

GE Foundation Workplace Skills Program

Module Six Critical Thinking Skills

Participant Booklet

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Introduction to Module Six – Critical Thinking Skills

All employers want employees to make good decisions and to contribute to solving problems in the workplace. This means developing critical thinking skills. Critical thinking is complex and involves a number of sub skills that need to be learned and refined over time. Individuals with strong critical thinking skills are a very valuable resource to teams and to businesses.

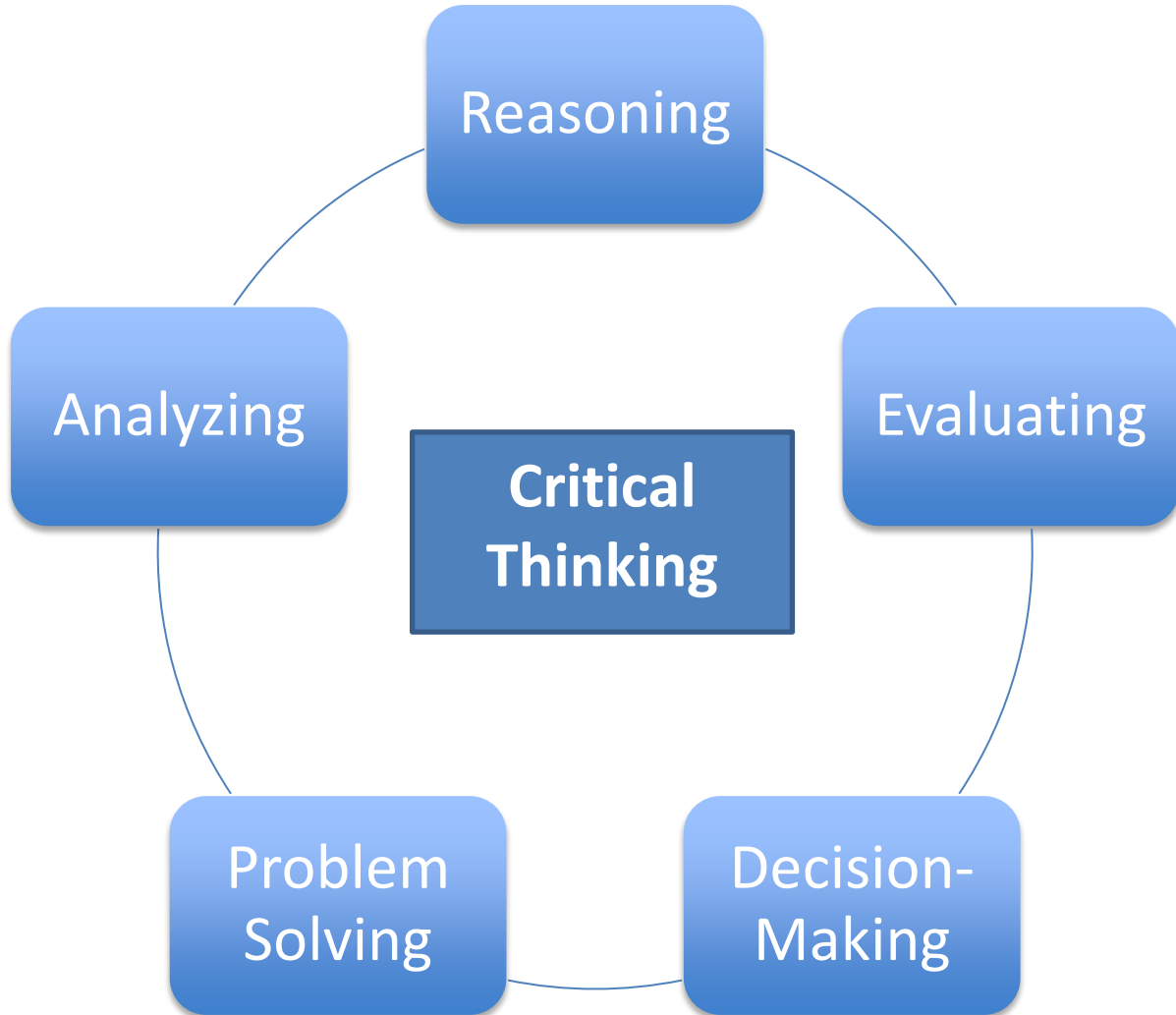
In this module you will explore what critical thinking is and is not. You will discuss the components, skills, and specific characteristics and qualities that critical thinkers demonstrate. You will also examine misconceptions and mental traps related to critical thinking. Critical thinking develops over time, and we will discuss the stages of critical thinking development. In addition, you will be introduced to deBono's Six Thinking Hats approach and will have the opportunity to practice lateral thinking while trying to solve two different workplace problems.

Ultimately, critical thinking skills are applied to solve problems and to make decisions. We will work through a problem-solving model, and you will learn about and practice the different steps and strategies within each stage. We will discuss decision making and fascinating new research on the impact of information overload on our abilities to make good decisions. Guidelines for making good decisions will be presented as well. You will also learn a number of decision-making strategies that provide structures for groups to use, when they are being asked for input, or offering suggestions for solving specific problems.

You will be engaged in self-reflection, problem-solving scenarios, self-assessments, discussions, and group decision-making activities.

Critical Thinking Skills Model

Critical thinking is the art of analyzing and evaluating thinking with a view to improving it.



Critical Thinking Components

In the workplace you will be expected to engage in critical thinking on a daily basis. Employees will have to analyze, evaluate, reason, solve problems, and make decisions. While these abilities are connected, they are also distinct and involve specific behaviors.

Analysis means having the ability to take something apart and examine the essential or constituent parts, and the relationships between the parts. For example, when you take your car in for a service check, the mechanic systematically does an analysis to determine the problem that needs to be fixed. They are masters at taking things apart and putting them back together.

Evaluating is making an assessment or judgment based on criteria, a set of standards, data, or information. For example, when you go to the doctor, he or she completes a number of vital signs tests, looks at data and your records, and arrives at a judgment about the status of your health.

Reasoning is your ability to form a coherent and logical argument, and to be able to use reasons to justify your argument. It is the process of using your mind to consider something carefully and to be able to demonstrate that it is either true or false. The main function of reasoning is to be able to devise and evaluate arguments intended to persuade others. For example, lawyers use reasoning in the courtroom to convince a jury that the defendant is either guilty or innocent.

Problem solving is the ability to understand the root causes of an issue or situation, consider alternative solutions, and arrive at a decision about which solution is best to address the problem. For example, a sales team is brought together because sales have dropped 25% in the last quarter. They need to work through a systematic problem solving process in order to find a solution.

Decision-making is the ability to identify and choose a course of action from alternatives, based on values and preferences. For example, when a young couple is buying their first house, they usually start with determining the amount of money they have to spend. Then, they need to consider location, size, and amenities. Typically, they end up having to decide between House A and House B.

Case Study and Fishbowl

The Nova Company

- Nova is a car assembly plant that has been operating in South Carolina for the past five years. Currently, the company is experiencing many pressures. The company has invested considerable funds to build the plant, but within the past year Nova is having trouble finding skilled workers, and production is not moving forward as anticipated.
- Costs are increasing and profits are down at Nova's South Carolina plant, and this is creating concerns from the boardroom to the plant floor. Everyone seems to know the plant is struggling.
- There is a history of conflicts between the union and the company. There have been threats of strikes over the past two years, but management and the union have managed to reach a resolution on the issues at the 11th hour.
- The company is restructuring at the management level in New York City and this is creating uncertainty about the plant's future.
- Nova is an international company with plants in Canada, the US, and Europe. The new CEO was told to cut costs, and get profits up, or there will be layoffs and plant closures.
- This pressure has created tensions between the frontline supervisors and the workers. Frontline supervisors are pushing the workers because they have been directed to work harder and faster

The general manager of the plant has called together a set of workers to problem solve about how to increase workplace morale and increase productivity.

Critical Thinking – Standards and Questions to Ask

To ensure a team is thinking critically as a group, use the following universally accepted standards and questions to keep people focused on improving the quality of their reasoning.

Standards	Questions
Clarity	<ol style="list-style-type: none"> 1. Can you elaborate on that point? 2. Can you give me an example of what you mean?
Accuracy	<ol style="list-style-type: none"> 1. How can we find out if this is true? 2. How can we check that out?
Precision	<ol style="list-style-type: none"> 1. Can you be more specific or exact? 2. Can you give me more details on that point?
Relevance	<ol style="list-style-type: none"> 1. How does that point relate to this problem? 2. How does this information help us?
Depth	<ol style="list-style-type: none"> 1. Why is this problem difficult or complex? 2. What are some of the complexities of this issue?
Breath	<ol style="list-style-type: none"> 1. Do we need to consider other points of view? 2. Do we need to look at this issue in other ways?
Logic	<ol style="list-style-type: none"> 1. Does this make sense? 2. Does what you say fit with the evidence?
Significance	<ol style="list-style-type: none"> 1. Is this the most important problem to solve? 2. What is the central idea here?
Fairness	<ol style="list-style-type: none"> 1. Are we listening to the viewpoints of others? 2. Do I have a conflict of interest here?

Paul, R., & Elder, L. (2006). *Critical thinking concepts and tools*. Dillon Beach, CA: The Foundation for Critical Thinking.

Critical Thinking Skills

Critical thinking is the ability to think clearly and rationally. A person who is a good critical thinker can:

- evaluate information in a systematic way
- understand the logical connections between ideas
- identify inconsistencies in others' thinking
- effectively solve problems and make informed decisions
- separate what is important and what is irrelevant information
- construct strong evidence-based arguments
- view situations from different perspectives
- ask hard questions to challenge observations and assumptions

Critical thinkers typically engage in self-reflection and independent thinking. They think about their thinking, and they are often able to think “outside the box.” Critical thinkers closely examine their beliefs, assumptions, ideas, and arguments in order to identify misconceptions and gaps in their reasoning. They are able to refine their thought processes over time, and they are very skilled at synthesizing information.

Many people are under the false impression that if you can hold a lot of facts or knowledge in your brain, and you are able to recall this information with ease, that you are a good critical thinker. This simply means you are able to store and retrieve information from your memory more effectively than others. It is not a guarantee that you will be a good critical thinker.

Critical thinkers are able to interpret what information really means, they are able to analyze ideas and arguments, they are able to reach accurate conclusions based on evidence, and they can assess whether people got the facts right. They can eventually sort out what is credible and true from what is not credible and not true.

Critical Thinking Skills Assessment

Critical thinkers are able to:

		Low					High
1	Evaluate information in a systematic way.	1	2	3	4	5	6
2	Identify inconsistencies in others' thinking	1	2	3	4	5	6
3	Understand the logical connections between ideas	1	2	3	4	5	6
4	Effectively solve problems and make informed decisions	1	2	3	4	5	6
5	Separate what is important and what is irrelevant information	1	2	3	4	5	6
6	Construct strong evidence-based arguments	1	2	3	4	5	6
7	View situations from different perspectives	1	2	3	4	5	6
8	Ask hard questions to challenge observations and assumptions	1	2	3	4	5	6
9	Interpret what information really means	1	2	3	4	5	6
10	Analyze ideas and arguments	1	2	3	4	5	6
11	Reach conclusions based on evidence	1	2	3	4	5	6
12	Assess whether people got the facts right	1	2	3	4	5	6
13	Identify misconceptions and gaps in their own reasoning	1	2	3	4	5	6

Characteristics and Qualities of Critical Thinkers

Employees who bring strong critical thinking to the workplace are invaluable to employers and teammates. They bring a special kind of intelligence that ensures problems are analyzed and solved both efficiently and effectively. They are not afraid to make mistakes, and as a matter of fact, they often learn their most valuable lessons from their mistakes. Critical thinkers are able to consistently help supervisors and teams anticipate the consequences of action or inaction, and in the end help the team make good decisions.

Critical thinkers also bring the following seven characteristics to the workplace:

- **Creative** – They can see early patterns of thinking and behaviors surfacing, and they can tap into innovative ideas and solutions.
- **Curious** – They are always interested in learning more about an idea, theory, or issue. They want to develop explanations to all their questions or for what's puzzling them, beyond a surface level.
- **Knowledgeable** – They willing offer their analysis and conclusions, based on their expertise. Their knowledge is typically very sound.
- **Open-minded** – They can listen to everyone's opinion and then accurately assess the strengths and weaknesses of their positions. They rarely assume they have the right answers, and they recognize many shades of grey.
- **Insightful** – They are able to get to the core of a situation, or to an understanding of the root causes of problems, without getting paralyzed or distracted by all the details. They can tap into their intuition, and then use evidence to support their conclusions.

- **Thought Provoking** – They are able to present their ideas or thinking in a very clear and fluid manner. They are very skilled at dialogue when discussions go back and forth about ideas, solutions, or problems. They are not afraid to disagree.
- **Proactive** – They initiate action when faced with a problem, and they use their strong thinking skills to find possible solutions. They typically don't sit back and then react.

How Others See You

When you are working in a group or a team, how often would others see you demonstrating these critical thinking qualities?

Creative	Rarely	Sometimes	Often	Always
Curious	Rarely	Sometimes	Often	Always
Knowledgeable	Rarely	Sometimes	Often	Always
Open-minded	Rarely	Sometimes	Often	Always
Insightful	Rarely	Sometimes	Often	Always
Thought Provoking	Rarely	Sometimes	Often	Always
Proactive	Rarely	Sometimes	Often	Always

Egocentric Thinking

Why We Believe What We Do

One of the complex problems we face, when trying to become critical thinkers, is that we typically engage in egocentric thinking. This simply means that we do not naturally consider the rights and needs of others, or consider their point of view, when involved in discussions or trying to problem solve. Humans often don't appreciate the fact that we make our own assumptions based on limited information, we look at situations through our own experiences or lenses, we often interpret information through our biases, and we often reach conclusions that somehow meet our own needs and interests. These egocentric ways of thinking constantly interfere with our attempts to be an objective, critical thinker.

In other words, people often take the position that:

- it's true because I believe it
- it's true because we believe it
- it's true because I want to believe it
- it's true because I have always believed it
- it's true because it is in my selfish interest to believe it

Critical Thinking: Starting With Yourself

An important quality of a critical thinker is the willingness and ability to look at themselves. They constantly examine their own thinking. They challenge themselves to think in different ways, and they try to look at old situations in novel ways.

These reflection exercises can consume your energy because you are uncovering your biases, misconceptions, false beliefs, and thinking distortions that are obstacles to you becoming a critical thinker.

Think about a time when you were talking through a problem and you showed a clear bias.

Think about a time you discovered that you believed something that was not true.

Think about a time when you thought you understood something, only to discover you had a misconception.

Think about a time when you were in a debate or discussion with a friend, or family member, and you realized your reasoning was off-track.

Mental Traps That Hurt Critical Thinking

Mental traps are bad habits in our thinking that we develop over the years. These ways of thinking block us from making good decisions and often we are not even aware of their influences over us. Like any habit, we fall into these mental traps automatically. The way to change these habits is to intentionally bring them to our conscious awareness, acknowledge that we engage in these behavior patterns, and then work to form new habits.

Some of these mental traps are:

- We continue to work on projects that have lost their meaning or value for us.
- We work harder than necessary to achieve our goals, wasting our energy and resources.
- We remain fixated or stuck on a task when it is clear that we are blocked from achieving our goals.
- We know our plans have failed, the game is over, we have lost, yet we continue to dwell on the “what ifs” and continue to replay the events.
- We start working on something too soon and we end up overworking, or working in vain.
- We try to hold on to the old course of action and we resist making the inevitable change.
- We clearly decide to do something, but we procrastinate, or have get difficulty getting started and getting down to business.
- We try to attend to two things at once, and they both require focus or conscious attention.
- We are rushing or hurried, acting faster than we should, and we don’t give the task the time and attention that it needs.
- We spend too much time thinking about topics that shouldn’t even occupy our minds.
- We carelessly say or think something just because it seems to be true.

Kukal, A. (2006). *Mental Traps*. Toronto, ON: Random House.

Mental Traps Reflection

Think about your own life experiences, and identify two examples of times when you have fallen into one or more of these mental traps.

Mental Trap	Example
1.	
2.	

Talk about ways to avoid these mental traps. What do you need to start doing and stop doing?

Start Doing	Stop Doing

Stages of Critical Thinking Development



Paul, R., & Elder, L. (2006). *Critical thinking concepts and tools*. Dillon Beach, CA: The Foundation for Critical Thinking.

Introduction to deBono's Six Thinking Hats

The purpose of the six thinking hats is to have people engage in a more practical and cooperative method for developing critical thinking skills. In the past, improving our thinking has been limited to the “argument method.” Individuals would be expected to create strong arguments, and then find faults in another person’s thinking when discussing issues, problems, or situations. The intent was that this argument method would eventually bring people to the truth.

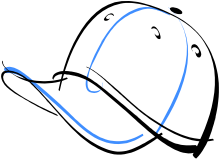


In the modern workplace, the argument method is limiting because employees, supervisors, and employers are expected to work together to solve complex problems and to stimulate innovations. The six thinking hats from Edward deBono offer an alternative to confrontational thinking. His parallel thinking method is more aligned with the teamwork philosophy promoted in most 21st century workplaces.




The six thinking hats method is intentioned to engage a team in thinking about an issue or situation, from a variety of perspectives, to fully explore a problem. The six perspectives involve individuals and teams in considering information, creativity, emotions, cautions, benefits, and thinking about thinking.

deBono's Six Thinking Hats

Six Possible Dispositions

Below is a brief explanation of each hat. Please understand that these hats represent thinking that is much more complex than illustrated below. We encourage you to read one of the books that deBono has published related to the hats. Our purpose here is to simply illustrate how the hats can be woven into the problem solving process.

	<p>Information</p> <p>The white hat represents data and information. When the white hat is in use, you are attending to information that is both present and missing. This includes sharing ideas, as well as asking for information.</p> <ul style="list-style-type: none">• What information do we have?• What information do we need?• What information is missing and where is it?• What do we know about _____?
	<p>Creativity</p> <p>The green hat represents creativity. When the green hat is in use, you offer suggestions, make proposals, and explore alternatives. You think outside the box, and make suggestions about additions and modifications, without necessarily using logic to defend your ideas.</p> <ul style="list-style-type: none">• What are some new ideas?• What are some alternatives to what we are thinking about?
	<p>Emotion</p> <p>The red hat represents emotion, feelings, and intuition. When the red hat is in use, you freely share your feelings without having to justify why. It allows for feelings and intuition to have a valid place in discussions.</p> <ul style="list-style-type: none">• How are people feeling about this?• What's your gut feeling telling you?• What is your best hunch?

	<p>Caution</p> <p>The black hat represents caution. This hat stops us and makes us consider whether an action might be hurtful, impractical, time consuming, too expensive, or just wrong. When this hat is in use, the risks, hazards, weaknesses, and roadblocks of an idea are discussed. It is the most widely used hat and the most useful hat. The caution is to avoid over using the black hat.</p> <ul style="list-style-type: none"> • Where do we need to be cautious? • What are the dangers? • Where can things go wrong? • Where do you see difficulties arising?
	<p>Benefits</p> <p>The yellow hat represents benefits and positive aspects. When the yellow hat is in use, you make an effort to find the value, benefits, and good points about an idea or situation. The intent is to be optimistic and realistic.</p> <ul style="list-style-type: none"> • Can we make this work? • What are the benefits?
	<p>Managing the Thinking</p> <p>The blue hat represents the overall thinking process. When the blue hat is in use, there is attention to order and sequence. It is used at the beginning to focus a discussion, or at the end of a discussion to summarize. It is also useful when things are getting confusing. The blue hat is focused on thinking about your thinking.</p> <ul style="list-style-type: none"> • It seems we are thinking _____ • What conclusions can we reach based on these discussions? • We could summarize the discussion by saying _____

deBono, E. (1992). *Six thinking hats*. The McQuaig Group Inc.

Six Thinking Hats Discussion – Workload Issues

Creative Communications is a public relations company in a Memphis, TN. There are 100 employees in the company. There is tension in the workplace because many people are working very hard and others are not pulling their weight. A group of 10 support staff are coming late and leaving early. They are also socializing extensively during the workday. In addition, they are also extending the lunch hour and abusing sick days. On the other hand, some support staff members are very effective and efficient, as well as very current with technology. There are times when the work is not getting completed in a timely matter.

The public relations field workers are very divided about this issue. A number of them don't see it as a big problem, while others are getting increasingly frustrated. Certain individuals have expressed the concern that addressing this issue will make things worse. Their position is "you pick your battles" and bringing this up will create more tension in the workplace. Other individuals feel this should be addressed immediately.

The president of the company has called together a small group to get advice on how to solve this problem.

Six Thinking Hats Discussion – Communication Problems

The owners of a local electronics plant have decided to sell the business been put up for sale. The company has been established in the community for the past 25 years and there are 1,500 employees. There is great uncertainty about job loss and when decisions are going to be made. A number of people will be laid off, others will be transferred to another location, and some may remain at the plant with the new owners. Everyone is anxious and rumors are starting to spread. This is affecting productivity and morale.

The HR department has called together a group of workers to solicit ideas about developing a communication plan, to help inform workers and community members about this change and transition for employees.

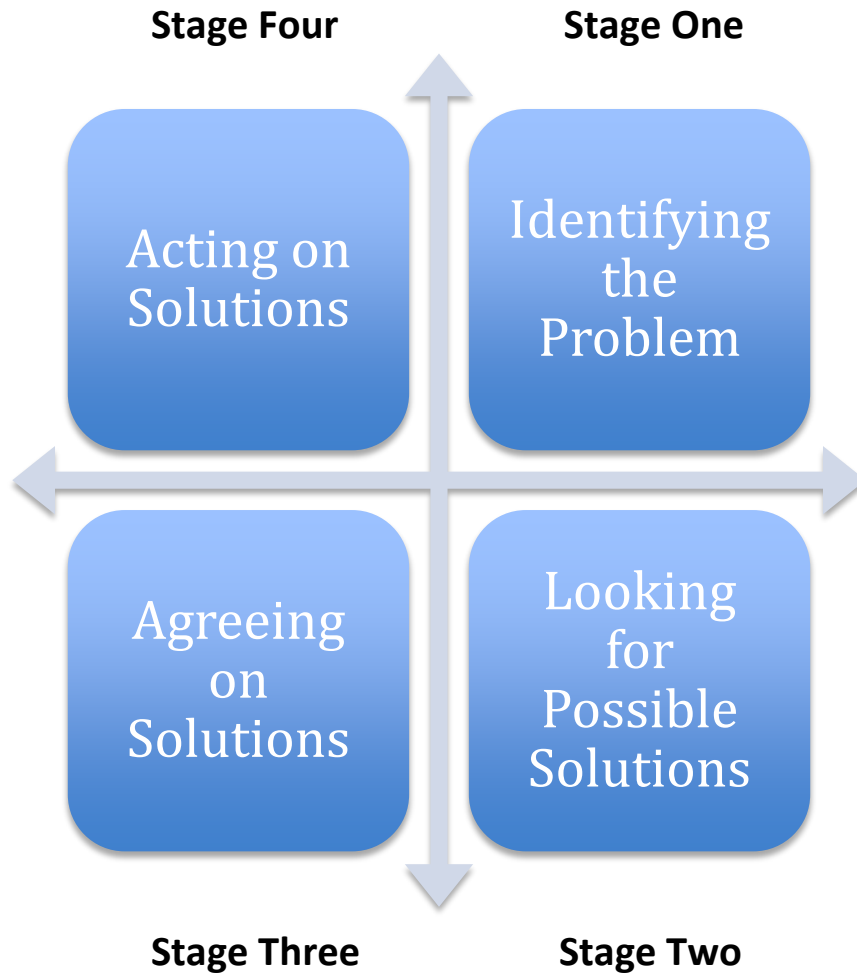
Team Problem Solving and Decision Making

Everyone deals with problems on a daily basis. Some problems are small, while others are serious and complex. Understanding the stages and steps in problem solving will help you effectively and efficiently find solutions to obstacles, in the workplace and in life. Some of the time you have to solve a problem on your own, but more often you will be involved in team problem solving in the workplace. Teams outperform individuals, as they represent multiple perspectives related to problems simply generate more possible solutions. There are many decision-making points embedded in team problem solving, and the team needs to be able to use a variety of proven group decision-making strategies.

Good problem solvers gather relevant information about a problem, analyze the data or information, and begin to generate possible solutions. Employees who solve more problems, small or large, are more valuable to employers. Things will go wrong at work and these problems need solutions. Problem solvers can figure out where things have broken down and come to an understanding of the root cause of a problem. This is a very important skill because finding the real problem is critical to solving the problem. Seeking input from others, and considering a number of solutions is also important, and good problem solvers typically do this. They help everyone be more productive and effective in the workplace. Employers value employees who are problem solvers, because they are able and willing to take on challenges by thinking critically and creatively.

Problem Solving Stages and Steps

Effective problem solving usually involves working through a number of stages and steps.



Identifying the Problem

- Identifying the real problem is the most important step in the problem solving process. Too many times teams are focused on solving the symptoms of problems, rather than the root causes of the problem.
- It is very important to have the right people in the room; people with the technical knowledge and experience to help you solve the problem.
- Getting the right facts is also key to identifying the real problem. Teams need to collect critical information related to the problem, and the team needs to talk to the right people who can provide relevant facts and insights.
- In the beginning stage visually mapping the problem is an effective way to understand what is going on. Teams often create these visuals to help people see the varied factors, and interconnections between factors, that maintain the problem.
- Continue to ask the question: “Why is this happening?” When the team can no longer answer “why” you are likely discussing the root causes of the problem.
- When the team has identified the root causes of the problem, reframe the problem by writing it in the form of a question.
- Example:
 - The problem was initially labeled – TIME Pressures
 - Critical causes identified by the team:
 - unequal workload
 - unclear expectations
 - ineffective use of time
 - Problem statement – How do we create a more balanced workload, clarify workplace expectations, and learn to use time more effectively?

Looking for Possible Solutions

- This is the stage where everyone focuses on coming up with ideas and solutions to solve the problem.
- It is very important to separate creating solutions from evaluating solutions. Teams often fall into the trap of presenting ideas or solutions, and then immediately evaluating them. Trying to invent and decide at the same time shuts down the creative process, and limits the number of solutions that will be generated and evaluated in the end.
- Begin looking for solutions by brainstorming all the possible ideas that need to be considered, discussed, and evaluated. Brainstorming guidelines:
 - Generate as many ideas as possible
 - Build on other's ideas
 - No discussing or evaluating ideas
 - Wild ideas are accepted
 - Record all ideas
- Take a two-minute break and let minds relax. Then, continue the brainstorming session. It is important for team members to draw on both their rational thinking and intuitive sense, when suggesting possible solutions.
- When the team believes they have exhausted all the possibilities, read the recorded list aloud, and then generate additional ideas.
- Ensure all team members understand each of the possible solutions, before beginning to discuss, debate, and decide on the best ideas.

Selecting Solutions

- This is the stage where the team makes judgments and decides what to do.
- It involves weighing all the ideas as possible solutions, and then choosing the best ones. This generally involves discussing the pros and cons of each solution.
- In order to help teams decide or weight the ideas, it is important to identify criteria that will define the rules for testing the ideas. Criteria define the limits or boundaries the team must work within. Developing criteria is basically building a fence around the decision making, in order to increase the quality of the final decision. This avoids developing solutions that the company cannot, or will not implement.
- Complete the phrase: The solution must _____
- For example:
 - The solution can't cost more than \$10,000 to implement.
 - The solution must be able to be implemented within one year.
 - The solution must have a proven track record.
 - The solution must involve people already employed in the company.
- The team needs to judge each solution against the criteria. In other words, "How well does each solution meet the criteria?"
- The team needs to come to agreement on the best solution.
- The team should discuss the following questions at this point:
 - What are the risks with this solution?
 - What are the opportunities with this solution?

Acting on Solutions

- The next logical step is to develop an action plan. The first task is for the team to decide if an action plan is needed. In many cases, designing an action plan is a good idea, to ensure:
 - People understand what steps need to be taken (What)
 - Who is responsible for taking the action (Who)
 - When each action step needs to be taken (When)
- We know that many good ideas never get implemented, because an action plan was never developed.
- An important step in the problem-solving and decision-making process is to determine if approval is needed, before implementing the proposed solution. If the team needs to get approval before acting, then it is important to provide superiors with the following information:
 - How you arrived at the solution
 - The action plan for implementation
 - Why you have chosen this solution
 - Possible consequences of acting or not acting
- Those responsible for implementing the action plan must have the skills and the motivation to move the solution into action.
- The team must develop a monitoring and evaluation plan that will track the implementation of the solution. Check-in early, in the implementation process, to evaluate the effectiveness of the chosen solution. Make modifications and adjustments as necessary. This means collecting and analyzing data, or information, to determine whether or not the solution is actually working.

Team Problem Solving – Economy Sports Bar

Economy Sports Bar is a popular bar that attracts a large number of young college students, on Wednesday and Saturday nights. Wednesday features a special ladies' night promotion, while on Saturday there is always a live band, and a dance party on-site. All other nights of the week, the bar is relatively quiet and rarely generates complaints requiring a police response.

On these two promotional nights, officers are frequently called, by local residents and bar employees, to handle a variety of problems ranging from noise and traffic complaints, to assaults, DUI's, and large crowds congregating in the street. In the typical response, police officers faced extremely hostile, intoxicated crowds of young college-aged males that often number in the hundreds. The bar had a capacity of 299 people. There are significant safety issues for all involved.

Students often leave the bar after two am in the morning, and walk through a quiet, family-oriented neighborhood, on their way back to the college. Many residents have called city officials, university officials, and the police about the rowdiness, vandalism, noise, and over all general drunkenness.

The college has called together a group of people (police, bar employees, students, residents, and local government officials) to come up with solutions to this problem.

Problem Solving Worksheet – Economy Sports Bar

Stage 1 – Identifying the Problem	Stage 2 – Looking for Possible Solutions
Stage 3 – Agreeing on Solutions	Stage 4 – Acting on Solutions

Team Problem Solving – Hotel Management

At the Oceanside Resort in Maine there is a hotel, restaurant, beach, and horseback riding facility. The resort is located in a small rural town that does not have a large pool of potential employees to draw on. Joe was initially hired to organize the beach activities and horseback riding. Last summer he was reassigned to oversee the hotel services. He has experience working as a supervisor in other resorts, but has no experience managing the housekeeping staff in a hotel. Joe is on the resort's senior management team, and he is a good friend with the general manager.

The furniture in the hotel rooms is very heavy and difficult to move and makes the work physically demanding. All of the maids are women, and it is taking longer to clean the rooms. Customers are complaining about not having access to their rooms when they arrive on site. Joe is not happy with the pace of the work, and he is being tough and bullying some of the employees. In addition, all the hotel employees are paid minimum wage, and they have been told there will be no raises for the next two to three years. Recently, employees are starting to quit because of the low wages, hard work, and the bullying that they are experiencing.

The owner of Oceanside Resort has heard about these issues, and she has gathered a group of employees and respected community members to discuss these problems.

Problem Solving Worksheet – Hotel Management

Stage 1 – Identifying the Problem	Stage 2 – Looking for Possible Solutions
Stage 3 – Agreeing on Solutions	Stage 4 – Acting on Solutions

Problem-Solving Assessment

When your group is struggling with a problem, how do you behave? Reflect on your typical actions while your group is trying to arrive at a solution to a problem.

1. I take the time to really study or define the problem the group is working on. I try to make sure it is thoroughly explored until everyone understands what the problem is.

Never 1 2 3 4 5 6 7 8 Always

2. I ask why the problem exists and explore the causes.

Never 1 2 3 4 5 6 7 8 Always

3. I encourage the consideration of multiple solutions.

Never 1 2 3 4 5 6 7 8 Always

4. I make sure that the group discusses the pros and cons of several different alternative solutions to a problem.

Never 1 2 3 4 5 6 7 8 Always

5. When a group decides upon a solution to adopt and implement, I make certain it is clear what the decision is, who is responsible for action, and the timeframe.

Never 1 2 3 4 5 6 7 8 Always

6. I push for definite follow-up action to check on the effectiveness of implementation.

Never 1 2 3 4 5 6 7 8 Always

7. I consider if the results of the group's work are worth the effort.

Never 1 2 3 4 5 6 7 8 Always

Introduction to Group Decision-Making

Decision Making is the act of choosing between two or more courses of action.

We all have to make decisions all the time in both our personal and professional lives. Some decisions are automatic and actually have become habits that require little thought. For example, driving a car is generally a routine set of predetermined actions. Other decisions are more important, and more complex. They can impact other people and have long-term consequences. Routine decisions do not and should not take a lot of time. Major decisions however require thoughtful research and reflection, and should not be made in haste.

Good decision makers are thoughtful, follow a systematic process, consult others, and they are able to prioritize the importance among all the decisions that have to be made in a given day. They generally have analytical ability, conceptual ability, intuitive judgment, tolerance, open-mindedness, and a positive self-image.

Having structures and processes for decision-making is important for teams to function effectively. The more strategies and tools you have in your repertoire, the more valuable you will be to the team and the company.

Systematic decision-making can be hard work, particularly when you are dealing with complicated situations. It can be tempting to take shortcuts and to look for an easy solution. In the long run, good decision-making strategies and habits will pay dividends in both your personal and professional life. As you work on your decision-making capabilities, you will gain greater self-confidence in your critical thinking skills.

Decision-Making and The Brain

Neuroscientists are currently conducting fascinating research focused on the serious effects of too much information and too many decisions. Every day we are faced with making hundreds of decisions, many of which are insignificant or unimportant, however, we are also expected to make many important decisions that require our undivided attention and mental alertness. What neuroscientists are discovering is that many people are experiencing the stresses and strains of information overload. This “information overload” is caused primarily by the fast-paced, high technology pressures that constantly surround our personal lives and our workplaces. The key question is, “How do we cope and even thrive in this high tech, fast-paced world?”

In his book *“The Organized Mind,”* neuroscientist Dr. Daniel Levitin presents a compelling case for why it is even more important to think straight in an age of information overload. To compound the problem of too many decisions and too much information, the process of decision-making is naturally difficult for us because it involves uncertainty. We don’t know the future and what will really happen as we make decisions.

Neuroscientists help us understand that the brain has difficulty separating trivial information from the important information, and all this thinking to sort out the trivial from the important taxes our brainpower. Research also suggests that making a series of meaningless decisions can lead us to poor impulse control, and a lack of judgment about the next decision. Levitin suggests that it is almost as if our brains are wired to make a certain number of decisions in a day, and once we reach that number we can’t make any more decisions, or our ability to make good decisions gets worse.

A central conclusion coming from the research in neuroscience is that our brains do have the ability to process all the information coming in, but at a cost. And, the cost is that individuals are feeling more and more overwhelmed, unproductive, unmotivated, and just plain tired as

they struggle to make more and more decisions. We have also learned that the brain has attention and memory limits. The process and capacity of the conscious mind has been estimated at about 120 bits of information per second. In other words, this is the brain's speed limit, or its ability to pay conscience attention so information can get recorded and stored in our memory. For example, one person talking to us takes 60 bits of information per second, which means we can barely understand two people talking to us. No wonder we are feeling overwhelmed with information overload. We also know, humans tend to shut down their decision-making processes when we feel overwhelmed.

So what does this all mean when we think about the challenges of making decisions? It means more than ever that individuals must learn how to think straight and approach decision-making in a very structured and systematic way. It also means people need multiple strategies for making difficult decisions, and to help them sort out what is trivial and what is important, so we don't waste our time and energy. Also, it requires us to shift our decision-making from our brain to the external world. For example, it is wise to make a list when going to the grocery store, rather than trying to hold all the information in your memory. These strategies can help us reach our goal of making the best decisions possible.

Guidelines for Group Decision-Making

Include	Include a balance of talents in the group, who have diverse abilities – idealists and practical thinkers, critical and creative thinkers, action-oriented and reflective team members.
Limit	Limit the size of the group. More than six to eight participants is likely to inhibit the effective exchange of ideas. Group size is usually dependent on the nature of the issue.
Hold	Hold the meeting in a neutral place. The room should be attractive, comfortable, and without distraction. It should have materials to record group thinking and decision-making.
Encourage	Encourage open-mindedness and insist that everyone listen carefully to each other. Ask questions to gain understanding, rather than criticizing other’s ideas.
Clarify	Clarify any misunderstandings or concerns as soon as possible. If you are confused, speak up as you may not be the only one. Check for understanding by using statements like: “Am I correct in understanding ...?” or “I need something clarified.”
Control	Control people who are dominating. Invite other opinions and promote the sharing of airtime, so everyone gets a chance to share their views and ideas.
Downplay	Downplay self-promotion. It is important to remember that reaching the best decision is the paramount goal. You want to leverage the expertise of everyone on the team, and get quality participation.
Be Prepared	Be prepared to handle clashes and competition. Point out that no decision will be made until all the different ideas and suggestions have been presented. Depending on the nature of the disagreement, another meeting may need to be scheduled, where more information is provided.
Be Suspicious	Be suspicious of agreement that comes too quickly. If you rush to a quick decision, you may have overlooked factors and have made the wrong decision, which could have negative consequences.
Keep a Record	Keep a record of what the group has accomplished, decisions made, and what tasks and next steps have been agreed to. Set deadlines to ensure that there is follow through.
Schedule Another Meeting	Schedule another meeting when agreement can’t be reached in one session. Don’t settle for a decision just because time is running out. It is best to give think time and reconvene.

Reverse Weight Prioritization

1. Each person selects their top 5 choices.
2. Each person ranks their:
 - 1st choice "5"
 - 2nd choice "4"
 - 3rd choice "3"
 - 4th choice "2"
 - 5th choice "1"
3. Individual choices are summarized on the attached chart (summary sheet).
4. Rows are totaled (across) to determine priorities.
5. Discussion is held on the group choices.

Workplace Scheduling Options

Choices	Individual	Small Group	Large Group	Priority
1. Early start 6 am – 3 pm				
2. Five day work week 8 am – 5 pm				
3. Four day week – 10 hour days				
4. Early start 7 am – 4 pm				
5. Work through lunch 7 am – 3 pm				
6. Three days 1 st week (12 hrs/days) Four days 2 nd week (11 hrs/days)				
7. Two weeks on / two weeks off				
8. Shift work – day 8 am – 4 pm and night 4 pm – 12 pm				
9. Early start 5 am – 2 pm				

- Complete individual scoring.
- Total small group scores for each choice.

Multi-Voting

Where would you like to travel for a team retreat?

	Round 1	Round 2	Round 3	Round 4
New York City				
Paris				
London				
Los Angeles				
Seattle				
Chicago				
Rome				
Dublin				
Munich				
Boston				

Problem Solving Circle

- Form groups of four or five.
- One person describes a problem to the group.
- The person on the right serves as recorder.
- Group members ask clarifying questions.
- Each group member offers suggestions in a round-robin fashion.
- The recorder keeps notes, on the suggestions, for the problem presenter.
- Assign 5-8 minutes per problem. For more complex problems you can extend the time limit.

The next person states a problem ... repeat the process

Now – Next – Future

Now-Next-Future is a strategy for making decisions and setting priorities. It is a way to help a group of people come to an agreement on a three-stage plan of activities or steps.

Consider the following list of tasks. Discuss the tasks and come to an agreement about which tasks you will do first (Now), second (Next), and third (Future) in a job search. You can only put three tasks in Now column and three tasks in Next column. The remaining four go in the Future column.

Job Searching

1. Develop a resume
2. Identify a sector you are interested in
3. Organize job shadowing
4. Talk to people in the field or within your area of interest
5. Apply for a student loan
6. Plan a job search strategy
7. Research community college programs
8. Consult with a career counselor
9. Practice interviewing
10. Research about job opportunities in the area

Now – Next – Future

Now	NEXT	FUTURE

Stepladder Technique

The Stepladder Technique is a step-by-step approach that manages how members enter the decision making group. It helps you ensure that all members of a group participate and are heard. It allows everyone to hear many different viewpoints before reaching a final decision.

The Stepladder Technique has five basic steps. Here's how it works:

Step 1: The supervisor or meeting facilitator sends a task or problem by email to all members in advance of a decision-making meeting. Individuals independently think about what needs to be done and come up with a solution to the problem. The supervisor schedules times for different group members to join the conversation.

Step 2: Two group members (John and Mary) meet and discuss the problem for ten minutes.

Step 3: Susan joins John and Mary and presents her ideas. Next, John and Mary share their solutions. Then, the three discuss the options together.

Step 4: Martin joins the other three and presents his ideas. Next, John, Mary, and Susan share their solutions. Then, the four discuss of all the ideas together. Continue the process until all members have joined the group and presented their ideas.

Step 5: Reach a final decision only after all members have been brought in and have had the opportunity to present their ideas.

Step Ladder Activity – High School Reunion

You are on a committee that is organization a 10-year high school reunion. Your committee is responsible for organizing the activities for the two-day event. There will be approximately 400 people attending.

In a survey done last year when the idea of a 10-year reunion, members of the 2006 graduating class were asked if they were interested in a gathering and what activities they wanted in the program. There was an enthusiastic response to the idea of a reunion, and a large number of the individuals surveyed are planning to attend. Also, respondents indicated they would like opportunities to engage in a range of activities including golf, hiking, touring the school, meeting the teachers, games and competitions, gathering in smaller groups (music, sports, yearbook, environmental club, student council, student advisory). They also wanted an organized social with a dance.

Hybrid Technique

Step 1 – Present the problem or issue.

Step 2 – Individuals independently write down their best two ideas or solutions.

Step 3 – Each individual shares their #1 idea with the group in round robin format. Other members can ask clarifying questions, but there is no discussion.

Step 4 – Then, each individual shares their #2 idea with the group. Again, other members can ask clarifying questions, but there is no discussion.

Step 5 – The full list is displayed to the group and a straw vote is taken. Ask participants what they think is the best idea. Sometimes it becomes immediately clear which solution has the most support and the decision is made.

Step 6 – If three or four solutions have support then have a “pro/con” discussion about each of the ideas. Sometimes this leads to the decision.

Step 7 – Voting – if there is considerable disagreement about the best solution you may need to go to a vote. Each person can vote for two of the solutions.

#1 ideas 1. 2. 3. 4. 5.
#2 ideas 6. 7. 8. 9. 10.

Recognition in the Workplace

Results of a recent survey at a local Community College reported that recognition in the workplace is one of the top concerns of faculty members. They are feeling stressed and overwhelmed with increased workloads and class sizes due to budget cutbacks.

The president of the college has called together a group of students to ask for their input and suggestions on what a recognition program should look like.

He wants ideas about how:

- students can recognize faculty
- instructors can recognize one another
- the college can recognize faculty members

Consider the following criteria as you come up with suggestions:

- Is the idea realistic?
- Is it affordable?
- Will the idea recognize many or only a few?
- Will faculty appreciate and participate in this idea?

Students to Faculty	Faculty to Faculty	College to Faculty
1.	1.	1.
2.	2.	2.

Beware of Groupthink

Groupthink occurs when a highly cohesive team's desire for group consensus overrides people's common sense desire to present alternatives, critique a position, or express an opposing opinion. When groupthink is in play, teams fail to evaluate all their alternatives and options. The desire for group harmony effectively drives out good decision-making and problem solving. Often groupthink is driven by a group, working against another group, who are opposed to their goals.

The term "Groupthink," was coined by Irving L. Janis, based on his research findings into why a team reaches an excellent decision one time, and a disastrous one the next. What he found was lack of conflict, or openness to opposing viewpoints, led to poor decisions. This happened because alternatives were not fully analyzed, and because teams did not gather enough information to make an informed decision.

Two well-known examples of Groupthink in action are the Challenger Space Shuttle disaster and the Bay of Pigs invasion. Engineers of the space shuttle knew about some faulty parts months before takeoff, but they did not want negative press, so they pushed ahead with the launch anyway. With the Bay of Pigs invasion, President Kennedy made a decision and the people around him supported it despite their own concerns.

Some symptoms of groupthink include:

Rationalization: Sometimes teams convince themselves that the decision they are presenting is the best one, despite evidence to the contrary.

Peer Pressure: Sometimes team members pressure, or penalize a team member, who has a different opinion or expresses concern about the group decision.

Complacency: Sometimes the group feels like all their decisions are fine, because there is no disagreement from any source.

Moral High Ground: When morality is used as a basis for decision-making, the pressure to conform is even greater, because no individual wants to be perceived as immoral.

Stereotyping: As the group becomes more cohesive and uniform in their views, they can see outsiders as inferior, and they use **perceived** negative characteristics to discredit those who oppose them.

Illusion of Unanimity: Groups sometimes feel the group's decision is unanimous, simply because no one speaks out.

Avoid Groupthink

- Ensure you have a **process** in place for checking the assumptions behind decisions.
- Explore alternatives thoroughly.
- Encourage that ideas are challenged consistently.
- Go back and re-examine alternatives that were rejected.
- Gather information from outside sources.
- Use strategies that facilitate different perspectives.
- Invite critiques from members outside the team.
- Assign someone to record ideas and monitor consensus.
- Be aware of the signs of groupthink.

Groupthink can severely undermine the value of a group's work and, at its worst, it can cost people their lives. On a lesser scale, it can stifle teamwork, and leave all but the most vocal team members disillusioned and dissatisfied. If you're on a team that makes a decision you don't really support, you need to speak up and disagree.

Teams are capable of being much more effective than individuals but, when Groupthink sets in, the opposite can be true. By creating a healthy group-working environment, you can help to ensure that the group makes good decisions, and manages any associated risks appropriately.

CONTINUE – STOP – START

CONTINUE	STOP	START