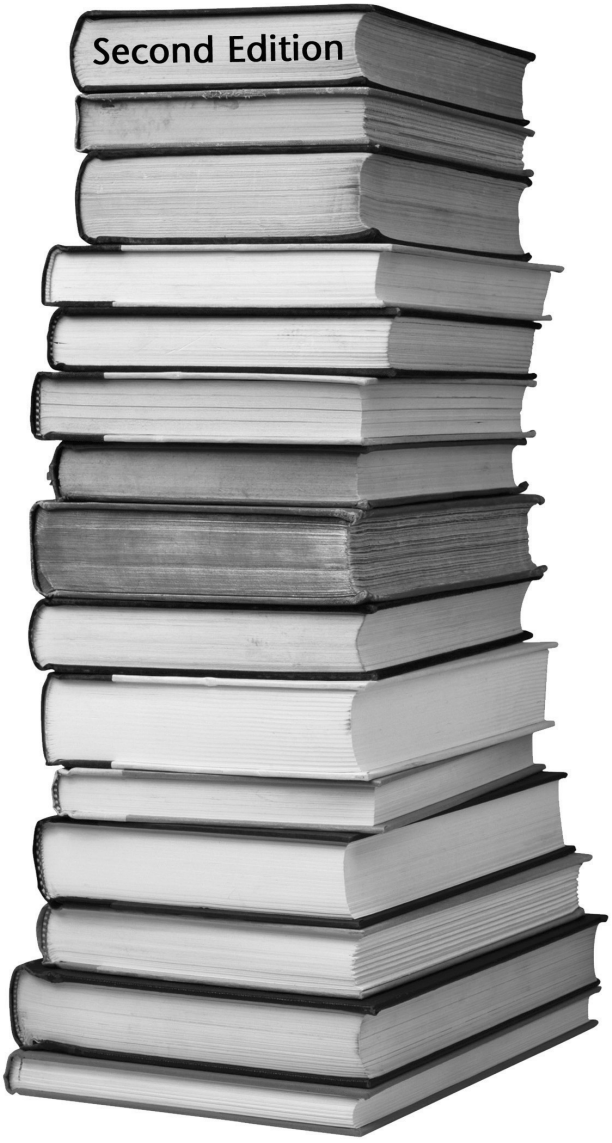
WALCH PUBLISHING

Critical Thinking
Readings in Nonfiction

Middle School



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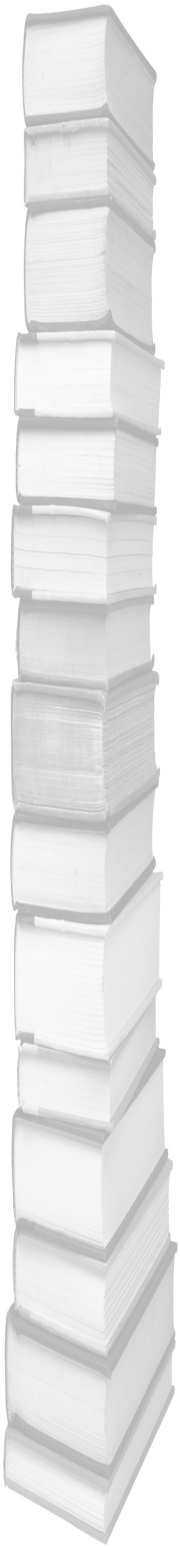


To the Teacher

Ever since the days of Socrates and Aristotle, teachers have cherished the hope that they can somehow unravel the mysteries of rational thought and help students to cultivate their inherent powers of observation, deliberation, and reflection. The search for a basic understanding of cognitive functions, however, has been frustrating. Even today, in the twenty-first century, scientists hold widely varying views on how human thought processes are triggered and how the brain controls and facilitates the flow of information.

George Johnson, a science editor for the *New York Times,* has described current investigations into human memory and reasoning in his book *In the Palaces of Memory: How We Build the Worlds Inside Our Heads* (Knopf, 1991). It is evident from Johnson's comprehensive review as well as other research studies that the facts are not all in regarding how the mind stores and retrieves data.

Why Thinking Skills Are Important

Despite our limited knowledge of how humans process information, we can ill afford to neglect the teaching of thinking skills. There are at least four compelling reasons for us to take this task seriously:

1. Every child can benefit from this type of instruction. No child is devoid of critical-thinking competencies, and no child has developed these skills so fully that there isn't some area in his or her life in which hazy, inconsistent thinking still dominates.
2. Self-interest dictates much of human behavior. We have a penchant for using our cognitive and affective processes to justify selfish motives and to undermine opposing interpretations of events. Critical thinking can help us learn to see merit in competing points of view and consider more fully the welfare of others.
3. People in all age groups have a natural disinclination to recognize the degree to which they have failed to develop critical-thinking competencies. They will readily admit that they cannot play the piano or repair a TV, for these limitations are self-evident. However, these same people tend to view critical thinking, like talking or walking, as a competency we all use at about the same level.
4. Modern personal, community, and world problems are so complex that they demand our very best thinking. Today we face a bewildering variety of political, social, and economic challenges. We must have an intellectually alert citizenry to address these perplexing, often overwhelming, dilemmas.

Selecting Materials and Strategies

There are, of course, a large number of critical-thinking tests from which to choose. The *Watson-Glaser* and the *Cornell Critical Thinking Test* are probably the best known. The former emphasizes inference, assumptions, deduction, interpretation, and evaluation of arguments; the latter focuses on hypotheses, deduction, reliability of authorities, assumptions, and relevance. There is also a wide variety of thinking-skills programs. These include *Structure of the Intellect* (Mary Meeker), *Instrumental Enrichment* (Rueven Feuerstein), *Philosophy for Children* (Matthew Lipman), *Chicago Mastery Learning* (Beau Fly Jones), and *Strategic Reasoning* (John Glade). These programs serve somewhat different purposes and widely diverse age groups; however, they all tend to emphasize the direct teaching of cognitive skills.

This book focuses on the direct teaching of skills in seven areas:

1. Judging the Relevance of Information for Specific Purposes
2. Distinguishing Among Facts, Assumptions, and Values
3. Understanding How Conditions or Events in a Story or Report Relate to Each Other
4. Recognizing Cause-Effect Relationships
5. Understanding the Rules of Rational Thinking
6. Identifying Persuasive Techniques
7. Recognizing the Writer's Assumptions

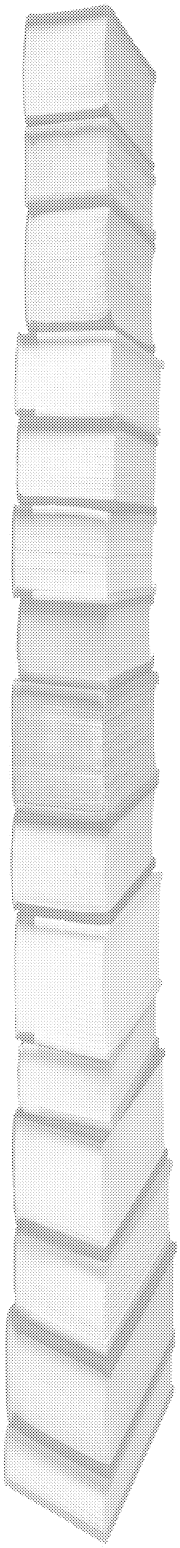
Open-ended, interactive Follow-up Activities have been added for each of these seven areas.

These activities appear in this Teacher's Guide at the end of the answer key for each section.

No program of critical-thinking and reasoning competencies can address more than a fraction of the cognitive skills needed for academic success and daily problem solving. The preceding list, however, represents a good mix of basic competencies that are relevant to a wide variety of common problematic situations. We cannot approach even the simplest task without first judging the relevance of information. We cannot read a newspaper intelligently without separating facts from values and understanding how the events in the news stories relate to each other. We can hardly get to first base in any area of science without first understanding cause-effect relationships and recognizing how fallacies in thinking can rob us of our objectivity. We cannot participate intelligently in political elections or respond to advertising without understanding something about persuasive techniques and writers' assumptions.

This book cannot make reflective thinkers out of students who are just beginning to test the boundaries of rational thought, but the stories and problematic situations it offers can serve as springboards to interesting discussions and help students recognize and cultivate their inherent powers of intellectual inquiry.

The authors would like to thank Dana Slayback and Jill Rager for their work on question formats in this book.

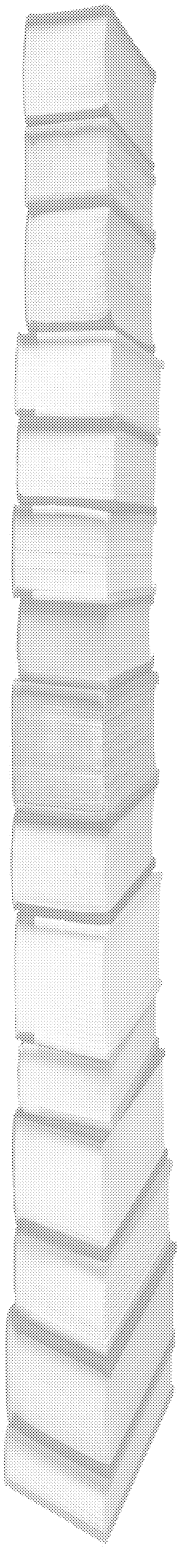


I.

Getting to the Heart of the Matter:

Judging the Relevance of Information for Specific Purposes

Introduction



When you judge the *relevance* of information, you try to decide whether specific facts or knowledge will be helpful in solving a problem. Let's assume, for example, that the heat has been turned off in your neighbor's home, and you are trying to get into the house to rescue your neighbor's parakeet. A little girl tells you that she knows where the key to the back door is kept. This is *relevant* information because it helps you solve the problem. If, on the other hand, the little girl tells you that the parakeet's name is Fluff, this is *not relevant* information because it does not help you rescue the bird.

If your brother is trying to earn money, and the man next door tells you that the car wash is employing young people, this is *relevant* information. Even if your brother applies for the job and doesn't get it, the information is still *relevant* because it might have helped him with his problem—earning money. *Relevant* information doesn't automatically solve the problem, but it is clearly related to finding a solution.

Read each of the situations listed below and decide whether the information provided is *relevant* to the solution of the problem. Write YES in the blank if it is *relevant* or NO if it is *not relevant.*

_____ 1. Chuck Thompson is trying to build a model of a castle on a large table in his basement. Jerry, his best friend, offers to show Chuck pictures of knights that he has collected. Is the pictorial information Jerry offers *relevant?*

_____ 2. Andy Chang is making posters for a Fourth of July celebration. Kim Mandarin offers to show Andy how to write the posters in Chinese. Is the information Kim offers *relevant* information?

_____ 3. Ralph Rigley is trying to patch his football before his friends come to practice. They can't use it because it is too soft. Jimmy Black offers to bring his football to the practice so the boys won't be disappointed. Is Jimmy's offer *relevant* to the solution of the problem?

_____ 4. Randy Jacobs broke his finger and can't play basketball. His little cousin next door offers to show Randy how he can revive a person who has stopped breathing. Is the information offered by his cousin *relevant*?

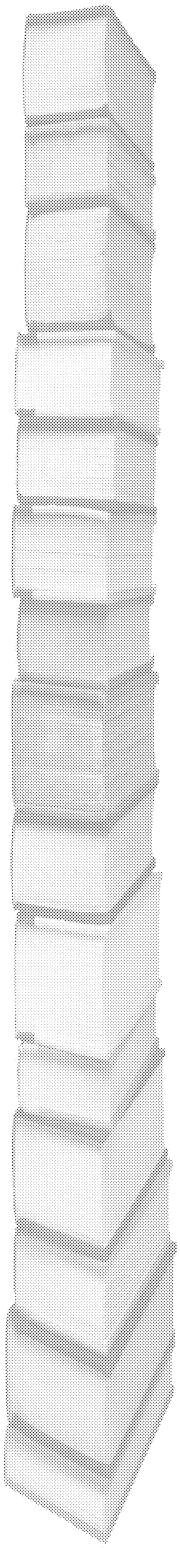
_____ 5. You are trying to buy a small TV set for your sister for her birthday, and you don't have much money. Your mother gives you an advertisement from an electronic-equipment store that is offering all kinds of items at reduced cost. Is the information your mother offers *relevant*?

_____ 6. Your aunt is trying to find a safe place to teach swimming and aquatic skills. Her husband mentions that Lake Omega is listed as one of the most beautiful bodies of water in the region. Is the information her husband offers *relevant*?

_____ 7. Art Thompson is looking for something to do after school on Wednesdays. Tom Radcliffe tells him that the navy is looking for new recruits. Is the information Tom offers *relevant*?

In the following exercises, you will be asked a series of questions related to a short article. You must determine which information in the article is relevant to each question, and which information is not relevant.

The Statue of Liberty



In 1865, a writer, Edouard de Laboulaye, and a sculptor, Frederic Bartholdi, met at a banquet near Versailles (ver sī′), France. They discussed the possibility of having the French make a statue to present to the American people on the 100th birthday of American independence, if the United States would provide the statue's pedestal.

Nothing was settled then, but in 1871, Bartholdi made a trip to the United States. He presented letters of introduction to many important people, including President Grant, leading industrialists, literary figures, and religious leaders in his effort to persuade them to support his idea for a united French-American effort in this project. He noticed that Bedloe's Island, a 12-acre tract southwest of the tip of Manhattan, would be an excellent place for the proposed statue. Unfortunately, Bartholdi received word from Washington that the French would have to take the first step in beginning the structure.

Although Bartholdi's plans were delayed by this decision, his enthusiasm was not dampened. Bartholdi and de Laboulaye worked in France for the next five years gaining support for their idea and planning the work. The Statue of Liberty was to be 152 feet high and weigh 225 tons. Her robes were to be fashioned from flowing sheets of copper.

The two men raised $400,000 in France. On May 6, 1876, Bartholdi left Paris with a French delegation to attend the Philadelphia Centennial Exhibition. The Statue of Liberty's torch arm was shown at the centennial celebration. Bartholdi and his statue gained much attention in American newspapers and magazines. Bartholdi returned to France and continued work on the statue. Many fund-raisers in France kept the project moving.

The United States' progress for the statue was not as successful, however. In this country, the publisher Joseph Pulitzer headed a drive to fund the pedestal. Pulitzer used editorials in his newspaper to persuade Americans, especially rich ones, to financially support the building of a pedestal. He emphasized that refusing to support the project would be refusing a gift of sentiment and generosity from a friendly nation. Pulitzer also announced that any donor's name, rich or poor, would be printed on the pedestal as a public recognition. He eventually collected $270,000.

In 1884, the statue's interior and exterior were taken apart piece by piece and packed into 200 mammoth crates. In May 1885, the Statue of Liberty sailed to America aboard the ship *Isere*.

When President Cleveland presided over the inauguration of the statue on October 28, 1886, the famous verse welcoming immigrants to our country was not yet in place. It was finally added in 1905.

In 1976, the Statue of Liberty was given a complete overhaul for the 200th anniversary of America's independence. Fittingly, French workers helped in making the Statue of Liberty almost new once again.

Read each question. Then circle the letter of the best answer to each question.

1. On his first trip to the United States, Bartholdi presented his idea to many influential people. Suppose you had to choose the people with whom Bartholdi should speak. What information would be LEAST important in your decision?

   a. Information concerning the accomplishments of the person

   b. Information concerning the popularity of this person within the country

   c. Information concerning the authority this person has in making decisions that could affect the project

   d. Information concerning the number of American people this person can influence

2. You must decide what part of the statue should be displayed at the Philadelphia Centennial Exhibition. This exhibition will be an opportunity for the statue to gain publicity, and you want to select a part that will remain in the minds of those who see it. What information would be MOST important to consider?

   a. Information concerning the cost of shipping the part to the exhibition

   b. Information concerning the eye appeal of the part you will send

   c. Information concerning the materials needed to build the part

3. Joseph Pulitzer's initial campaign to raise funds for the Statue of Liberty's pedestal was not successful, but as his newspaper grew, he decided to try again. He published more articles informing people of the pedestal's progress and the need for funding. Which of the following information would have been LEAST relevant to Pulitzer's decision to try again?

   a. Because of an ultimatum stating that the pedestal would be built in another city if funds were not raised, people's interest in the project was renewed.

   b. Pulitzer's newspaper had gained many more readers since its coverage of the presidential election.

   c. The newspaper was two pages longer than it had been during the first fund-raising attempt.

4. You are a reader of Joseph Pulitzer's newspaper. When Pulitzer attempted to raise money for the pedestal the first time, you gave money. You regretted it when politicians began talking about moving the statue to another city. What information would NOT be helpful in convincing you to donate the second time?

   a. Information published about the people who had donated money both times

   b. Information published about the continuing construction of the pedestal because of new funds being brought in by Pulitzer's campaign

   c. Information published about the increased cost of building the pedestal

   d. Information suggesting that the project might not be supported by the French people

5. Bartholdi decided that Bedloe's Island would be an excellent site for the statue he wanted to build. What information do you think would have been MOST relevant to Bartholdi's decision?

   a. If placed on Bedloe's Island, the spectacular statue would serve as the first glimpse of America for many immigrants and visitors.

   b. The island would be hard to get to from New York City.

   c. The large population of New York City would easily be able to fund a pedestal for the statue.

6. You are a citizen of France. You must decide whether to support the idea of building the statue. Which of the following facts would NOT be helpful in persuading you to support the idea?

   a. The fact that the French have a keen appreciation for artistic work

   b. The fact that the Americans are not taking steps to prepare a pedestal for the work

   c. The fact that Bartholdi is a well-known, experienced sculptor

7. You are a member of a committee in France that must decide whether to support the Statue of Liberty project. Bartholdi appears before your committee to answer questions about the project. Which of the following questions is MOST relevant to the situation?

   a. What materials will be needed to build this statue?

   b. Will the Americans present us with a statue in return?

   c. How many French people live in America?

8. If you wanted to learn about building a statue, what kind of experience would be LEAST beneficial to you?

   a. Visiting the Statue of Liberty and walking all the way to the top

   b. Making miniature statues out of clay and other materials in an art class

   c. Reading a book about how Bartholdi convinced the French people to support his idea

9. The Statue of Liberty is enormous—it has an 8-foot index finger, a book 2 feet thick, and an arm 42 feet long! If you wanted to get a better understanding of the statue's size, but couldn't actually visit the statue, which experience would be MOST helpful?

   a. Studying pictures of the statue from many angles and viewpoints

   b. Going outside and measuring out the length of the finger, the thickness of the book, and the length of the arm

   c. Finding out the rest of the dimensions of the statue, such as the length of the nose, the waist size, and the total height of the statue

10. Joseph Pulitzer printed the names of all individuals who donated to the pedestal project regardless of the amount they gave. Many poor and common people gave small amounts to support the project, but many of the rich refused to donate. If you were preparing the list of donors for him, what information would be MOST relevant?

    a. Information about the amounts of money given by each person

    b. Information concerning where those who donated lived

    c. The correct spelling of each contributor's name

    d. The names of wealthy people who did not give