

Critical Thinking

Critical Thinking Workshops – Course outline

Critical thinking is a foundational skill for decision making and problem solving. Becoming a skilled critical thinker requires knowledge and skills in a variety of subjects and this is not taught as part of our education curriculum.

Learning outcomes

The expected learning outcomes from this critical thinking workshops in brief are:

- Participants learn about the two systems of thinking, and understand why our problem solving and decision making is often flawed because the solutions often spring from System 1 thinking when what is required is system 2 thinking.
- Participants will learn how to Look at problems and decisions from multiple perspectives and considering all relevant dimensions of the decision or issue. They will also learn how to reason from evidence, consider implications, articulate implications, and look at other stakeholder before finalizing a solution, decision, plan or strategy
- They learn about the different types of reasoning we use in our decision making and problem solving. They learn to apply this knowledge to evaluate all the different types of reasoning used by others in their arguments in support of a decision, solution, plan or strategy.
- Participants learn how to develop logically persuasive reasoning and how to present it using the Pyramid principle for maximum logical force
- Participants learn to recognize fallacies and provide mitigation processes to avoid poor judgements arising from cognitive biases

Workshop content outline

1. **Introduction:** We use two different systems of thinking to arrive at conclusions and in decision making. This module Provides a short introduction to the two systems of thinking.

Two systems of thinking

System 1 and System 2

Definition of critical thinking

The relevance and importance of critical thinking

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2. **There are two different elements to critical thinking.** The relationship between the two is the same as between the sciences and engineering. Engineering is an applied science. Similarly applying critical thinking to decision making and problem solving requires skill and expertise in thinking critically. This module outlines what goes into both elements

Two elements of critical thinking

How to think critically about an issue

Elements of How to think critically

How to think critically about an issue

Introducing the critical thinking framework

Illustration of the framework using a case study

*Exercise: Case study analysis applying the Critical thinking framework

3. **At work and in life we many different types of reasoning** to arrive at what to believe and what to do. For evaluating reasoning presented to us, and to also build logically persuasive reasoning, we need to understand all the different types of reasoning used.

Introduction to logical reasoning

- Vocabulary of logical reasoning
- Types of arguments
- Convergent arguments
- General to specific
- Specific to general
- Arguments by analogy
- Causal reasoning

Mapping arguments

Evaluating arguments

- Using the ARG principle to evaluate arguments

4. **There are several all-pervasive linguistic pitfalls** that derail sound reasoning and critical thinking. It is useful to understand what some of these are and how to avoid them.

Clear thinking and communication

- Ambiguity
 - Relative and vague terms
 - Misleading comparisons and misleading graphs
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5. **There are many all-pervasive errors in reasoning that** masquerade as good reasoning. These are called fallacies. We will discuss some of these fallacies

Top fallacies

6. **Our judgements are flawed in certain situations every time.** This is due to errors of cognition and these errors in judgements are called **cognitive biases**. These cognitive biases lead to poor judgements and as a consequence we end up making poor decisions.

Top Cognitive biases

7. In business, research and academics we are often required to analyze and present our analysis or findings in the form of written reports or presentations. Unless these reports are organized in a logical fashion, it is difficult for the reader to quickly grasp the conclusions and the reasoning behind it. This module discusses how to develop logically persuasive communication

Logically persuasive communication

- Structure of logically persuasive communications
- The Pyramid Principle
- Structure of communications using the Pyramid principle

8. **The last module discusses how we can go about applying critical thinking to decision making and problem solving. It is essentially a recap of all the concepts discussed in previous modules. This module also gives some suggestions on how to develop a culture of critical thinking in the organization**

Applying critical thinking

- Using the critical thinking framework
- Getting reportees to adopt elements of the critical thinking framework in analytical tasks, decision making and problem solving
- Avoiding language traps and building strong arguments

*Exercises:

- a. Global confectionery case study is circulated prior to the workshop and participants expected to read the case study. This case study is used to illustrate the application of the critical thinking framework to problems
 - b. Watson Glaser Critical thinking assessment : This assessment is available at costs to participants if they(organization) should want to assess their critical thinking
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- c. In a two day workshop, organizations can select a case study relevant to the group and industry. The participants are organized into groups, and they analyze the case study applying the critical thinking framework and present the analysis using the Pyramid structure
- d. Two day workshops will also feature more interactivity and some exercises after each module.