



It's What We Do.

Critical Thinking Skills

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Critical Thinking Skills

Critical thinking. It's the foundation of most essential workplace skills, including problem solving, decision making, leadership, and strategic thinking. It's what helps people to find new solutions to tricky problems, avoid emotional thinking, and work together more efficiently. It can be the difference between success and failure, and it gives you a skill that will increase your effectiveness in your job.



By the end of this session you will be able to:

- define the key steps of critical thinking.
- use techniques to analyze problems at a deeper level.
- recognize and avoid critical thinking mistakes.
- implement the critical thinking process where you work

Outline

- I. Characteristics of Critical Thinking:
- II. Critical Thinking Mistakes
- III. Avoiding Rationalization and Emotional Thinking
- IV. The Critical Thinking Process
- V. Turning Thinking into Action



What Is Critical Thinking?

What kind of transportation do you use?



Examples of critical thinking

Definition of critical thinking

What critical thinking is NOT

- ◇ Acquisition of information without evaluation
- ◇ Evaluation of information without investigating it
- ◇ Being argumentative or critical of other people



Why Is It Important?

Critical thinking enables you to:

- ◇ Think independently
- ◇ Make better decisions
- ◇ Solve problems systematically
- ◇ Think more creatively
- ◇ Increase self-reflection

Specific benefits of critical thinking

- ◇ Detect inconsistencies and common mistakes in reasoning
- ◇ Recognize your own assumptions and biases
- ◇ Identify the importance and relevance of various ideas
- ◇ Reach well-reasoned conclusions and solutions

According to a study by the Conference Board, 400 senior HR professionals were asked to name the most important skill their employees will need in the next five years. Critical thinking ranked #1 – above innovation or technology.



Curiosity

Think like a kid

- ◇ Take a “naïve observer” perspective instead of being a know-it-all
- ◇ Show some humility; don't let pride or ego get in the way of clear thinking
- ◇ Ask questions that reflect your willingness to grasp and accept new ideas and conclusions
- ◇ Project inquisitiveness and excitement rather than skepticism or negativity



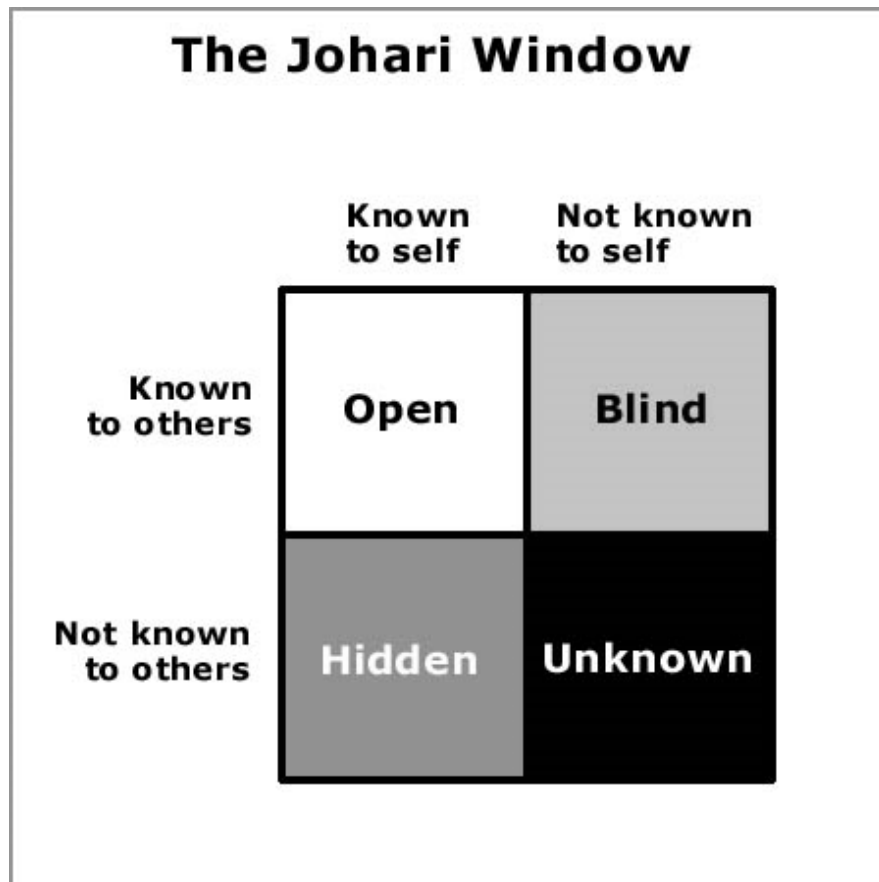
Activity

Instructions: Take a ruler and rubber band and combine them to make as many different uses as you can think of. List them below.



Awareness

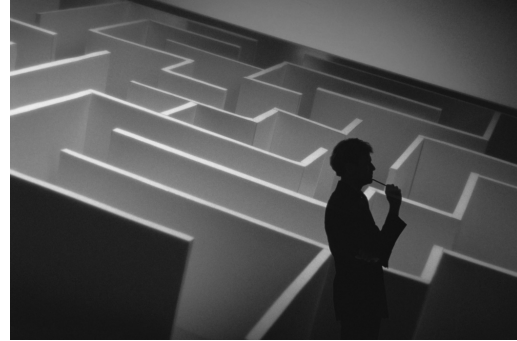
Awareness is knowing what you know, and knowing what you don't know.



Flexibility

Someone who is flexible:

- ◇ Is open to new information
- ◇ Changes approach or perspective in response to unexpected obstacles or changing conditions
- ◇ Adapts easily and rapidly to new situations and new information
- ◇ Considers alternative points of view without being attached to any one perspective
- ◇ Plays devil's advocate
- ◇ Deals with ambiguity without getting stressed out
- ◇ Solves problems through compromise and consensus and is willing to experiment with another person's ideas



Activity: Look at each group of words and think of another word that is associated with all three of them.

- | | | | |
|-----------|----------|------------|-------|
| 1. turkey | shoulder | war | _____ |
| 2. sun | back | television | _____ |
| 3. floor | play | fair | _____ |
| 4. coffee | heart | down | _____ |
| 5. rage | tobacco | rash | _____ |



Common Sense

- ◇ Pay attention to the obvious
- ◇ Verification and accuracy: Are numerical figures accurate?
- ◇ Does it pass the "sniff test"? Think of outlandish urban legends, like stories of people who follow their GPS when it tells them to drive into a building!
- ◇ Consider the source



Common sense quiz

1. How many birthdays does the average man have?
2. You have two US coins totaling 55 cents. One is not a nickel. What are the coins?
3. If there are 3 apples and you take away two, how many do you have?
4. Divide 30 by $1/2$ and add 10. What's the answer?
5. Two men play five games of checkers. Each man wins the same number of games. There are no ties. Explain this.
6. If you have only one match and you walked into a room where there was an oil burner, a kerosene lamp, and a wood burning stove, what would you light first?
7. A farmer has 17 sheep; all but 9 die. How many are left?
8. Is it legal for a man in Missouri to marry his widow's sister? Why?



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Critical Thinking Mistakes



Rationalization



- ◇ Evidence → Conclusion = Logic
- ◇ Conclusion → Evidence = Rationalization
- ◇ Commonly known as excuses!
- ◇ Arises from a desire to avoid being wrong or not wanting to accept another conclusion

Examples

- ◇ A manager who wants to hire a personal friend keeps finding reasons to reject resumes from other, perhaps more qualified, applicants
- ◇ A restaurant cuts portion sizes of its entrees without reducing the price to save money and tries to convince customers that the “healthier portion size” is better for them

To avoid:

- ◇ Determine your true motivation for thinking or believing a certain conclusion.
- ◇ Listen carefully to others’ explanations—both to uncover valid reasoning you haven’t thought about and to detect whether they are using invalid reasoning.



Emotional Thinking

- ◇ Reacting to a feeling
- ◇ Reacting to emotional language
 - Example: “Public employee” vs. “Bureaucrat”
- ◇ Wishful thinking
- ◇ Polarization: Emotional attachment to one side of an issue
 - Trusting evidence for your belief/position without questioning it
 - Rejecting evidence without examining other positions
 - Thinking: Good (“us”) versus bad (“them”)

To avoid:

- ◇ Separate facts from feelings
- ◇ Focus on developing flexibility
- ◇ Carefully follow the critical thinking process

Activity: Read the sentence below and rewrite it to eliminate any emotional or polarizing language.

The new manager's leadership is disastrous; she intends to dismantle a perfectly good system just so she can cling to her familiar way of doing things.



Biases

Confirmation bias

- ◇ The tendency to seek information that proves, rather than disproves, our theories.
- ◇ One piece of false evidence can completely invalidate other, more visible supporting factors.



Hindsight bias

- ◇ The tendency to see past results as different or more probable than initially thought. *“I knew we were going to lose.”*

Recency effect

- ◇ The tendency to give more credence to the most recent data you receive. Studies show that people remember information more easily from the end of a list than from the middle.

Overconfidence

- ◇ Studies show that people tend to overestimate their abilities—asked to rank themselves against others, more than 80% of people place themselves in the top 30% of the group.
- ◇ Trusting a source just because you're familiar with it.

To avoid:

- ◇ Carefully reflect on your reactions, looking for bias.
- ◇ Trust, but verify.



Tunnel Vision



- ◇ Arises from conditioning that causes us to behave in certain patterns
- ◇ Blinders
- ◇ Missing the big picture
- ◇ We can't grasp any options other than the ones we see/know

Example

- ◇ When is four half of five?

Activity

- ◇ Just _____
- ◇ Good to the _____
- ◇ We try _____
- ◇ Melts in your mouth _____
- ◇ Takes a licking and _____

To avoid:

- ◇ Actively consider other perspectives
- ◇ Seek out someone with a different perspective and ask for his or her input



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The Critical Thinking Process



E E E

Examine

- ◇ Identify the issue or problem
- ◇ Collect information



Explore

- ◇ Uncover assumptions and biases
- ◇ Interpret information
- ◇ Brainstorm alternative explanations or solutions



Evaluate

- ◇ Assess explanations or solutions
- ◇ Reach a conclusion



Examine



Identify the issue

You can't evaluate what you can't identify

- ◇ Issue: The question or situation that requires an answer or conclusion
- ◇ What the issue is NOT:

Examples - Statistics - Evidence - Conclusion

Collect information

Search for the 5 W's and H:

W_____ W_____ W_____ W_____ W_____ H_____

- ◇ Observation/personal experience
- ◇ Intuition
 - Recognize a situation that may mislead other people. Example: When an extremely rare catastrophic earthquake occurs in a city, people may begin to think of that city as earthquake-prone or unsafe, even though that may not be the case.
- ◇ Examples
- ◇ Statistics
- ◇ Research findings
- ◇ Expert testimony



Explore



Interpret information

- ◇ Separate fact from opinion: look or ask for the evidence to back up the information.
- ◇ Clarify ambiguous words, phrases, examples, or statistics.
 - Example: “*Produced excellent results.*” What does “*excellent*” mean? What “*results*” were produced?
- ◇ Clarify numbers that are too big or too small to picture
 - A million versus a billion versus a trillion dollars
- ◇ Recognize euphemisms -- Examples:
 - “*Profit-taking*” = selling or cutting losses
 - “*Downsizing,*” “*rightsizing,*” “*RIF*” (reduction in force), “*reorganizing*” = cutting jobs, layoffs, or if you want to call it what it is, firing people.
 - “*Categorical inaccuracy*” = lie
 - “*Asset*” or “*resource*” = people

Activity

Instructions: Complete each sentence below.

Babies are _____

Elderly people are _____

My neighbors are _____

Girl Scouts are _____

CEOs are _____

Customers are _____



Explore (cont.)

Uncover assumptions

Assumptions are unstated beliefs, usually related to values, priorities, and preferences. They are the filter through which we view the issue.

- ◇ Typical values conflicts include: loyalty vs. honesty, competition vs. cooperation, security vs. excitement, self-control vs. spontaneity, individual rights vs. group/community interests
- ◇ Recognize the assumptions being made: Ask, “How do I/we know that?”
- ◇ Seek alternative viewpoints: find out how other people view the same situation.
- ◇ Consider the assumption's relevance: understand the extent to which an assumption applies to the situation.

Activity

Instructions: Look at the photo and tell a story about what you see.

“When you assume, you make an ass out of u and me.”

Oscar Wilde



Explore (cont.)

Generate alternative explanations

- ◇ What are all the explanations and options you can come up with?
- ◇ Put yourself in someone else's shoes: If you look at the issue and evidence from other perspectives, what possible solutions might you reach?
- ◇ Dare to be different: Consider the most outlandish explanations and solutions.

Brainstorming techniques

- ◇ Mind mapping
 - Start with your issue or problem in the center of a flip chart or whiteboard. Create branches of sub-topics, and branch out from those until you capture all of the ideas related to the issue.
- ◇ Drawing
 - Think of an issue or problem. Consider: What are the major obstacles? What isn't working? What's bothering me most is...
 - Next, draw any pictures, scribbles, doodles, etc. that come into your mind without trying to make them look decipherable. Then look at them and see what ideas or solutions arise from them.



- ◇ Brainwriting
 - Get a group of people and have them write their ideas for how to solve the problem on their own sheets of paper. After three minutes, ask them to rotate the sheets to different people and build off what the last person wrote. Rotate as many times as you want, or until everyone has written on everyone else's sheet.
- ◇ Reverse brainstorming
 - Instead of asking, "*How can I solve this problem?*" ask, "*How can I create this problem?*" From those ideas, see if you can work backward to solve your actual problem or issue.
- ◇ Role model
 - Brainstorm ideas as if you were your role model, or a public figure you admire. What would your parent do? Best friend? Beloved teacher? Bill Gates? Warren Buffett? Thomas Jefferson? Albert Einstein? Mother Teresa? What would this person think or do about the issue or problem?



Brainstorming practice

Instructions: Read the following scenario and then use the brainstorming technique assigned to your group to generate ideas, options and possible solutions to the issue.

You are the supervisor for a team of 12 people. Your IT department has installed new accounting software for the entire organization. Some of your team members are eager to use it, some greatly prefer the old software, and some don't want to use any software at all. Your goal is to get all team members to use the new software without complaining.



Evaluate



Assess explanations or solutions

- ◇ Are there erroneous or incorrect assumptions?
- ◇ Are there any fallacies in the reasoning?
 - Review critical thinking mistakes.
- ◇ How good is the information?
 - What is the source?
 - Can you test it?
 - Is it vague?
 - Did you observe for yourself? Check for yourself?
 - Is the information based on only one occurrence? Or is there a pattern?
- ◇ Is information omitted?
 - Context
 - Negative or opposing ideas or information
- ◇ How dependable are the statistics?
 - Are there other statistics that contradict the data you collected?



Evaluate (cont.)

- ◇ What options/solutions/conclusions can you toss out due to faulty reasoning, incorrect assumptions, bad information, etc.?
- ◇ List the pros and cons of the remaining choices.
- ◇ Consider mapping choices on a value/effort grid.
- ◇ Prioritize each choice.

Reach a conclusion

- ◇ What reasonable conclusions are possible?
 - Multiple conclusions are usually possible from a single set of data/information.
 - Beware of either-or choices.
- ◇ What is the most reasonable conclusion?



Turning Thinking into Action:

Critical Thinking Practice

Instructions: Read the following scenario and answer the questions.

A commercial building is under construction. The construction company has submitted additional bills above and beyond the signed contract because the building owner has requested so many changes. The owner believes the changes are within the allowable limits of the contract, but the construction company disagrees and is threatening to halt construction if the situation can't be resolved.

Identify the problem or issue:

What information do you have?

What additional information would help you to reach a reasonable conclusion?



Critical Thinking Practice (cont.)

What assumptions have been made?

What alternative explanations or solutions are possible?

What is the most reasonable choice or conclusion?



Thinking about Critical Thinking

Use this tool to evaluate the critical thinking process for the scenario.

Instructions: Reviewing the behavior and conversations you observed while completing the practice activity, choose the response that most accurately reflects the performance of the group.

Accurately and thoroughly EXAMINES the issue or problem		
1 Unskilled	2 Developing	3 Proficient
No in-depth look at the issue, no attempt to gather data or evidence outside of personal knowledge and perspective.	Gathers data and evidence but doesn't verify its accuracy, limits data gathering to familiar sources.	Makes first-hand observations when possible, gathers data and evidence from a variety of sources and verifies its accuracy.
Comments:		

Accurately and thoroughly IDENTIFIES the issue or problem		
1 Unskilled	2 Developing	3 Proficient
Fails to identify and/or summarize the problem or issue in any detail.	Summarizes the issue, though some aspects are incorrect or mixed up. Key details are superficially covered or missing entirely.	Clearly and completely summarizes the issue, including all relevant aspects of the issue, even if seemingly small.
Comments:		



Accurately and thoroughly identifies the ASSUMPTIONS and BIASES		
1 Unskilled	2 Developing	3 Proficient
Approach to the issue or problem is one-dimensional, doesn't recognize assumptions or biases.	Recognizes some assumptions and biases, and attempts to account for them in the analysis of the issue or problem.	Clearly identifies assumptions and biases. Delves into the assumptions to separate valid from invalid.
Comments:		

Accurately and thoroughly EXPLORES the issue or problem		
1 Unskilled	2 Developing	3 Proficient
Accepts evidence and statistics at face value, makes no attempt to separate facts from opinions.	Analyzes and verifies the evidence, uses objective questioning to separate facts from opinions.	Challenges the evidence to verify its accuracy, actively looks for fallacies in reasoning or for information that may have been omitted that may be relevant to the issue.
Comments:		



Accurately and thoroughly EVALUATES the issue		
1 Unskilled	2 Developing	3 Proficient
Presents conclusion as a simplistic summary of information, rather than analysis. Fails to identify implications or consequences of the conclusion.	Presents conclusion as the most reasonable based on the evidence. Does not fully consider the implications and consequences of the conclusion.	Presents conclusion as the most reasonable based on the evidence. Carefully considers the implications and consequences of the conclusion or decision.
Comments:		

Demonstrates critical thinking CHARACTERISTICS: awareness, curiosity, flexibility and common sense		
1 Unskilled	2 Developing	3 Proficient
Doesn't demonstrate any of the characteristics.	Demonstrates some of the characteristics, or demonstrates all the characteristics but for only part of the process.	Demonstrates all characteristics throughout the entire critical thinking process.
Comments:		



Action Plan

Step One: Skill Review

Skills I want to master:	Start/Finish Date
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Step Two: Implementation

What do you need to implement your plan?

List additional skills and projects you could accomplish with more training.



Course Review

1. Write a definition of critical thinking.

2. List three benefits of critical thinking.

3. Which of the following is NOT a characteristic of critical thinking?

- a. Curiosity
- b. Awareness
- c. Standing your ground
- d. Common sense

4. Which of the following describes rationalization?

- a. Evidence → Conclusion = Rationalization
- b. Conclusion → Evidence = Rationalization

5. What of the following is NOT an example of emotional thinking?

- a. Checking your intuition
- b. Reacting to loaded language
- c. Polarization
- d. Wishful thinking



6. "The tendency to seek information that proves, rather than disproves, your belief" describes which type of bias?
- a. Hindsight bias
 - b. Confirmation bias
 - c. Recency effect
 - d. Overconfidence

7. What are the three parts of the critical thinking process?

8. List three brainstorming strategies.

9. Statistics serve as proof of your belief/idea/conclusion.
- a. True
 - b. False

10. Multiple conclusions are possible from a single set of data/information.
- a. True
 - b. False



Membership



Talent Acquisition



HR Consulting



Background Checks



Training



Organizational Development

