



PROBLEM SOLVING SKILLS

THE GAME OF THE SIX GLASSES

The challenge: rearrange glasses so that the glasses alternate full and empty. However, you must do this by moving only one glass.



Solution

Hold the second full glass and pour its contents into the fifth cup (counting from left to right) and replace the glass in place 2.



What is the problem?



- A doubtful or difficult matter requiring a solution.
- Something hard to understand or accomplish or deal with.

Problem types:

Different Types of Problems Different Types of Solution

Kind of Problem	Nature of Appropriate Problem-Solving Activity
Problem with unknown cause	Finding the cause
Problem with known or irrelevant cause	Generating ideas that could fix the problem
Decision between solutions with certain outcomes	Deciding on one best solution
Decision between solutions with uncertain outcomes	Deciding which solution has the highest probability of success
A jumbled list	Determining the priority order

All problems have two features in common: goals and barriers.

□ Goals

Problems involve setting out to achieve some objective or desired state of affairs and can include avoiding a situation or event .

□ Barriers

If there were no barriers in the way of achieving a goal, then there would be no problem. Problem solving involves overcoming the barriers or obstacles that prevent the immediate achievement of goals.

What is the problem solving process?

The process of identifying the problem, prioritizing, selecting alternatives for a solution and evaluating the outcomes.

Problem solving tools:

- Brain storming:
- Brainstorming is used to generate a large number of creative ideas when problem solving and achieving objectives. It can even be used for decision making.
- **Brainstorming Techniques Guidelines**
- 1. Brainstorming take from a few minutes to a few hours. For big problems or projects it may be done several times and over days, weeks or months.

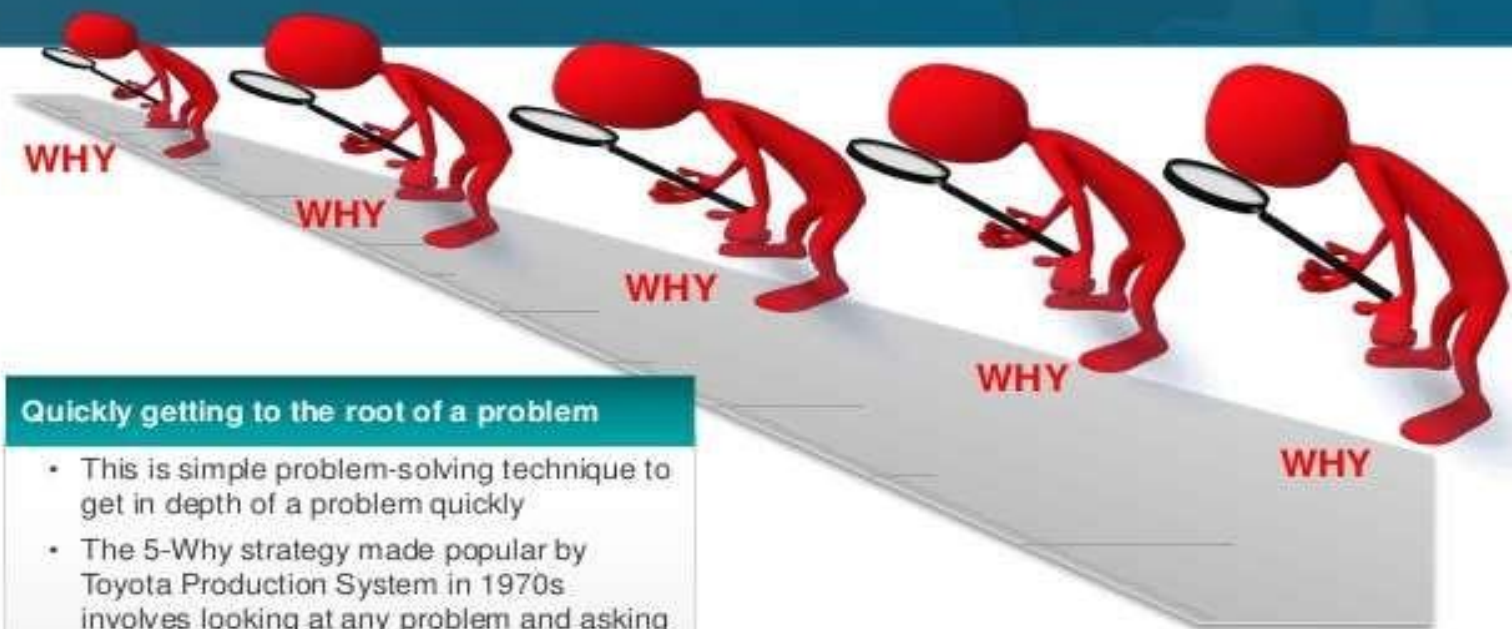
Cont. Brain storming :

- ❑ 2. Come up with as many ideas as possible. The more the better.
- ❑ 3. Don't judge any of your ideas at this time.
- ❑ Later you can use the affinity diagram to sort out your ideas.
- ❑ It is important to note that one of the fastest way to “kill” brainstorming is to judge ideas too quickly. Criticism puts a choke hold on allowing the Right Brain Left Brain Crossover to flourish

5 WHYS

- The 5 Why's is a simple problem-solving technique that helps you to get to the root of a problem quickly.
- The technique was originally developed by Sakichi Toyoda.
- The 5 Why's was used within the Toyota Motor Corporation during the evolution of its manufacturing methodologies and became very popular in the 1970s by the Toyota Production System.

5 Whys



Quickly getting to the root of a problem

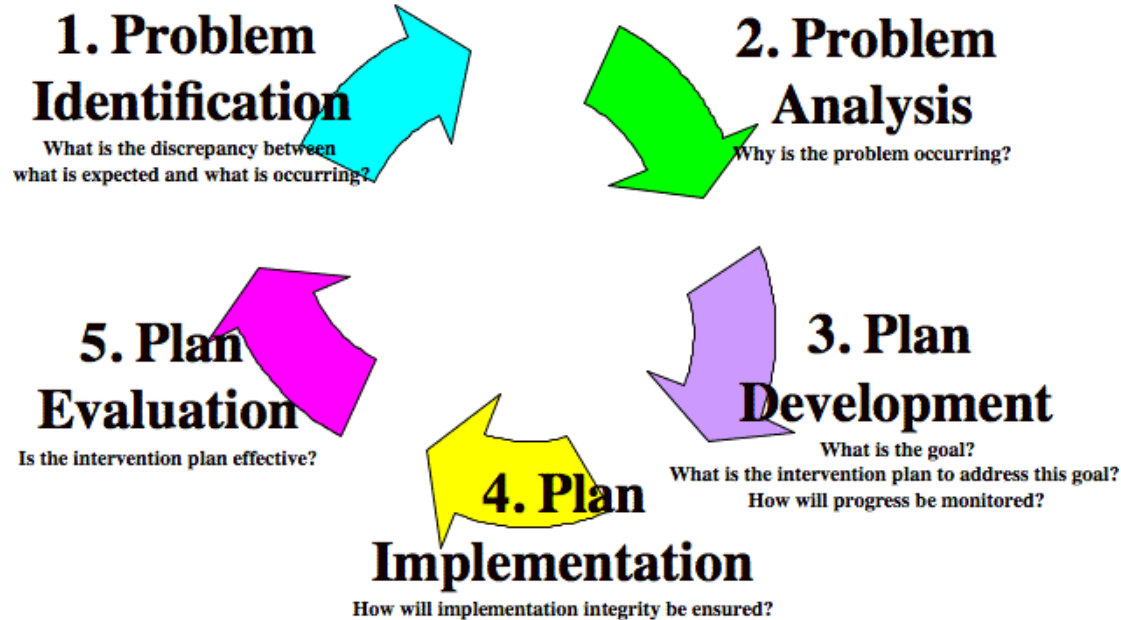
- This is simple problem-solving technique to get in depth of a problem quickly
- The 5-Why strategy made popular by Toyota Production System in 1970s involves looking at any problem and asking Why? and What caused the problem?
- Advantages of 5 Whys include:
 - It quickly identifies the root cause of the problem
 - It is simple and easy to learn and apply

IS – IS NOT

- “IS – IS NOT” is a problem solving tool that explains the rational process for finding the possible root cause of the problem.
- helps user to avoid jumping to a false cause.
- At the end of the IS – IS NOT exercise user gets a confirmed true cause .

Steps of problem solving

Problem-Solving



1- Define the problem

- Clearly state the problem
- Detect the circumstances lead to the incidence of the problem.
- Write a clear definition of the problem and the barriers encountered.

2- Find possible solution (s)

- Analyze the problem so you fully understand it and then develop ideas which will achieve your goal
- Develop several ideas to solve the problem to increase your chances of finding the best solution to the problem.

3- Choose the best solution

- This stage is a process of decision-making based on your comparing the possible outcomes of your alternative solutions; this is the “**DO**” stage

3- Choose the best solution

- This stage involves:
 - ▣ Identifying all parts of the solution
 - ▣ Eliminating solutions that do not meet certain criteria
 - ▣ Evaluating the solutions against the desired outcomes
 - ▣ Assessing the risks associated with the “best” solution
 - ▣ Making a decision to implement the solution

4- Implement the best solution(s)

- This stage involves accepting and carrying out the chosen course of action.
- Implementation means acting on the chosen solution.



5- Evaluate the best solution(s)

- Successful problem-solving involves looking at the outcome of the solution and making the necessary changes in the earlier stages if necessary in order to reach the identified goal.

Why people fail to solve problems effectively

- The following is a list of some of the reasons why people fail to find effective solutions include
 1. not being methodical
 2. lack of commitment to solving the problem
 3. misinterpreting the problem
 4. Lack of knowledge of the techniques and processes involved in problem solving

Why people fail to solve problems effectively

- 5- inability to use the techniques effectively
- 6 using a method inappropriate to the particular problem
- 7 insufficient or inaccurate information
- 8 inability to combine analytical and creative thinking
- 9 failure to ensure effective implementation

The magic factor for any problem solving is your ATTITUDE

The magic of your attitude

Vadim Kotelnikov



* Problems



Don't talk about a problem, talk about an opportunity!

Take home message:

- Problems can also be opportunities they allow you to see things differently and to do things in a different way perhaps to make a fresh start.



Problems are not
stop signs,
they are guidelines.

A rectangular, light brown cardboard tag with a hole on the left side, through which a black string is threaded. The tag is placed on a rough, light-colored wooden surface. In the background, there are several bright green, serrated leaves, possibly from a young plant, which are slightly out of focus. The overall scene is bright and natural.

Thank
you!