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TriMetrix®HD Theoretical Problem Solving

Theoretical Problem Solving

A person's ability to apply problem solving abilities in a mental, or abstract, scenario; the ability to create, operate, and identify problems in a hypothetical situation, then to manufacture the appropriate response to resolve the problem.

Why is this skill important?

People who have good Theoretical problem solving abilities are capable of identifying future problems and formulating the appropriate steps that would be necessary to correct them. These people are comfortable enough with their abilities to envision situations that they are comfortable taking action on decisions arrived at through abstract reasoning.

Someone who has good Theoretical problem-solving capabilities not only creates new solutions, but also is resourceful about taking existing systems and solutions and improving them. There are some people who seem to have highly developed creativity —the people who always seem to be thinking of new ideas or making processes better. While some people are naturally more creative than others, there are many things you can do to develop your ability to think and act innovatively, in turn developing your Theoretical Problem-Solving Skills.

In contrast, people who aren't as good at Theoretical Problem Solving will have difficulty in picturing future situations and will be unwilling to commit to a course of action until they have collected what they believe is adequate data. These individuals need some sort of concrete proof that the direction in which they are headed is the correct one, and they require more time and information before making a decision they can act on.

If you develop your mental flexibility, you will find that you are much better at understanding and synthesizing new information, and that a broader range of ideas comes to you when you are considering how to solve a problem. Of course, policies and procedures have their place sometimes following them strictly is essential. But often, people who hold tightly to policies and established norms overlook the most creative and beneficial ideas.

Good Theoretical Problem Solvers allow themselves to be as creative and flexible as possible they don't talk themselves out of any ideas prematurely, but they write them all down for further consideration. They are able to make hypothetical solutions to hypothetical problems, which makes them better prepared for new situations that arise.

What are skills associated with Theoretical Problem Solving?

Someone who has mastered skills associated with Theoretical Problem Solving:

- Notices unique patterns, variables, processes, systems, or relationships.
- Synthesizes and/or simplifies data, ideas, models, processes, or systems.
- Challenges and/or modifies established theories or ways of doing things.
- Develops and tests new theories to explain or resolve complex issues.
- Applies unorthodox theories and/or methods.
- Imagines new or revolutionary concepts or methods of managing things.

How do you develop your own abilities in Theoretical Problem Solving?

- Teachyourself to be more flexible. Consider alternative solutions to the ones you first think of.
- Engage in open-minded and uncritical brainstorming in the initial stages of solving a problem. Consider multiple perspectives and attempt to come up with several different solutions to each problem.
- Don't rule out existing ideas or practices. Figure out what worked in the old practices and be sure to use it effectively in the new one.
- When you come upon a new problem, think about how it may be similar to old problems. What components of the new problem have you seen before?
- If you experience "creative block," acknowledge it, but work toward finding a new approach.
- Talk to a peer about your problem—brainstorming with others can be a great way to loosen your mind.
- Make a habit of exposing yourself to new ideas. Read trade publications and attend seminars in your field. Choose a subject and learn everything there is to know about it.
- Brainstorm.Write down every idea, regardless of how wild it sounds.
- Combine people of different backgrounds and disciplines to work on solving a problem.
- Each time you think of a good idea related to your job, write it down and keep it in a file dedicated to good ideas.
- Challenge yourself and others to be creative. Don't just accept the traditional way of doing something.

• Imagine an "ideal world" when you are trying to come up with solutions or new ideas. In an ideal world, what would happen? How would things work?
• Try diagramming or drawing problem situations on paper or a white board. Drawing, rather than writing, may help you think differently.
• Be open to the possibility of changing your mind. Just because you have defined a solution in your mind doesn't mean there isn't a better one.
• Take a step away from the problem you are trying to solve and return to it later. Sometimes a change in location or a day away can help you see new things.
• Don't limit yourself. Even if the first few options you think of seem far-fetched, consider them carefully—what if they are the best options, or what if you can use parts of them to solve your problem?
• Let other people be creative. You may learn from their imaginative ideas or solutions. Encourage them to share with you, and help them brainstorm when they need to.
• Be decisive. If you are convinced of the solution you have developed, be confident enough to implement it effectively.
• Know when to take risks. Sometimes rules must be followed, but a lot of the time, you can take intelligent risks based on careful problem analysis or forward thinking.

Theoretical Problem Solving

Activities

Activity 1: Envisioning the Outcome

Think about three problems that you or your department currently face at work. First, define the problems as clearly as possible, then practice your logical thinking skills by listing the negative forces that may prevent a positive outcome and the positive forces that encourage it. Then, analyze the chart you make to determine how to strengthen the positive attributes.

Problem #1: _____

Negative Factors	Positive Factors

Problem #2: _____

Negative Factors	Positive Factors

Problem #3: _____

Negative Factors	Positive Factors

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Activity 2: Brainstorming

Organize a brainstorming session, inviting project team members for a new project you are working on or trusted peers to discuss a new idea you are formulating or a problem that needs resolution. Be sure to write down all ideas people come up with later, you can identify which ideas are truly worth pursuing in the 'real world.'

Project Title: _____

Whom to Invite

1. _____
2. _____
3 _____
4 _____
5 _____
6 _____
7 _____

Activity 3: Changing Processes

Think of a process at your workplace that is inefficient or impractical. Or think of a rule that is so outdated or unreasonable that everyone flouts it. Begin brainstorming about how you can change the process or amend the rule.

1. What about the process or idea is wrong?
2. Why was it instigated? Why was the process or rule designed in the first place?
3. Who developed it? What was his motivation for doing so?
4. What are three possible alternative processes or solutions? (Be as creative as you can here, don't rule out any idea, and let your mind wander.)

When you have come up with at least three other ideas, talk them over with a trusted co-worker or friend. Spend some time with that person discussing the merits of each alternative, and write down any new ideas that result from your conversation.

Thinkabout the people youwork with.

1. Is there someone you know who seems to be able to handle anything that comes his or her way?
2. Is there someone you know who always seems to get blindsided by new problems?

Observe these two people carefully over the next few weeks. See if you can get the opportunity to work with both on a project. What sets them apart from one another? What can you learn from each?

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