field of vision for the limits of the world," wrote philosopher Arthur Schopenhauer. The wider a person's field of vision, of course, the deeper and more accurate his or her grasp of everyday experiences.

The chapters included in this section of the book will enlarge your understanding of the thinking process; clarify the important and frequently misunderstood concepts of *truth*, *knowledge*, and *opinion*; identify the habits that corrupt thinking; and show you how to become a more critical reader.





CHAPTER

1

Developing Your Thinking: An Overview

Is thinking an activity that is done automatically, without conscious effort, or one that we can direct? Is daydreaming a kind of thinking? Are feelings an effective substitute for thinking? Do exceptional thinkers experience mental blocks, lapses in concentration, and confusion the same way average thinkers do? Can thinking skill be acquired, or does one have to be born with it?

In this chapter, you will find answers to these questions and other basic facts that will enable you to use this book confidently.

Claude is a high school student. His English teacher has just asked the class to identify the theme of the short story they read for homework. When no one answers, she admonishes them, "Class, you're just not thinking. Get busy and *think*."

Claude wrinkles up his nose, furrows his brow, scratches his chin, and stares up at the ceiling. "Think, think, I've got to think. What's the theme of that story? The theme, the theme, what could be the theme?" He shifts his gaze to the right and to the left, purses his lips, then reaches down

purposefully, opens his book, and begins flipping pages as if looking for something. All the while his mind is repeating, "Think … think … theme… ."

Is Claude thinking? No. He's trying to, hoping to, but not really doing so. His mental motor is racing, but his transmission is in neutral. He's ready to go, but not going.

Let's consider another case. Agatha, a college student, is sitting in the campus cafeteria, drinking her morning coffee. To all outward appearances she is not only thinking but totally lost in thought. Here is what is taking place in her mind:

> So much work to do today … must remember to meet Jim at 6 p.m … I'll have to begin my term paper soon… That Bertha is such a slob—I wish she'd clean her part of the room sometime this semester … my hair looks so awful—if only I could fix it like Martha's, it would look neat, yet demand little attention… If winter would only end, I wouldn't be so depressed—why is my mood so dominated by the weather? … This coffee is bitter—you'd think the staff here could at least make a decent cup of coffee… I can't wait to get home to have a real meal again … wonder how much weight I've gained; perhaps jogging is the solution…

Agatha's mental behavior is much closer to thinking than Claude's. Ideas, images, and notions are drifting through her mind, and she is dutifully watching them float by. But her role is passive; she is a spectator to the activity of her mind. Thinking, as we will view in this book (and as most authorities view it), is something more than aimless daydreaming.

WHAT IS THINKING?

What, then, is thinking? To begin with, it is purposeful mental activity over which we exercise some control. *Control* is the key word. Just as sitting in the driver's seat of a car becomes driving only when we take the steering wheel in hand and control the car's movement, so our mind's movements

become thinking only when we direct them.

There are, of course, as many different purposes in thinking as there are in traveling. We may be on a business trip or a pleasant drive through the countryside with no particular destination. Similarly, we may drive in varying conditions and with varying degrees of success or efficiency. We may travel in darkness or in light, proceed slowly or quickly, take the correct turn or the wrong one, arrive at our intended destination or a different one, or find that we are hopelessly lost *en route*. Nevertheless, as long as we are steering our mind, we are thinking.

This does not mean that thinking must always be conscious. The evidence that the unconscious mind can join in purposeful mental activity is overwhelming. The most dramatic example is the fact that insights often come to us when we are no longer working on a problem but have turned away from it to other activities. (We will see a number of examples of this phenomenon in Chapter 9.)

With these important considerations in mind, we can attempt a more formal definition of thinking: *Thinking is any mental activity that helps formulate or solve a problem, make a decision, or fulfill a desire to understand. It is searching for answers, and reaching for meaning.* Numerous mental activities are included in the thinking process. Careful observation, remembering, wondering, imagining, inquiring, interpreting, evaluating, and judging are among the most important ones. Often, several of these activities work in combination, as when we solve a problem or make a decision. We may, for example, identify an idea or dilemma, then deal with it—say, by questioning, interpreting, and analyzing—and finally reach a conclusion or decision.

There have been many attempts to explain the nature of thinking. One of the most popular notions, now largely discredited, is that thinking is entirely verbal. According to this theory, we arrange words in our minds or silently whisper to ourselves when we think. Yet if this were the case, Albert Einstein would not be considered a thinker. His thinking consisted more of images than of words.[1] Contemporary authorities agree that the form a

thought takes in our minds is usually verbal, but not necessarily so. Just as we may *express* an idea in mathematical symbols or pictures, in addition to words, we may also *conceive* of it in that way.

THE IMPORTANCE OF THINKING

Successful problem solving and issue analysis require factual knowledge—that is, familiarity with the historical context of the problem or issue and an understanding of the relevant principles and concepts. But factual knowledge is something already known, whereas in the great majority of cases, solutions are unknown, brand new, and specifically formulated to fit particular problems or issues. For this reason, the possession of factual knowledge does not by itself guarantee success in problem solving. You may, in fact, be the proverbial "walking encyclopedia" and perform quite dismally. To be a successful problem solver, you will need both factual knowledge and proficiency in thinking.

To appreciate the importance of thinking proficiency, consider the various situations in which you are or will be called upon to solve problems, analyze issues, and make decisions. The choice of a major in college and the decision of whom to marry, where to live, what religion (if any) to embrace, and what political party (if any) to join are but a few of the most obvious situations. Every day brings new and difficult challenges: how to deal with difficult people, what to do when your parents can no longer care for themselves, how to be a good parent, how to sort through hyperbole and false claims in advertisements, how to manage your investments wisely, how to determine which political candidate will do the most good (or the least harm) for the country.

Skill in problem solving, issue analysis, and decision making is increasingly expected of employees. Only a generation or so ago, "scientific management" was still in vogue. In that system, executives did the thinking and other employees merely carried out their assigned tasks. Since the advent of "quality management," employers have learned to value

employees who are willing and able to contribute ideas for the improvement of the company. In recent years, this perspective has been reinforced by three developments: the knowledge explosion, the communications technology revolution, and the rise of the global economy.

Improvements in research capability have dramatically increased the information base in virtually every field, making it difficult for anyone to master even a single discipline's knowledge in its entirety. In addition, because new knowledge is not merely being added each year but *multiplied*, such mastery will be impossible before long. More important, the information base acquired in high school and college, which used to be sufficient for an entire career, will in the future become obsolete within a decade or less.

The communications technology revolution has been even more remarkable. Within less than 20 years, the personal computer was developed and hundreds of hardware and software manufacturers sprang into existence, marketing products no one could have imagined a generation earlier. Hundreds of billions of dollars flowed into upstart companies like Microsoft, Intel, Dell, and a host of "dot-coms," ending the seeming omnipotence (and complacency) of such corporate giants as IBM. For individual companies and entire industries, the result has been a loss of stability. Even successful, well-run organizations can experience a rapid change of fortune and be forced to downsize their operations and lay off workers. Individuals who possess problem-solving and decision-making skills are more flexible than others and are therefore less likely to become victims of downsizing and more likely to find satisfactory employment if they are laid off.

The development of a global economy has resulted from the satellite transmission of television programming, the opening of former Soviet bloc countries to trade, the increase in business *competition* from other countries, and the signing of a new generation of trade agreements such as the North American Free Trade Agreement (NAFTA) and the General Agreement on Tariffs and Trade (GATT). Meeting the challenges and seizing the opportunities presented by the global economy require skill in creative and

critical thinking. Employees who possess those skills will enjoy a significant advantage over those who do not.

BRAIN AND MIND AT WORK

For well over a century, researchers have deepened our understanding of human thought. We now know that thinking is not a mystical activity, unknowable and unlearnable. Thinking occurs in patterns that we can study and compare to determine their relative objectivity, validity, and effectiveness. This knowledge can be used to reinforce good thinking habits and to overcome bad ones. As James Mursell has observed, "Any notion that better thinking is intrinsically unlearnable and unteachable is nothing but a lazy fallacy, entertained only by those who have never taken the trouble to consider just how a practical job of thinking is really done."[2]

Brain research is providing new insights, notably that the structure of the brain is considerably more complex than previously imagined. The first breakthrough in understanding came when a neurosurgeon began treating patients with severe epilepsy in a new way. He severed the *corpus callosum*, the nerve fibers connecting the two hemispheres of the brain, to relieve the symptoms of the disease. The separation made it possible to study the way each hemisphere functioned. The right hemisphere, it was learned, governs nonverbal, symbolic, and intuitive responses. The left hemisphere governs the use of language, logical reasoning, analysis, and the performance of sequential tasks.

Some popularizers of this research have taken it to mean there are "leftbrained people" and "right-brained people," and a cottage industry has arisen to help people identify which they are and/or become what they are not. Most researchers regard this development as, at best, an oversimplification of the data. For example, Jerre Levy points out that none of the data "supports the idea that normal people function like split-brain patients, using only one hemisphere at a time," adding that the very structure of the brain implies profound integration of the two hemispheres, the *corpus*

callosum connecting them and facilitating their arousal.[3]

William H. Calvin says that researchers who specialize in split-brain research (as he does) tend to regard the popularization "with something of the wariness which the astronomers reserve for astrology." He cites the "behavior and mental processes greater than and different from each region's contribution" as evidence of right/left integration.[4] Others underscore the fact that left-brain/right-brain research has been conducted with severely injured or surgically altered brains and not normal ones. In his Nobel lecture on the subject, for instance, Roger W. Sperry noted that "in the normal state the two hemispheres appear to work closely together as a unit, rather than one being turned on while the other idles."[5]

The extravagance of popularizers notwithstanding, neurophysiological research seems to parallel cognitive psychologists' earlier realization that the mind has two distinct phases—the *production* phase and the *judgment* phase—that complement each other during problem solving and decision making. Proficiency in thinking requires the mastery of all approaches appropriate to each phase and skill in moving back and forth between them. Let's examine each phase a little more closely, noting how good thinkers use each effectively.

The Production Phase

In this phase, which is most closely associated with creative thinking, the mind produces various conceptions of the problem or issue, various ways of dealing with it, and possible solutions or responses to it. Good thinkers produce both more ideas and better ideas than poor thinkers. They become more adept in using a variety of invention techniques, enabling them to discover ideas. More specifically, good thinkers tend to see the problem from many perspectives before choosing any one, to consider many different investigative approaches, and to produce many ideas before turning to judgment. In addition, they are more willing to take intellectual risks, to be adventurous and consider unusual ideas, and to use their imaginations.

In contrast, poor thinkers tend to see the problem from a limited

number of perspectives (often just a single narrow one), to take the first approach that occurs to them, to judge each idea immediately, and to settle for only a few ideas. Moreover, they are overly cautious in their thinking, unconsciously making their ideas conform to the common, the familiar, and the expected.

The Judgment Phase

In this phase, which is most closely associated with critical thinking, the mind examines and evaluates what it has produced, makes its judgments, and, where appropriate, adds refinements. Good thinkers handle this phase with care. They test their first impressions, make important distinctions, and base their conclusions on evidence rather than their own feelings. Sensitive to their own limitations and predispositions, they double-check the logic of their thinking and the workability of their solutions, identifying imperfections and complications, anticipating negative responses, and generally refining their ideas.

In contrast, poor thinkers judge too quickly and uncritically, ignoring the need for evidence and letting their feelings shape their conclusions. Blind to their limitations and predispositions, poor thinkers trust their judgment implicitly, ignoring the possibility of flaws in their thinking.

GOOD THINKING IS A HABIT

It is frequently said that good thinkers are born, not made. Although there is an element of truth in this, the idea is essentially false. Some people have more talent for thinking than others, and some learn more quickly. As a result, over the years one person may develop thinking ability to a greater extent than another. Nevertheless, effective thinking is mostly a matter of habit. Research proves that the qualities of mind required to think well, the qualities we noted in our discussion of the production and judgment phases, can be mastered by anyone. It even proves that originality can be learned. Most important, it proves that you don't need a high IQ to be a good

thinker.[6] E. Paul Torrance has shown that fully *70 percent* of all creative people score below 135 on IQ tests.[7]

The difficulty of improving your thinking depends on the habits and attitudes you have. Chances are you've had little or no direct training in the art of thinking before now, so you're bound to have acquired some bad habits and attitudes. This book will supply principles and techniques for you to master, and your instructor will supply the guidance. You must supply the most important ingredients: the desire to improve and the willingness to apply what you learn.

If at first the task of changing your habits and attitudes seems impossible, remember that a lot of other tasks seemed so, yet you mastered them: walking, for example, and eating without drooling food out of your mouth onto your high chair, swimming, hitting a baseball, and driving a car. The unfamiliar often seems daunting.

THE STRUCTURE OF THIS BOOK

Becoming familiar with the contents of this book will help you meet its challenge more confidently. The purpose of the book is to *teach you how to think* more creatively and critically. That may seem obvious enough, but it's easily confused with *telling you what to think.* The difference is this: Telling you what to think makes you dependent on other people's ideas; teaching you how to think liberates you from dependency on others' ideas and helps you form sound and sensible ideas of your own. You will find this book introducing you to, or deepening your acquaintance with, a host of problems and controversial issues. It will guide the way you consider them—that is, the strategies you apply and the manner in which you apply them. But you will not find this book making up your mind for you. That task is yours alone.

The Art of Thinking is divided into four parts, each with several chapters. "Be Aware" will help you to broaden your outlook and become a critical reader. "Be Creative" and "Be Critical" will demonstrate ways to

produce and evaluate ideas more effectively. “Communicate Your Ideas” will help you present your ideas more persuasively to other people.

Don’t feel bound by the sequence of the chapters. If you haven’t examined the table of contents closely, take a moment and do so now. Whenever you are interested in learning about a topic that appears in a later chapter, read ahead. For example, if you lack confidence in your writing, consult Chapters 14 and 15 now, and apply the advice presented there.

GETTING THE MOST FROM YOUR EFFORTS

At one time it was thought that the same occasions, places, and conditions of work are right for everyone. Today we know better. No two people are exactly alike in their needs. What works for one will not necessarily work for another. Mozart and Beethoven, for example, were both great composers, yet they worked very differently. Mozart thought out entire symphonies and scenes from operas in his head, without benefit of notes. Later he transcribed them onto paper. Beethoven, on the other hand, wrote fragmentary notes in notebooks, often reworking and polishing them for years. His first ideas were so clumsy that scholars marvel at how he could have developed such great music from them.[8]

Imagine what would have happened if Mozart had followed Beethoven’s approach, and vice versa. Surely Mozart’s output would have been diminished. Given the unsuitability of another approach to his temperament, it might even have been choked off altogether. And Beethoven would have given the world trash.

It is not unreasonable to believe that there are thousands, perhaps millions, of people in the world today who have not begun to glimpse, let alone develop, their potential for achievement *simply because they are using work habits borrowed from someone else or fallen into by chance or force of circumstance.* Your best approach is not to assume that your work habits fit your needs but to experiment a little and find out what really works best for you. What you find may not make a dramatic difference, but even modest

improvements in proficiency will continue to pay dividends over the years.

Consider Time. An hour of prime time will often get better results than two or three hours of the wrong time. When are you in the habit of doing your most important schoolwork? Early in the morning? Late at night? At midday? For the next week or two, try different times and note the effect on your work.

Consider Place. You can observe students studying in strange places: dormitory lounges, crowded cafeterias filled with people clanging and chattering, and snack bars (often next to a blaring jukebox). You've probably studied in some of these places, too, at one time or another, and for no other reason than that you happened to be there at the time an assignment had to be done. But that is not a good reason. If you need quiet to work efficiently, you should seek a quiet place—if not a dormitory room, then an empty classroom, a park bench, or a parked car. Of course, if you find that a busy place actually stimulates your thinking, by all means work there.

Consider Conditions. Thinkers throughout history have occasionally needed some strange stimuli. Poet Friedrich von Schiller needed a desk filled with rotten apples. Novelist Marcel Proust needed a cork-lined workroom. Dr. Samuel Johnson demanded a purring cat, an orange peel, and a cup of tea. But you'd do well not to become dependent on gimmicks or bizarre conditions, if for no other reason than that they're hard to maintain. You're better off trying such approaches as taking a walk or a brisk jog across campus before beginning work or playing music while you work.

A word of caution is in order here. Don't confuse what you like with what works best for you. You may, for example, enjoy watching TV or listening to the stereo blare. But these might hinder more than help your efforts to think or write. Similarly, alcohol and drugs may make you feel good (temporarily, at least), but they are definitely counterproductive. Although the notion persists that such substances enhance creativity, researchers are almost unanimous in concluding that they have the reverse effect: They cloud and numb the mind.

USING FEELINGS TO ADVANTAGE

Feelings were greatly emphasized in the 1960s and early 1970s. "Do your own thing," "If it feels good, do it," and "Get in touch with your feelings" were the catchphrases of the time. In light of the neglect of feelings in previous decades, that emphasis was understandable, but it often took the form of a rejection of thought. The proper relationship of thoughts and feelings is harmonious, not mutually exclusive.

The contribution feelings can make to problem solving and decision making is immeasurable. Not only do feelings often yield the hunches, impressions, and intuitions that help to produce the answers we seek but they also, more importantly, provide the enthusiasm to undertake difficult challenges and persevere in them. Albert Einstein spent seven years working out his theory of relativity; Thomas Edison spent 13 years perfecting the phonograph; Copernicus devoted more than 30 years to proving that the sun is the center of the solar system. And millions of men and women labor tirelessly to realize the most elusive of goals: victory over disease, poverty, ignorance, and inhumanity. Without deep and abiding feelings about the importance of their work, such people could not sustain their efforts.

The popular notion that only artists feel, whereas scientists and other practical people approach problems in computer-like fashion, has long been discredited by scholars.[9] Albert Einstein himself affirmed the role of intuition in science. "There is no logical way to the discovery of [complex scientific laws]," he explained. "There is only the way of intuition, which is helped by a feeling for the order lying behind the appearance."[10] And Arthur Koestler, who studied the lives of innumerable great scientists, observed, "In the popular imagination [they] appear as sober ice-cold logicians, electronic brains mounted on dry sticks. But if one were shown an anthology of typical extracts from their letters and autobiographies with no names mentioned, and then asked to guess their profession, the likeliest answer would be: a bunch of poets or musicians of a rather romantically naive kind."[11]

Of course, not all feelings are good. Some direct us in ways good

sense would not have us go. From time to time, even the mildest individuals may feel like responding violently to people they don't like, experience a strong urge for sexual contact with those who don't share the sentiment, or be overtaken by the impulse to steal something. For this reason, wisdom demands that we refuse to surrender ourselves to our feelings but instead examine them dispassionately and separate the worthy from the unworthy.

As you proceed through this course, try to become more aware of your feelings. Accept the challenge of finding your best and noblest feelings and allowing them to motivate you.

LEARNING TO CONCENTRATE

Many people have the notion that concentration means a constant, unbroken line of thought. They imagine that scientists, writers, inventors, and philosophers start from point A and move smoothly to point B without distraction. That notion is incorrect. Concentration is not so much something done to *prevent* distraction and interruption as it is something done to *overcome* distraction and interruption when they occur. To concentrate means to return our attention to our purpose or problem whenever it wanders.[12]

Concentrating is much like steering a car. When experienced drivers steer, they don't lock their hands on the wheel in one fixed position; they turn it slightly to the right and to the left to keep the car on course. Even on a straight road, the car stays on course only a small percentage of the time. Drivers must make constant adjustments, many of them almost imperceptible. Experienced drivers are not more talented than inexperienced ones; they have simply learned to make subtle corrections at the right time.

Similarly, the secret of efficient thinkers is not that they experience fewer distractions, but that they have learned to deal with them more quickly and more effectively than inefficient thinkers do. There is no magic in what effective thinkers do. You can learn it as they did, by practicing.

COPING WITH FRUSTRATION

All thinkers have their share of frustration: confusion, mental blocks, false starts, and failures happen to everyone. Good thinkers, however, have learned strategies for dealing with their frustration, whereas poor thinkers merely lament it—thus allowing themselves to be defeated by it. One important study of students' problem-solving processes revealed some interesting differences between good and poor problem solvers. Among them were the following:[13]

Good Problem Solvers	Poor Problem Solvers
Read a problem and decide how to begin attacking it.	Cannot settle on a way to begin.
Bring their knowledge to bear on a problem.	Convince themselves they lack sufficient knowledge (even when that is not the case).
Go about solving a problem systematically—for example, trying to simplify it, puzzling out key terms, or breaking the problem into subproblems.	Plunge in, jumping haphazardly from one part of the problem to another, trying to justify first impressions instead of testing them.
Tend to trust their reasoning and to have confidence in themselves.	Tend to distrust their reasoning and to lack confidence in themselves.
Maintain a critical attitude throughout the problem-solving process.	Lack a critical attitude and take too much for granted.

MAKING DISCUSSION MEANINGFUL[14]

At its best, discussion deepens understanding and promotes problem solving and decision making. At its worst, it frays nerves, creates animosity, and leaves important issues unresolved. Unfortunately, the most prominent models for discussion in contemporary culture—radio and TV talk shows—

often produce the latter effects.

Many hosts demand that their guests answer complex questions with simple "yes" or "no" answers. If the guests respond that way, they are attacked for oversimplifying. If, instead, they try to offer a balanced answer, the host shouts, "You're not answering the question," and proceeds to answer it himself. Guests who agree with the host are treated warmly; others are dismissed as ignorant or dishonest. As often as not, when two guests are debating, each takes a turn interrupting while the other shouts, "Let me finish." Neither shows any desire to learn from the other. Typically, as the show draws to a close, the host thanks the participants for a "vigorous debate" and promises the audience more of the same next time.

Here are some simple guidelines for ensuring that the discussions you engage in—in the classroom, on the job, or at home—are more civil, meaningful, and productive than what you see on TV. By following these guidelines, you will set a good example for the people around you.

Whenever Possible, Prepare in Advance

Not every discussion can be prepared for in advance, but many can. An agenda is usually circulated several days before a business or committee meeting. And in college courses, the assignment schedule provides a reliable indication of what will be discussed in class on a given day. Use this advance information to prepare for discussion. Begin by reflecting on what you already know about the topic. Then decide how you can expand your knowledge and devote some time to doing so. (Fifteen or twenty minutes of focused searching on the Internet can produce a significant amount of information on almost any subject.) Finally, try to anticipate the different points of view that might be expressed in the discussion, and consider the relative merits of each. Keep your conclusions very tentative at this point so that you will be open to the facts and interpretations others will present.

Set Reasonable Expectations

Have you ever left a discussion disappointed that others hadn't abandoned

their views and embraced yours? Have you ever felt offended when someone disagreed with you or asked you what evidence you had to support your opinion? If the answer to either question is yes, you probably expect too much of others. People seldom change their minds easily or quickly, particularly in the case of long held convictions. And when they encounter ideas that differ from their own, they naturally want to know what evidence supports those ideas. Expect to have your ideas questioned, and be cheerful and gracious in responding.

Leave Egotism and Personal Agendas at the Door

To be productive, discussion requires an atmosphere of mutual respect and civility. Egotism produces disrespectful attitudes toward others—notably, "I'm more important than other people," "My ideas are better than anyone else's," and "Rules don't apply to me." Personal agendas, such as dislike for another participant or excessive zeal for a point of view, can lead to personal attacks and unwillingness to listen to others' views.

Contribute but Don't Dominate

If you are the kind of person who loves to talk and has a lot to say, you probably contribute more to discussions than other participants. On the other hand, if you are more reserved, you may seldom say anything. There is nothing wrong with being either kind of person. However, discussions tend to be most productive when everyone contributes ideas. For this to happen, loquacious people need to exercise a little restraint, and more reserved people need to accept responsibility for sharing their thoughts.

Avoid Distracting Speech Mannerisms

Such mannerisms include starting one sentence and then abruptly switching to another, mumbling or slurring your words, and punctuating every phrase or clause with audible pauses ("um," "ah,") or meaningless expressions ("like," "you know," "man"). These annoying mannerisms distract people from your message. To overcome them, listen to yourself when you speak.

Even better, tape your conversations with friends and family (with their permission), then play the tape back and listen to yourself. And whenever you are engaged in a discussion, aim for clarity, directness, and economy of expression.

Listen Actively

When the participants don't listen to one another, discussion becomes little more than serial monologue—each person taking a turn at speaking while the rest ignore what is being said. This can happen quite unintentionally because the mind can process ideas faster than the fastest speaker can deliver them. Your mind may get tired of waiting and wander about aimlessly like a dog off its leash. In such cases, instead of listening to what is being said, you may think about the speaker's clothing or hairstyle or look outside the window and observe what is happening there. Even when you are making a serious effort to listen, it is easy to lose focus. If the speaker's words trigger an unrelated memory, you may slip away to that earlier time and place. If the speaker says something you disagree with, you may begin framing a reply. The best way to maintain your attention is to be alert for such distractions and to resist them. Strive to enter the speaker's frame of mind and understand each sentence as it is spoken and to connect it with previous sentences. Whenever you realize your mind is wandering, drag it back to the task.

Judge Ideas Responsibly

Ideas range in quality from profound to ridiculous, helpful to harmful, and ennobling to degrading. It is therefore appropriate to pass judgment on them. However, fairness demands that you base your judgment on thoughtful consideration of the overall strengths and weaknesses of the ideas, not on your initial impressions or feelings. Be especially careful with ideas that are unfamiliar or different from your own because those are the ones you will be most inclined to deny a fair hearing.

Resist the Urge to Shout or Interrupt

No doubt you understand that shouting and interrupting are rude and disrespectful behaviors, but do you realize that in many cases they are also a sign of *intellectual insecurity*? It's true. If you really believe your ideas are sound, you will have no need to raise your voice or to silence the other person. Even if the other person resorts to such behavior, the best way to demonstrate confidence and character is by refusing to reciprocate. Make it your rule to disagree without being disagreeable.

PRELIMINARY THINKING STRATEGIES

At the end of each chapter in this book, you will find two kinds of challenges. The first kind, warm-up exercises, are intended to provide an enjoyable way for you to experiment with ideas and limber up your thinking. The second kind are applications, which invite you to apply what you learned in the particular chapter and previous chapters to real-life problems and issues.

By the time you reach the end of this book, you will have learned a variety of strategies for applying creative and critical thinking to these challenges. In the meantime, however, you will need some preliminary strategies. The remainder of this chapter will explain seven helpful ones that you can begin using immediately. Because most involve using writing in a way you may not be familiar with, we'll begin by clarifying what that way is.

Although writing is most commonly thought of as a way of expressing thoughts we have already formed, it is also an excellent tool for *discovering* and *clarifying* thoughts. You've probably had the experience of believing you have an idea clearly in mind and then finding out it is hopelessly muddled. It's a common experience. As Ernest Dimnet explains:

> Most men and women die vague about life and death, religion or morals, politics or art. Even about practical issues we are far from being clear. We imagine that other people know definitely their own minds about their

> children's education, about their own careers, or about the use they should make of their money. The notion helps us to imagine that we ourselves are only separated from decision on these important issues by the lightest curtain of uncertainty. But it is not so. Other people, like ourselves, live in perpetual vagueness. Like us they foolishly imagine they are thinking of some important subject when they are merely *thinking of thinking about it.*[15]

The solution, Dimnet suggests, is to use the technique known as *freewriting*. It consists of focusing on a problem or issue, letting your mind produce whatever associations it will, and writing down the resulting ideas, without pausing to evaluate any ideas (lest you shut off the flow prematurely). This kind of writing is not intended to be read by anyone else, so the rules of composition do not apply. Nor do you have to worry about spelling or penmanship. A variation on freewriting is *listmaking.* Because it involves single words and phrases rather than sentences, it is more efficient than freewriting, which makes it the perfect way to capture those ideas that come suddenly and leave just as quickly.

Once you have recorded your ideas, you can sort them out, refine them, and express them in a way that will be meaningful to others. Generally, that will take the form of stating what you think and why you think it, as well as providing sufficient explanation to overcome any confusion your readers might have.

Following are seven worthwhile strategies to help you meet the challenges at the end of each chapter:

1. If the exercise consists of a single statement to be analyzed, read it again carefully. Be sure you understand what it says. Ask yourself, "Does this make sense?" If you find yourself answering with a firm "yes" or "no," decide precisely what makes you respond that way. Often, that will be what you should explain to your audience.

2. If words fail you at the outset, refuse to sit and stare at the page. If you took a dead-end street by accident, you wouldn't sit in your car staring

at the dead-end sign; you'd turn the car around and try moving in another direction. Do the same with difficult challenges. One approach that works well with some problems is to use a diagram. If, for example, you were evaluating the reasoning "All dogs are animals. Fido is a dog. Therefore, Fido is an animal," you might diagram it this way:

The diagram would suggest the way to explain your analysis:

It is correct to classify dogs under the general heading *animals*. Moreover, this applies not just to some dogs but also to *all* dogs. There is no other category under which to classify dogs. Fido is correctly classified as a dog, so he must be an animal.

3. When the statement presents as fact something that is not factual, identify the error and explain how it invalidates the statement.

4. When the statement confuses two terms or ideas, identify the confusion and show its effect on the statement as a whole.

5. When the statement presents a conclusion as the only possible conclusion and other conclusions are also possible, present the other conclusions and demonstrate that they, too, are reasonable (perhaps more reasonable).

6. When the statement, or some part of it, is open to interpretation, use the *if-then* approach to analysis. Consider, for example, the statement "Everyone must die." Here's how the *if-then* approach works:

   The statement as it stands is ambiguous. *If* it is taken to mean "At present there is no known way for human beings to avoid death," *then* it is a statement of fact. But *if* it is taken to mean "There will never be a way for human beings to avoid death," *then* it is presumptuous. For, however unlikely such a development may seem, we cannot say for

certain it will never occur.

The *if-then* approach is also useful when you are uncertain of the facts. In other words, you might say, "I am uncertain of the facts in this matter, but *if* they are as stated, *then* the conclusion is sound because… *If*, however, they are not as stated, *then* the conclusion is not sound because… ."

7. If the exercise consists of a dialogue, read it several times, each time for a different purpose. First, read it to understand the discussion in its entirety. Then read each person's comments individually, noting the progression of his or her thoughts and the degree of logical consistency. Finally, read for implications and assumptions; these are ideas that are not stated directly but are nevertheless identifiable by what *is* stated directly. (The dialogue in Sample Exercise 2 contains an unstated idea.)

SAMPLE EXERCISES AND RESPONSES

Each exercise you do will have its own particular details and will therefore demand a special response. For that reason, no one formula can be given for responding to the exercises. The following sample exercises and responses, though fairly typical, are illustrations of what can be done rather than models to be slavishly imitated.

Exercise 1

The Assignment: Analyze the following statement, deciding whether it is reasonable and, if so, to what degree. Explain your thinking thoroughly.

The results of a recent national examination reveal that 75 percent of America's high school students are below average in reading ability.

The Response:

I don't know if the statement is a factual one. But I can say that it may have different meanings, depending on how the word *average* is interpreted. And the various meanings affect the reasonableness of the statement.

Below average may mean "below a score that half the high school seniors have achieved in previous years." Or it may mean "below a score now regarded as an acceptable minimum." In either of these cases, the statement is a reasonable one and could very well be factual.

But there is a more technical definition of *below average.* It may mean "below the arithmetic mean (the score derived from dividing the total scores of all high school students by the total number of high school students)." I am not sure whether it is even mathematically possible that 75 percent could fall below the mean, but I do know that it is highly unlikely. So if this is what the statement is saying, it is not very reasonable.

Exercise 2

The Assignment: Read the following dialogue carefully. Then decide whether what is stated (or implied) makes sense. Explain your reasoning thoroughly.

JOHN: Do you think the masses really have any power in the United States today?

BILL: That depends on what groups you include in "*the masses*." Would you include professional people—doctors, lawyers, teachers … ?

JOHN: *Teachers?* They don't make that much money.

The Response:

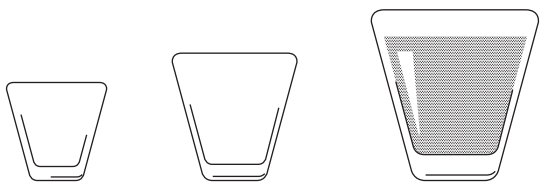
John's last comment reveals the assumption that money is the basis for determining professional status. That assumption is unwarranted. If money were the measure, a lawyer with a small practice would not be considered a professional, but a plumber with a good business would be. If an apprentice clerk in a store inherited a large sum of money from his aunt, he would be a nonprofessional one day and a professional the next. No, a professional person is one engaged in one of the *professions:* those fields requiring a liberal arts or science education and some form of subsequent specialization. The amount of money a person earns is beside the point.

Exercise 3

The Assignment: Rowena has three unmarked glasses of different sizes: 3 ounces, 5 ounces, and 8 ounces. The largest glass is full. What can Rowena do to get 4 ounces of liquid into each of the smaller two glasses?

The Response:

After some initial difficulty trying to work the problem out in your head, you create a visual aid by drawing three glasses on a sheet of paper, as shown here. (You could have instead gotten three actual glasses of appropriate sizes.)



What next? You would pour some liquid into one of the empty glasses, actually or in your imagination. Which glass? It makes no difference. You would just get busy *doing.* If one approach failed, you'd try another.

Try this approach and see if you can solve this challenge by yourself. (You'll find the answer on page 339.)

Warm–Up Exercises

As you do the following warm-up exercises and those in subsequent chapters, keep in mind that they serve a similar purpose to stretching before an athletic event. In other words, they *prepare* you for the event but they are not themselves the event, so your ego will not be on the line when you do them. (Your instructor will probably not measure your performance on them either.) So have fun with them and be as daring as you like in answering

them. If some of them seem too silly or frivolous to have any bearing on the development of your thinking skill, remember that Albert Einstein once remarked that playfulness is "the essential feature in productive thought."

1.1 Decide whether the reasoning that underlies the following statement is sound or unsound. Write a paragraph or two stating and explaining your judgment. (If you have difficulty doing this assignment, consult the suggestions on pages 21–23.)

There's a possibility that the price of postage stamps will be raised again soon. I'll stock up on them now to avoid paying the higher price.

1.2 Follow the directions for Exercise 1.1.

The sun has always risen in the past; therefore, it will rise tomorrow.

1.3 A young child is convinced that the time between two o'clock and three o'clock is longer than the time between one o'clock and two o'clock. Compose a brief explanation, with or without a diagram, that helps the child understand that the time isn't longer.

Applications

1.1 For each of the following statements, write a brief response (one or two sentences) stating your position and explaining why you hold it.

a. Violence is better than reason in dealing with dangerous situations.
b. Only the good die young.
c. It's human nature to be greedy.
d. Capital punishment is a deterrent to crime.
e. If people are unemployed, they must be lazy. There's a job for everyone who really wants to work.

f. Everyone has a value system of some kind.
g. We know ourselves better than others know us.
h. An unborn fetus is a human being.
i. If guns are outlawed, only outlaws will have guns.
j. Truth is an intensely personal matter: What is true for me is not necessarily true for you.
k. Winning isn't everything—it's the *only* thing.
l. Challenging another's opinion is a sign of intolerance.
m. Atheists are generally moral people.
n. Censorship is evil.
o. Black people are better athletes than white people.
p. The oil companies manipulate gasoline prices.
q. Getting your feet wet can cause a cold.
r. Homosexuals are as likely to control their sexual urges as are heterosexuals.

1.2 Read the following dialogue carefully, looking for flaws in thinking. If you find a flaw, identify it and explain what is wrong with it in sufficient detail to persuade someone who has read the passage but sees no flaw. If you find two or more flaws, decide which is most serious and limit your discussion to that one. If you find nothing wrong with the thinking in the dialogue, explain why you agree with what is said. (If you have difficulty doing this assignment, consult suggestion 7 on page 22.)

SALLY: Norma, have you begun your composition yet, the one that's due tomorrow?

NORMA: No, I haven't. But I have done quite a bit of research on the topic. I have a few very interesting facts I plan to refer to. Have you done any reading?

SALLY: Not me. I want to do my own thing in my compositions—you know, be original.

NORMA: Really? Maybe I'd better not use those facts. They could work against me, I guess.

1.3 Follow the directions for Application 1.2.

HOMER: Excuse me, Professor Collins, may I speak to you for a minute?

PROF.C.: Sure, Homer. What can I do for you?

HOMER: It's about the test we had last week. You gave me a 40 on it.

PROF.C.: That's not a very good grade. Had you read all three chapters carefully?

HOMER: *Carefully?* I read each one four times, underlined every important detail, and then studied them for about 10 hours for three nights before the test. I took No-Doz and stayed up until 4:30 a.m. the night before the test.

PROF.C.: I see. That would surely seem to be more than adequate preparation. What do you think went wrong?

HOMER: I think the test was unfair… I mean, it's not… I know you wouldn't make a test unfair on purpose. I think you're a good teacher and all. Sociology is your field and I'm just an amateur, but after all that trying, I wouldn't have got a 40 if the test were fair.

1.4 Follow the directions for Application 1.2.

LILLIAN: Do you think parents should be told when their teenage daughters are given abortion counseling?

ROY: Absolutely. Parents are responsible for their children until they become of age. They have a right to be told.

LILLIAN: I'm not as sure as you. I can see how not telling them is a violation of their rights as parents, and the family has been weakened enough today without its being weakened further. But on the other hand, teenage girls are not just objects. They're people, and therefore, they have rights, such as the right to determine how their bodies will be used. And many times they can't

talk to their parents about sex.

ROY: Nonsense. Parents care about their kids. They have their interests at heart more than anyone else, particularly some money-grabbing doctor or abortion-happy feminist. If kids really want to talk to their parents, there's nothing stopping them—except the possibility that they don't want to hear what their parents will say.

LILLIAN: Another thing bothers me, too. Why does the issue always focus on teenage girls rather than teenage boys?

ROY: Check with your local anatomist.

1.5 Follow the directions for Application 1.2.

GUY: Want to know what makes me sick? The tolerance our society has for transsexuals. I can't think of anything more disgusting than a person changing sexes to act out homosexual fantasies or to get more sexual satisfaction.

DARRELL: You obviously don't know much about transsexualism.

GUY: Don't tell me you excuse their perversion, too?

DARRELL: There's nothing to excuse. And you're mistaken in calling it a perversion. It's not.

GUY: What else can it be but a perversion? A man decides to be a woman, or vice versa. It's a mockery of nature. We are what we're born to be, and it's our responsibility to accept that. It ought to be against the law to tamper with nature the way they do.

1.6 The following passage is an excerpt from a student's letter home. Read it carefully. Then decide whether its reasoning is sound or unsound. State and explain your judgment in a paragraph or two, including whatever supporting material you believe will help persuade your reader.

The one thing that really bugs me about my schedule this term is that required course, "Introduction to Literature." Some students may not know what their future career is. I do. It's to help you, Dad, with the business, and someday to take it over. If we sold books I could see the value of such a course. But literature surely isn't going to make me a better furniture store manager.

1.7 Some psychologists believe that when a teenager runs away from home, there must be something wrong with the home. Do you agree? Explain your view, taking care to anticipate and respond to possible objections to it.

1.8 Multitasking, doing two or more things at the same time, is often recommended as a way to become more efficient. But then we see Internet videos of people walking into walls, ponds, and off subway platforms while texting or talking on their cell phones and drivers whose multitasking causes accidents. So the question arises: Is multitasking sometimes a good idea and sometimes not? Explain, giving specific examples. (Research tip: Rebecca Clay, Russell Poldrack, and Tamara Waters-Wheeler have done some interesting studies on the issue.)

1.9 Are people by nature good? The question is an ancient one that has fascinated philosophers, scientists, and most recently, social scientists. Traditional religious believers, notably Jews and Christians, answer "no," claiming that people have a natural predisposition, or at least a vulnerability, to evil and therefore sometimes choose to behave badly. Secular humanists and humanistic psychologists tend to take the opposite view, claiming that people are born good and that any bad behavior they may engage in is attributable to social influences and conditions. (This view is borrowed from Romanticism, particularly from the ideas of Jean Jacques Rousseau.) Examine this issue, consulting both your own experience and observation and the views expressed by both sides of the issue. Then explain your conclusion.