Haygood Consulting Co.

Problem Solving and Decision Making

Study Guide

Soft Skills Coursework

Created by Haygood Consulting Co.

Problem Solving and Decision Making

Mastering Problem-Solving and Decision-Making

Analytical Thinking

- **Definition**: Analytical thinking is like being a detective. It means looking at a problem really carefully, breaking it down into smaller parts, and finding patterns or clues to understand what's going on.
- **Example**: If you have a puzzle, analytical thinking would be like examining each piece closely, seeing how they can fit together, and figuring out the picture they make.

Curiosity

- **Definition**: Curiosity is all about wanting to learn more and asking lots of questions to get to the bottom of things.
- **Example**: When you see a machine for the first time, being curious means you want to know how it works, what each part does, and why it's important.

Defining the Problem

- **Definition**: Before you can solve a problem, you need to know exactly what the problem is. Defining the problem means describing it clearly and understanding what needs to be fixed.
- **Example**: If your bike has a flat tire, the problem isn't just that the bike isn't working. The specific problem is that the tire needs air or a patch.

Gathering Information

- **Definition**: This means collecting all the facts and data you need to understand the problem better.
- **Example**: If you're trying to save money, you gather information by tracking how much you spend and what you spend it on.

Identifying the Root of the Problem

- **Definition**: This is like being a plant doctor. You don't just look at the leaves; you dig down to see if something is wrong with the roots. For problems, you look deeper to find the real cause.
- **Example**: If your plant is wilting, you don't just give it more water. You check if it's getting enough sun or if the soil is right.

Evaluating Solutions

- **Definition**: Once you have some ideas for solving the problem, you need to think about which one is the best. Evaluating solutions means comparing them to see which one works best.
- **Example**: If you're trying to pick a new game to play, you think about which one looks the most fun, which one you can learn quickly, and which one your friends will like too.

Logical Reasoning

- **Definition**: Logical reasoning is using clear and sensible thinking to figure out the answer to a problem.
- **Example**: If you have five apples and you give away two, logical reasoning tells you that you have three apples left.

Cultivating Traits

- **Definition**: To get better at analytical thinking, you practice certain habits like being curious, paying attention to details, and thinking logically.
- **Example**: You might start by asking more questions in class or when you learn something new, instead of just accepting it.

Bottleneck

- **Definition**: In problem-solving, a bottleneck is a point where things get stuck or slowed down, just like how the neck of a bottle is narrower than the rest of it.
- **Example**: If everyone in your house is trying to leave through the front door at the same time in the morning, the doorway becomes a bottleneck.

Mastering Analytical Thinking

- **Definition**: Getting really good at analytical thinking means you can take a complex problem, break it down, and find the best solution.
- **Example**: If your team has a big project, you help figure out what needs to be done first, who should do it, and how to make sure it's finished on time.

By learning and practicing these concepts, you'll become a pro at solving problems and making smart decisions. It's all about thinking carefully, asking questions, and choosing the best solution based on what you know. Remember, every problem has an answer; you just have to find it!

Lesson 2:

Lesson 2: Decision Frameworks

Decision Frameworks

- **Definition**: Decision frameworks are like recipes for making choices. They give you a step-by-step process to follow so you can make good decisions, especially when the choice is tough or complicated.
- **Example**: If you're trying to decide whether to buy a new car, a decision framework might have you list the pros and cons, think about how much you can spend, and consider how often you'll use the car.

Cost-Benefit Analysis

- **Definition**: This is a way to compare the benefits of a decision against the costs. It helps you see if the good things outweigh the bad things.
- **Example**: If a new phone costs a lot but has lots of new features, a cost-benefit analysis would help you decide if it's worth the money.

Defining Decision Criteria

- **Definition**: Before you make a decision, you need to know what's important to you. Defining decision criteria means listing what you need and want from the choice you're making.
- **Example**: If you're choosing a new school, your criteria might include how close it is to home, if your friends go there, and what subjects you can study.

Systematic Evaluation

- **Definition**: This means looking at each option carefully and in the same way. It's like judging a baking contest where you rate each cake on taste, looks, and how hard it was to make.
- **Example**: If you're picking a vacation spot, you might rate each place on cost, activities, and how relaxing it is.

Informed Choices

- **Definition**: Making an informed choice means you've thought about all the information and made a decision based on what you know.
- **Example**: If you're voting for class president, an informed choice would be picking the person with the best plan for the school, not just your best friend.

Decision Trees

- **Definition**: A decision tree is a diagram that shows you all the possible outcomes of your decision. It's like a map that helps you see where each choice could lead.
- **Example**: If you're deciding whether to play soccer or basketball, a decision tree would show you what could happen with each sport, like making new friends or getting better at running.

Pareto Analysis

- **Definition**: Pareto analysis is a way to figure out which problems or solutions will have the biggest impact. It's based on the idea that a few things are usually more important than the rest.
- **Example**: If you have five chores but only time for two, Pareto analysis would help you pick the two that are most important.

Exploring Decision Frameworks

- **Definition**: Learning about different decision frameworks helps you understand how to use them. It's like trying out different tools to see which one works best for the job.
- **Example**: If you're learning to cook, exploring decision frameworks is like trying out different recipes to see which one makes the best cookies.

Systematic Approach

- **Definition**: A systematic approach means doing things in an ordered, methodical way. It's like following steps A, B, C, and D to get to your goal.
- **Example**: If you're building a model airplane, a systematic approach would have you read the instructions and put each piece together in the right order.

Improving Decision Quality

- **Definition**: The goal of learning decision frameworks is to make better decisions. It's about using what you know to pick the best option.
- **Example**: If you're trying to save money, improving decision quality might mean choosing to cook at home instead of eating out.

By understanding and using decision frameworks, you can make smarter choices that are good for you and fit with what you want. It's all about thinking things through and picking the path that leads to the best outcome. Remember, good decisions are the ones that help you move forward and feel happy with where you end up!

Lesson 3:

Lesson 3: Creative Problem-Solving

Creative Problem-Solving

- **Definition**: Creative problem-solving is a way of looking at problems in a new light. It's about using imagination and innovation to find unique solutions to challenges.
- **Example**: If you're stuck in traffic and late for an appointment, creative problem-solving might lead you to use a map app to find a new route you hadn't considered before.

Divergence

- **Definition**: Divergence in problem-solving means thinking broadly and coming up with many different ideas or solutions.
- **Example**: When planning a birthday party, divergence would be brainstorming a long list of possible themes, locations, and activities without immediately ruling anything out.

Convergence

- **Definition**: Convergence is about narrowing down those broad ideas to find the best solution.
- **Example**: After coming up with many ideas for your science project, convergence would be choosing the one that is most interesting and doable within your time and budget.

Balancing Analytical and Creative Thinking

- **Definition**: This means using both logical, step-by-step methods and imaginative, out-of-the-box ideas to solve a problem.
- **Example**: If you're trying to save money, you might use analytical thinking to budget your expenses and creative thinking to come up with ways to make extra cash.

Mind Mapping

- **Definition**: Mind mapping is a visual way to explore all the different aspects of a problem or idea. It's like drawing a map of your thoughts.
- **Example**: If you're writing a story, you might create a mind map to explore different plot points, characters, and settings.

Reverse Thinking

- **Definition**: Reverse thinking means looking at a problem from the opposite perspective or asking what if the opposite were true.
- **Example**: If you're trying to improve customer satisfaction, reverse thinking might lead you to consider what would make customers really unhappy and then do the opposite.

Role Reversal

- **Definition**: Role reversal is when you put yourself in someone else's shoes to see a problem from their viewpoint.
- **Example**: If you're a teacher trying to understand why a student is struggling, role reversal would be imagining you're the student and thinking about what might be causing you trouble.

Collaborative Challenge

- **Definition**: A collaborative challenge is when a group works together, using both analytical and creative approaches, to solve a problem.
- **Example**: If your community is trying to reduce waste, a collaborative challenge might involve residents, businesses, and local government brainstorming and implementing recycling initiatives.

Generating a Wide Range of Ideas

- **Definition**: This is about not settling for the first idea that comes to mind but instead coming up with many different ideas.
- **Example**: If you're trying to come up with a new product, you don't just think of one; you come up with a whole list of possibilities.

Applying Creative Problem-Solving to Real-World Issues

- **Definition**: This means using creative problem-solving techniques to tackle actual problems we face in our lives or work.
- **Example**: If a city has a problem with traffic congestion, applying creative problem-solving might involve looking at how other cities have successfully reduced traffic and adapting those ideas.

Combining Analytical and Creative Thinking

- **Definition**: This is about using a mix of logical analysis and creative brainstorming to come up with the best solution to a problem.

- **Example**: If you're trying to decide on a new career path, you might analyze job market data (analytical thinking) and also imagine different future scenarios for yourself (creative thinking).

Outcome of Creative Problem-Solving Session

- **Definition**: The outcome should be innovative and practical solutions that come from looking at a problem in a new way.
- **Example**: After a brainstorming session on how to increase sales, you might come up with a unique marketing campaign that no one has tried before.

Objective of Creative Problem-Solving

- **Definition**: The goal is to solve complex problems effectively by combining thorough analysis with innovative thinking.
- **Example**: If a business is failing, the objective would be to figure out why (using analytical thinking) and then come up with creative strategies to turn it around.

By mastering creative problem-solving, you can find solutions that are not only effective but also exciting and new. It's about thinking differently, being open to new ideas, and combining that with solid reasoning to solve problems in the best way possible. Remember, creativity is not just for artists; it's a tool we can all use!

"We cannot solve problems with the kind of thinking we employed when we came up with them" **-Albert Einstein-**