EGLOBAL SKILL
ACADEMY

EGLOBALSKILL.COM

TRAINING WORKBOOK

Mundo Ducemos

ANALYTICAL POWER: MASTER SKILLS FOR SMARTER DECISIONS

EGLOBALSKILL ACADEMY

WELCOME TO THE PROGRAMME!

Analytical Power: Master Skills for Smarter Decisions

proudly delivered by E-Global Skills Academy. We are delighted to have you join this transformative online learning journey.

Our mission is to equip you with the critical thinking, problem-solving, and data interpretation skills needed to make smarter, faster, and bias-resistant decisions. This programme blends proven frameworks with real-world applications to help you turn complexity into clarity and action.

Throughout the training, you will engage in interactive exercises, case studies, and practical tools designed for immediate workplace impact. Stay curious, participate fully, and use the resources and support at support@eglobalskill.com available to you.

We believe in your potential—embrace the challenge, and let's shape your analytical power into a lasting professional advantage.

Table of Contents

Chapter 1—Critical Thinking

Mini Workshop: Applying 5W1H to Evaluate Assumptions

Materials:

Flipchart or digital whiteboard, markers, sticky notes, printed case scenario.

Objectives:

1. Practise the 5W1H framework (Who, What, When, Where, Why, How) to structure information gathering.
2. Identify hidden assumptions and cognitive biases in a real-world scenario.
3. Develop recommendations grounded in evidence and logical reasoning.

Step-by-Step Facilitation Guide:

1. Divide participants into mixed teams of 4–5. Provide each team with the same short scenario relevant to their sector (e.g., a manufacturing quality issue, a patient safety incident, a customer complaint or a policy failure).
2. Teams use the 5W1H questions to gather all relevant details. Record answers on sticky notes and arrange them on a flipchart.
3. Ask teams to highlight assumptions they made or information that was missing. Encourage them to challenge each assumption using Socratic questioning ("Why do we believe this?", "What evidence supports it?").

4. Each team develops two or three insights or recommendations based on their analysis and prepares a short explanation of the reasoning behind each.

5. Groups present their findings. Facilitate a discussion on how the process of structured questioning helped them uncover biases or overlooked factors. Emphasise that critical thinking is essential for clear, evidence-based decisions in all industries.

Quiz Questions:

1. Define critical thinking and explain why it is important in the workplace.

2. List four characteristics of effective critical thinkers.

3. How does the 5W1H framework support critical thinking?

4. Explain the role of Socratic questioning in challenging assumptions.

5. Describe a common cognitive bias and how it can be mitigated.

Case Study— Investigating Root Causes of Delays and Errors in a Company

Scenario:

A company (choose one: *manufacturing plant*, *hospital*, *service call centre* or *government department*) is facing complaints about delays and errors in its outputs. The leadership team suspects staff negligence. As a newly appointed analyst, you are tasked with investigating the root cause.

Discussion Questions:

1. Using the 5W1H framework, what questions would you ask to collect relevant information?

2. Identify at least three assumptions stakeholders might be making about the cause of the problem.

3. How can critical thinking help you separate facts from opinions in this situation?

Homework

1. Observe a routine process in your workplace or studies (e.g., filling out a form, handling an order). Apply the 5W1H questions to examine the process and write a brief reflection on what new insights you gained.

2. Keep a reflective journal for one week. Each day, note one decision you made and analyse whether you considered alternative interpretations or were influenced by assumptions or emotions.

Chapter 2—Problem Solving

Mini Workshop: Solving the Case with PDCA

Materials:

Whiteboard or virtual board, markers, PDCA worksheets, timer.

Objectives:

1. Practise the Plan–Do–Check–Act (PDCA) cycle on a real-world problem.
2. Identify root causes using the Five Whys and select countermeasures.
3. Compare alternative solutions using a simple impact/effort matrix.

Step-by-Step Facilitation Guide:

1. Present a brief problem relevant to each group's sector: a machine breakdown in manufacturing, long emergency room waits in healthcare, high churn in a service company or a public service backlog.
2. Teams use the Plan stage to define the problem clearly and set a measurable goal.
3. In the Do stage, apply the Five Whys to find potential root causes. Record these on a fishbone diagram.
4. During the Check stage, brainstorm solutions and evaluate them using an impact/effort matrix.
5. In the Act stage, each team selects a solution to implement and outlines a short monitoring plan.

6. Teams share their PDCA cycles. Discuss similarities and differences across industries and emphasise the importance of iterating until the problem is truly resolved.

Quiz Questions:

1. What distinguishes a well-defined problem from an ill-defined problem?

2. Name the four stages of the PDCA cycle.

3. Describe the purpose of the Five Whys technique.

4. List and describe two methods to evaluate alternative solutions.

5. Identify one cognitive barrier that can impede problem solving.

Case Study— Blaming People Without Finding the Real Causes of Problems

Scenario:

A *manufacturing line* suffers a recurring defect rate of 8%, leading to customer returns. The quality manager thinks it is due to operator carelessness. Meanwhile, in a *hospital*, patients complain about long wait times; management blames staff for inefficiency.

Discussion Questions:

1. Formulate the problem statement in a neutral, fact-based way.

2. Use PDCA and Five Whys to identify possible causes beyond operator behaviour.

3. Propose one high-impact solution and explain how you would test its effectiveness.

Homework

1. Identify a minor recurring issue in your workplace or studies. Apply the PDCA cycle to address it. Document each stage and reflect on what you learned.

2. Research a problem-solving method you are unfamiliar with (e.g., TRIZ, design thinking). Prepare a one-page summary of how it works and when to use it.

Chapter 3—Data Analysis

Mini Workshop: Exploring Data for Insights

Materials:

Laptops or tablets, sample dataset (manufacturing output, hospital admissions, customer transactions or government statistics).

Objectives:

1. Practise the six-step data analysis process (Define–Collect–Clean–Analyse–Interpret–Communicate).
2. Use descriptive statistics and simple visualisations to explore patterns.
3. Draw preliminary conclusions and present findings effectively.

Step-by-Step Facilitation Guide:

1. Assign each group a dataset relevant to their industry. Encourage them to define a clear question (e.g., "Which product line is most profitable?" or "What factors contribute to admission rates?").
2. Groups examine and clean their dataset, documenting any assumptions or corrections made.
3. Use pivot tables, charts or basic statistical functions to summarise the data and identify trends.
4. Teams interpret results within the context of their original question, noting limitations or potential biases.
5. Each group prepares a short presentation using a chart or infographic to communicate their findings.

6. Debrief the exercise by highlighting the importance of clear objectives, data quality and effective storytelling.

Quiz Questions:

1. Outline the six steps of the data analysis process.

2. Differentiate between descriptive, diagnostic, predictive and prescriptive analysis.

3. Why is data cleaning essential before analysis?

4. Describe two examples of tools or software used for data analysis.

5. Explain the difference between correlation and causation.

Case Study— Using Data Integration to Improve Customer Satisfaction

A *service company* notices a decline in customer satisfaction scores. Data from call centre logs, satisfaction surveys and sales records are available but have not been integrated. Each department is blaming the other. The CEO wants insights to make decisions.

Discussion Questions:

1. Propose a specific objective for your analysis. What question are you trying to answer?

2. Describe how you would collect, clean and integrate the different data sources.

3. Identify two types of analysis you would perform (descriptive, diagnostic, predictive or prescriptive) and the expected outcome.

Homework

1. Using an open-source dataset (e.g., from Kaggle, WHO, or government portals), perform a simple descriptive analysis. Summarise your findings in one page.

2. Reflect on the ethical considerations of handling personal or sensitive data in your sector. Write a brief statement outlining the risks and how to mitigate them.

Chapter 4—Root Cause Analysis

Mini Workshop: Digging Deeper with Fishbone Diagrams

Materials:

Flipchart, markers, fishbone diagram template, sticky notes.

Objectives:

1. Practise constructing a fishbone (Ishikawa) diagram to map potential causes.
2. Apply the Five Whys technique to drill down to root causes.
3. Prioritise causes using Pareto analysis.

Step-by-Step Facilitation Guide:

1. Provide each team with a problem statement relevant to their sector (equipment failure, medication error, customer complaint or regulatory non-compliance).
2. Draw the main spine of the fishbone diagram on a flipchart. Label the typical categories: People, Process, Equipment, Materials, Environment, Measurement.
3. Teams brainstorm possible causes under each category, writing them on sticky notes and placing them on the diagram.
4. Select one branch and apply the Five Whys to uncover deeper causes.
5. Use a Pareto chart to prioritise which causes contribute most to the problem.
6. Each team proposes corrective actions addressing the top causes and discusses how to monitor implementation.

Quiz Questions:

1. What are the objectives of root cause analysis?

2. List the four steps involved in conducting an RCA.

3. Name two tools used in RCA and describe their purpose.

4. Why is distinguishing root causes from causal factors important?

5. Give an example of how RCA can be applied in the service industry.

Case Study— Overcoming Building Permit Processing Delays in Government Agency

Scenario:

In a *government agency*, processing of building permits regularly exceeds the mandated 30-day timeframe. Although staffing levels have increased, delays persist. Customers complain about lack of transparency.

Discussion Questions:

1. Draft a clear problem statement for your chosen scenario.

2. Using an Ishikawa diagram, categorise potential causes.

3. Select one cause and apply the Five Whys to reveal the root cause. How would addressing it prevent recurrence?

Homework

1. Identify a recent error or failure in your organisation. Conduct a mini root cause analysis using the Five Whys and prepare a short action plan.

Chapter 5—Logical Thinking

Mini Workshop: Reasoning Puzzles and Argument Mapping

Materials:

Printed logic puzzles or case scenarios, index cards, markers.

Objectives:

1. Practise inductive and deductive reasoning through puzzles and real scenarios.
2. Visualise arguments using diagrams that connect premises to conclusions.
3. Identify reasoning fallacies and correct them.

Step-by-Step Facilitation Guide:

1. Start with a short logic puzzle (e.g., Sherlock Holmes-style deduction) and have participants solve it individually or in pairs.
2. Present a business or public policy scenario. On index cards, write out different premises, evidence and possible conclusions.
3. Teams arrange the cards into a logical flow, creating an argument map. Discuss whether the conclusion follows from the premises.
4. Introduce a twist (e.g., missing data) and ask teams to infer the most plausible explanation (abductive reasoning).
5. Invite groups to identify any fallacies (hasty generalisation, false cause, appeal to authority, circular reasoning) and suggest corrections.
6. Conclude by emphasising the value of structured reasoning in making justified decisions.

Quiz Questions:

1. Differentiate between inductive and deductive reasoning. Provide an example of each.

2. What is abductive reasoning and when is it useful?

3. Describe two common reasoning fallacies and how to avoid them.

4. Why is it important to validate premises in deductive reasoning?

5. How can argument mapping improve logical clarity?

Case Study— Balancing Interests in Introducing Congestion Charges

Scenario:

A *municipal government* must decide whether to introduce congestion charges to reduce traffic. Residents cite high commuting costs; business owners worry about lost customers; environmental groups demand swift action.

Discussion Questions:

1. Identify premises and facts relevant to the decision. Which are certain and which are assumptions?

2. Use inductive reasoning to infer a potential outcome based on observed patterns in other cities.

3. Propose a deductive argument to justify or oppose congestion charges. Are there any hidden fallacies?

Homework

1. Find an opinion piece or advertisement related to your industry. Identify the premises and conclusion and evaluate whether the reasoning is sound.

2. Create a logic tree for a decision you are currently facing (e.g., choosing a new supplier). List your options and the criteria supporting each.

Chapter 6—Communication

Mini Workshop: Turning Data into Stories

Materials:

Sample analysis results, template slides or infographic software, role-play scripts.

Objectives:

1. Practise tailoring messages to different audiences (executives, frontline staff, customers or citizens).
2. Use storytelling techniques and visual tools to communicate complex insights clearly.
3. Develop active listening and feedback skills through role-play.

Step-by-Step Facilitation Guide:

1. Assign each team a dataset summary and a target audience. Task them with creating a two-minute story or infographic that presents key insights.
2. Provide a brief on the audience's needs and background (e.g., executive, nurse, customer service rep, policy maker).
3. Teams present their story or infographic. Observers' role-play the audience and provide feedback on clarity, tone and persuasiveness.
4. Facilitate an active listening exercise: listeners summarise the message back to the presenter, highlighting areas of agreement or confusion.
5. Debrief the exercise by discussing strategies such as simplifying technical jargon, using analogies, structuring messages and inviting questions.
6. Highlight differences in communication needs across manufacturing, healthcare, services and government contexts.

Quiz Questions:

1. Define communication and distinguish between verbal, written and non-verbal forms.

2. Why is audience analysis important when crafting a message?

3. List two strategies for communicating technical information to non-technical stakeholders.

4. What barriers can hinder effective communication?

5. Provide one recommendation for improving communication in your industry.

Case Study— Presenting Data Analysis Findings to Diverse Audiences

After completing a data analysis project, a team must present their findings to a diverse audience: *senior executives*, *frontline staff* and *external customers*. Each group has different priorities and levels of technical knowledge.

Discussion Questions:

1. How would you adapt the message for each audience segment?

2. What visuals or narratives could help convey the main insights without oversimplifying?

3. Identify potential misunderstandings and describe how you would handle questions or objections.

Homework

1. Prepare a one-page communication plan for a project at work or in your studies. Specify the audience, key messages, channels and timing.

2. Observe a meeting or presentation in your organisation. Note examples of effective communication and areas for improvement.

Weekly Planner

Week 1

Monday:

Tuesday:

Wednesday:

Thursday:

Friday:

Week 2

Monday:

Tuesday:

Wednesday:

Thursday:

Friday:

Week 3

Monday:

Tuesday:

Wednesday:

Thursday:

Friday:

Week 4

Monday:

Tuesday:

Wednesday:

Thursday:

Friday:

Week 5

Monday:

Tuesday:

Wednesday:

Thursday:

Friday:

Week 6

Monday:

Tuesday:

Wednesday:

Thursday:

Friday:

Notes

Notes

Notes

Notes

Notes

EGLOBALSKILL.COM

Dedication of E-Global Skill Academy to Participant Growth

Your Journey Continues: Professional Development Commitment

We Lead The World

Follow us on:

Formal Disclaimer/Confidentiality Notice
This training workbook contains confidential and proprietary material © 2025 E-Global Skill Academy. All rights reserved. This document is strictly designated for internal use only and is not authorised for external distribution. The content herein represents a proprietary training resource that must not be reproduced, shared, or transmitted without explicit written permission. Any unauthorised reproduction or dissemination of this material is expressly prohibited and may result in legal consequences.

From Training To Leading

Your Professional Transformation Begins

EGLOBAL SKILL
ACADEMY

: contact@eglobalskill.com
: **eglobalskill.com**