PROBLEM SOLVING

Choosing the Right Solutions with AI as Your Coach

Learning Impact Statement: Participants will enhance decision-making and collaboration by applying a structured problem-solving process and using AI as a thinking partner to clarify challenges, engage stakeholders, and design effective, context-driven solutions that address root causes—not just quick fixes.

Skill Focus Areas:

Problem Statement Canvas	Root Cause Analysis
Stakeholder Mapping	Complexity Awareness
Brainstorming & Idea Generation	Solution Assessment
Implementation Readiness	Sustainability & Learning

REFLECTION PROMPTS:

- How often do I jump straight to a solution before defining the problem?
- What risks have I seen when simple solutions are applied to complex problems?
- Who do I typically involve in problem solving—and who gets left out?

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1. PROBLEM STATEMENT CANVAS

Learners will develop clear, specific, and measurable problem statements by recognizing and refining vague or overly narrow definitions to support effective problem-solving.

AI Prompt Example: Rewrite this vague problem statement, "Student engagement is low" into a specific, measurable problem definition. Help me find who is affected, what the gap may be, why it matters, and refine the problem definition.

Who is Affected	What's the Gap	Why it Matters	Refined Problem Definition

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2. ROOT CAUSE ANALYSIS

Learners can use the 5 Whys and Fishbone Diagram techniques to identify root causes of problems by asking targeted questions and categorizing contributing factors across key domains.

- 5 Whys ➔ Ask "why" repeatedly until the root cause emerges
- Fishbone Diagram ➔ Categorizes causes (process, people, tools, environment, policy)

AI Prompt Example: Guide me through a 5 Whys exercise on why staff are missing deadlines. Help me separate symptoms from root causes.

Problem	
Why #1	
Why #2	
Why #3	
Why #4	
Why #5	
Root Cause	

3. STAKEHOLDER MAPPING

Learners can identify key stakeholders and those impacted by decisions and apply strategies to engage them meaningfully while fostering psychological safety for inclusive participation.

AI Prompt Example: Given this problem, [describe problem], suggest stakeholders I may be overlooking. Recommend how to involve them in solution design.

Stakeholders I Usually Involve	Stakeholders I May Overlook	How I'll Engage Them in the Solution

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4. COMPLEXITY AWARENESS

Learners can distinguish between simple, complicated, complex, and chaotic problems, and apply appropriate facilitation strategies to define and address each type effectively.

- Simple ➜ clear cause/effect; best practices apply
- Complicated ➜ may need expert analysis
- Complex ➜ multiple interacting factors, may need experimentation
- Chaotic ➜ act quickly to stabilize before solving

AI Prompt Example: Classify this problem as simple, complicated, complex, or chaotic [insert problem]. Suggest the best approach to address it.

My Problem Type	Best Approach to Address Problem

5. BRAINSTORMING & IDEA GENERATION

Learners can generate and organize ideas using Brainwriting, SCAMPER, and Affinity Mapping to support creative problem-solving and collaborative innovation.

- Brainwriting ➜ silent idea generation before discussion
- SCAMPER ➜ Substitute, Combine, Adapt, Modify, Put to Other Uses, Eliminate, Reverse
- Affinity Mapping ➜ group similar ideas to find themes

AI Prompt Example: Generate 10 creative ideas based on these root causes [insert root causes]. Cluster them into themes I can share with my team.

My Creative Ideas	My Themes

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6. SOLUTION ASSESSMENT

Learners can explore how to prioritize and evaluate solutions using the Impact vs Effort Matrix and Weighted Criteria Matrix to support strategic, inclusive, and mission-aligned decision-making.

- Impact vs. Effort Matrix ➔ prioritize high-impact, low-effort solutions
- Weighted Criteria Matrix ➔ score solutions for feasibility, sustainability, inclusivity, alignment with goals

AI Prompt Example: Score these 3 solutions against feasibility, sustainability, inclusivity, and alignment with university/department goals. [Insert 3 solutions].

3 Solution Options	Criteria Scoring	Best Solution to Try Out

7. IMPLIMENTATION READINESS

Learners can use Force Field Analysis to identify and evaluate forces that support or resist a proposed solution, enabling more strategic planning and change management.

AI Prompt Example: List barriers and enablers for implementing this solution [insert solution]. Suggest strategies to strengthen enablers and reduce barriers for success.

Supporting Forces	Resisting Forces	My Strategies

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8. SUSTAINABILITY & LEARNING

Learners can explore how to use the After Action Review (AAR) tool to reflect on implementation outcomes by identifying what worked, what didn't, and determining which practices to sustain or improve.

AI Prompt Example: Create 5 reflection questions for my team to evaluate whether this solution solved the root problem.

What Worked	What Didn't Work	What We'll Sustain	What We'll Change

ACTION PLAN:

My Top 3 Takeaways

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1 Strategy I'll Apply Immediately

How I'll Continue Using AI as My Problem Solving Coach

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