

Five Steps to Better Critical Thinking, Problem Solving, and Decision Making Skills

To make the best decisions and to become valuable knowledge workers, you can follow this simple five-step plan:

1. **Identify and clarify the problem.** Your first task is recognizing that a problem exists. Some problems are big and unmistakable. Other problems may be continuing annoyances. The first step in reaching a solution is pinpointing the problem area.
2. **Gather information.** Learn more about the problem situation. Look for possible causes and solutions. This step may mean checking files, calling suppliers, or brainstorming with fellow workers.
3. **Evaluate the evidence.** Where did the information come from? Does it represent various points of view? What biases could be expected from each source? How accurate is the information gathered? Is it fact or opinion?
4. **Consider alternatives and implications.** Draw conclusions from the gathered evidence and pose solutions. Then, weigh the advantages and disadvantages of each alternative. What are the costs, benefits, and consequences? What are the obstacles, and how can they be handled? Most important, what solution best serves your goals and those of your organization? **USE YOUR CREATIVITY!!!**
5. **Choose and implement the best alternative.** Select an alternative and put it into action. Then, follow through on your decision by monitoring the results of implementing your plan.

Types of Questions Used in Critical Thinking

Summary and Definition Questions

What is (are...? Who...? When...? How much...?
How many...? What is an example of...?

Analysis Questions

How...? Why...? What are the reasons for...? What are the types of...? What is the process of...? What other examples of...? What are the causes/results of...? What is the relationship between...and...? How does...apply to...? What is (are) the problems or conflicts or issues...? What are possible solutions/resolutions to these problems or conflicts or issues...? What is the main argument or thesis of...? How is this argument developed...? What evidence or proof or support is offered...? What are other theories or arguments from other authors...?

Hypothesis Questions

If...occurs, then what happens...? If...had happened, then what would be different...? What does theory x predict will happen...?

Evaluation Questions

Is...good or bad...? Correct or incorrect...? Effective or ineffective...? Relevant or irrelevant...? Clear or unclear...? Logical or illogical...? Applicable or not applicable...? Proven or not proven...? Ethical or unethical...? What are the advantages or disadvantages of...? What are the pros or cons of...? What is the best solution to the problem/conflict/issue...? What should or should not happen...? Do I agree or disagree...? What is my opinion...? What is my support for my opinion...?

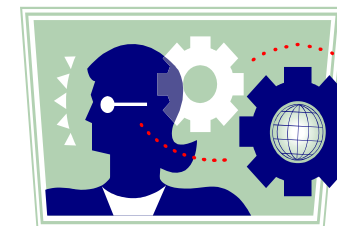
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Critical Thinking Skills



Critical Thinking Defined

Critical thinking involves stepping aside from your own personal beliefs, prejudices, and opinions to sort out the facts and discover the truth, even at the expense of your basic belief system.

Critical Thinking Guidelines

Ask Questions

1. Write down everything you know about the topic. When you cannot think of anything more, give yourself a few minutes to look for details that you may have missed. Ask yourself, "Is there anything else?" Be as inclusive as you can at this stage.
2. Re-organize the material into categories or groupings by asking, "How do these things fit together? What elements are related and how are they related? What general grouping are there?"
3. Ask, "What is the significance of all this? What can it be used for? What are its implications? Is there anything that does not fit or that does not agree with the facts, or with other theories on the topic, or with my personal experience?"

Push Past Your Limits—Remember, when you are doing these activities, that the interesting ideas are the one you haven't thought of yet. Always push yourself past the point at which you think you have said everything that needs to be said. Always ask questions that you cannot answer, and always ask more questions than you can answer.

Don't Just Think—Write! Write down every thought you have. There are a number of reasons for this: you don't want to forget what you thought; you will be able to retrace the steps you took to get an idea; you will have a pile of raw material with which to work—good ideas often come from apparently trivial or insignificant ideas. Also, you will find that writing down ideas will encourage you to think more.

Five Rules of Critical Thinking

Consistency—the critical thinker attempts to discover and eliminate contradictions in thinking.

Coherency—the critical thinker attempts to connect all of the various dimensions of thinking.

Applicability—the critical thinker attempts to ensure that the model of understanding really fits human experiences.

Adequacy—the critical thinker attempts to ensure that the model of understanding is flexible enough to incorporate new experiences and data.

Communicability—the critical thinker recognizes that thinking, knowing, and learning occur in a community of human beings and thereby the critical thinker attempts to ensure that the model of understanding is understandable to others.

Developing Reasoning Skills

1. All reasoning has a **PURPOSE**.

Take time to state your purpose clearly. Distinguish your purpose from related purposes. Check periodically to be sure you are still on target. Choose significant and realistic purposes.

2. All reasoning is an attempt to **FIGURE SOMETHING OUT, TO SETTLE SOME QUESTION, TO SOLVE SOME PROBLEM**.

Take time to clearly and precisely state the question at issue. Express the question in several ways to clarify its' meaning and scope. Break the question into sub-questions. Identify if the question has one right answer, is a matter of opinion, or requires reasoning from more than one point of view.

3. All reasoning is based on **ASSUMPTIONS**.

Clearly identify your assumptions and determine whether they are justifiable. Consider how your assumptions are shaping your point of view.

4. All reasoning is done from some **POINT OF VIEW**.

Identify your point of view. Seek other points of view and identify their strengths as well as weaknesses. Strive to be fair-minded in evaluating all points of view.

5. All reasoning is based on **DATA, INFORMATION, AND EVIDENCE**.

Restrict your claims to those supported by the data you have. Search for information that opposes your position as well as information that supports it. Make sure that all information used is clear, accurate, and relevant to the question at issue. Make sure you have gathered sufficient information.

6. All reasoning is expressed through, and shaped by, **CONCEPTS AND IDEAS**.

Identify key concepts and explain them clearly. Consider alternative concepts or alternative definitions to concepts. Make sure you are using concepts with care and precision.

7. All reasoning contains **INFERENCES OR INTERPRETATIONS** by which we draw **CONCLUSIONS** and give meaning to data.

Infer only what the evidence implies. Check inferences for their consistency with each other. Identify assumptions which lead you to your inferences.

8. All reasoning leads somewhere or has **IMPLICATIONS AND CONSEQUENCES**.

Trace the implications and consequences that follow from your reasoning. Search for negative as well as positive implications. Consider all possible consequences.

Resources: www.coun.uvic.ca/learn/crit.html, www.criticalthinking.org, www.nursehealer.com/critical.htm, Mary Ellen Guffey, Business Communication: Process and Product, 2E(Cincinnati: SouthWestern College Publishing, 1996).