Problem Solving:

Problem solving can be seen as a process in which you first define the problem, second, think about the problem in multiple ways, third, define the goals for problem solving, and fourth, look for and create possible solutions. After you have your possible solutions, you have to select the best one/s, put them into action and evaluate the results (see Figure 1.).

Figure 1. Problem solving as a cycle, from http://www.unisanet.unisa.edu.au/learningconnection/student/counselling/problemsolving.asp

Further, when doing problem solving, we have to define other things, such as the situation, causes and solutions. In addition, problem solving is based on thinking patterns: how we think. Next, we will define these issues in more detail.

1. What is the problem?
The problem is often more important than the solution. If you are trying to solve the wrong problem, you are wasting your time, no matter how brilliant, but useless, solutions you find.
Example 1. A teleoperator was getting lots of complaints from customers claiming that they had to wait for a long time on the telephone before they could reach the company’s customer service. So, should this company define their customer service as the problem? The company decided to analyze the problem further. They found that their call center was so busy because they received so many phone calls about invoices, and specifically about what was meant by some sentences in the invoices. The problem was consequently re-defined as a problem in invoice handling and checking, and they then worked to make the invoices clearer for their customers. This succeeded in reducing customer dissatisfaction. As the company had taken the time to define the problem before acting, they did not waste money or time working on the wrong problem.

Customer complaints  Bad customer service  Long waiting times on phone  Mistakes in invoices  Invoice handling and checking  Making invoices clearer for customers by changing some of the texts in the invoices

Figure 2 Cause-effect chain

When working in a team, people easily see the same situation in different ways. Perhaps not all of them see a problem at all, or the problem may be different for each person. These differences may be caused by the different goals and values that each person has. Therefore, it is really important that, before going into a problem solving process, the team members start by discussing and defining the common problem.

2. Other terms related to problem solving

A problem always occurs in a situation; i.e. it is surrounded by circumstances. In fact, some situations can even be the problem. However, we must see the situation objectively in order to commence the problem solving without too narrow a perspective.

A problem is always caused by some thing/s. You must know what the specific causes of the problem are. If you do not analyze the causes, you cannot be specific enough in your problem solving process. So, after you have defined the problem and understood the situation where it occurs, you should look at the causes – the specific facts that cause the problem. Some causes are solvable ones, but unfortunately there are also causes that cannot be solved. If your problem is totally based on causes that cannot be solved, you are just wasting time.

Solution is a specific action to solve a problem, which is equal to a specific action to realize an issue. Some problem solvers do not break down issues into more specific actions. Issues are not solutions. Problem solvers must break down issues into specific action.

Example 2. Rachel is walking down the street, shopping and enjoying a free Saturday. Suddenly it starts to rain. As usual, she does not have an umbrella with her. She runs into a shop and buys a new one. She realizes that she has perhaps ten umbrellas at home. She starts to wonder why she always buys a new one, and
why she doesn’t take an umbrella with her when she leaves home. What are the causes of this problem, i.e. “buying a new umbrella each time it starts to rain”, and what are the possible solutions?
1. Cause: Rachel does not like the way current umbrellas look. Solution: Design pretty umbrellas that everybody would love to have.
2. Cause: Current umbrellas are not easy to use or carry. Solution: Do some research with consumers, analyze the results and design an improved umbrella with more user-friendly characteristics.
3. Cause: People generally hate to stand or walk in the rain. Solution: The government should launch a program aimed at affecting the general attitude towards rain.
4. Cause: Rachel does not remember to take an umbrella with her. Solution: Develop a flying umbrella which you can call like a taxi to come to you.

Example 3. Sam wants to buy a nice birthday present for his mother. However, the problem is that he does not know what to buy or where to go in order to find a present. The situation: The birthday is tomorrow so there won’t be enough time to go into all possible shops or even to order it from the Internet.
The causes: Sam does not know what his mother would really like to have, because his mother has always been satisfied with all the presents she has received. Once Sam gave her an ant farm, another time he gave her a package of washing detergent, and once he even gave her a dead snake...So, basically, he could give her almost anything and she would be happy. However, this time he would like to buy something she really appreciates. How to solve this problem?
Solution number 1: He goes into a nice gift boutique and asks them for advice.
Solution number 2: He goes into a flea market and finds something special.
Solution number 3: He asks his girlfriend to come with him to buy something nice.
Solution number 4: He goes into a supermarket, closes his eyes, takes something on the shelf and writes a poem about that something.
Solution number 5: He shows a picture of his mother to some people he meets on the street and asks them to tell him what to buy as a birthday gift.
Solution number 6: He opens the e-CIT webpages and finds new, innovative pieces of craft.
Solution number 7: He decides to start a company which would devise innovative solutions for people who do not know what to buy as gifts. He writes a business plan and gives this to his mother as a birthday gift.

3. How we think about problems
Based on the problem and situation, you can choose your style of thinking. The thinking style or pattern does not refer only to logical ways of analyzing the problem. There are many other ways of analyzing and solving the problem. You have to judge if the problem, situation, causes and solutions are right or wrong, strategically, emotionally, realistically or in some other way. What is your way of thinking?
In order to do some problem solving, starting is essential. How do you start? One way is to realistically analyze what can be done and then to solve the most essential problem first. Some researchers have stated that 80 percent of the
problems are caused by only 20 percent of the causes. So, try to find the essential causes, and then you efficiently solve the problem. Another way of thinking about the problem is to base one's thinking on past experiences. It is quite normal for our daily lives to be invariable. Things just seem to go as they have been going on for ages. Often, you remember having experienced an identical situation before and this experience can be used in problem solving.

The thing about thinking style or pattern is that it gives you a tool to solve the problem in a more efficient way. If you do not have a thinking style, you can end up being frustrated with problem solving.

It is normal to want to clarify cause and effect relationships. We usually think of finding causes as solving problems. This is a basic and easy method to think about the problem. Another way is to deepen this cause-effect thinking into a rational way of thinking:

1. Think about what the ideal situation would be
2. Describe the current situation
3. Compare the ideal situation and the current situation in order to identify the problem
4. Define the causes behind the problem
5. Define possible solutions for the causes
6. Evaluate the alternative solutions and choose the best one/s
7. Implement the chosen solutions

Cause-effect and rational thinking approaches can be used to solve almost any types of problem, as they are easy to use and apply in different problem situations. You can also use a WHY method in which you consider WHY some problem is occurring. You start by asking the first WHY question and define a solution for that. Then you again ask WHY several times, in order to break down the problem into more specific levels. You can ask WHY as many times as you want to, but it is usually enough to use from three to ten WHY questions.

Problem solving should not necessarily be rational. In some cases, creativity can play as important a role, or even a more important role, in problem solving. Solving problems in a creative way emphasises imagination and visualisation. In other words, the ideas can be first imagined without using words or text. You can use different types of visual techniques, such as using pictures and images of things and places, which you arrange in different ways. You can draw your own ideas or you can use existing pictures of products in which you can change the forms, colours and other elements simply by drawing new elements in the pictures. When doing problem solving in a creative way, it is important to try to think about the differences, rather than the similarities, of ideas. After you have visualised your ideas, you must explain them to other people. Then words and texts will be useful as explanations – since, if you cannot explain your ideas to other people, the ideas may not make any sense. After communicating your ideas to other people and analyzing what they have said about them, you must evaluate and summarize the results, which are usually more rational than creative in nature. So, although it is vital in creative problem solving to start by being creative and using different creative techniques, at the end of the process you have to find logical, rational ways to communicate your ideas to other people.
4. How can I solve problems?

Let the following hints guide you to be the Number One in Problem Solving on this Planet:

1. Problem solving is not just a process; it is also an attitude. You should think of it as an opportunity to find new solutions to current problems, such as how to help people have happy lives. Remember that something can always be done about a problem.

2. The problem is the important thing, so try not to find a solution if you cannot identify the problem. You can break down the problem into smaller parts, which may make it easier to understand.

3. Take time to analyze the problem properly. When you understand the problem very well, the solving part will be much easier and the results can be as good as your understanding of the problem.

4. Imagine that you are somebody else: the richest man on the Earth, an alien in a strange planet, your grandmother, or someone else. Ask how you would see the problem from their perspective.

5. Remember that your solutions must be accepted by other people. If you suggest a solution that is technically superior but not socially acceptable, people will not buy it.

6. Do not let your assumptions limit the solutions. Solve the problem that really exists, not the problem that you wish it was, or the problem that you already have a solution for.

7. Try not to gather all the written evidence in the world before problem solving. You can also ask other people and use your imagination. You can be creative and produce something totally new out of the existing information by being both persistent and imaginative.

REFERENCES

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