UNIT 20 Creative Problem Solving

Learning Outcomes

By the end of this unit the learner will be able to:

- ✓ Apply problem solving steps and tools

Unit 20

Definitions

Defining Problem Solving and Decision Making

What, specifically, is a problem? A problem can be a mystery, a puzzle, an unsettled matter, a situation requiring a solution, or an issue involving uncertainty that needs to be dealt with. You are dealing with problems every day.

While doing some research on problem solving, we found some interesting arguments. There are quotes attributed to different people that say very different things about problems.

Albert Einstein is quoted as saying that if he had an hour to save the world, he would spend fifty-five minutes defining the problem and only five minutes finding the solution. While people have argued with Einstein's numbers, the point is that a problem needs to be properly defined before you can come up with a solution that is worth implementing and deals with the problem adequately.

Problems can be classified in three ways:

- Problems that have already happened
- Problems that lie ahead
- Problems you want to prevent from happening

There are three ways to approach problems:

- You can stall or delay until a decision is no longer necessary, or until the problem has become even greater.
- You can make a snap decision, off the top of your head, with little to no thinking or logic.
- You can use a professional approach and solve problems based on sound decision-making practices.

Think of someone you know who is a great problem solver. Describe the traits, characteristics, and behaviors that make them a good problem solver.

Problem Identification

The first and most important undertaking of your problem solving efforts needs to be defining the problem. You cannot work on something if you don't know what it is. You have to resist the tendency to start working on the problem as soon as you know one exists, and instead develop an understanding of whether we are addressing the problem or merely a symptom of it.

We should go after the problem rather than attack symptoms. This way, we can create higher quality solutions that in turn will eliminate or reduce the symptoms. As well, this will resolve the problem much more easily than when you attack the surface only. Most importantly, you'll also know that you are taking on a worthwhile problem.

Can you think of an example of when someone looked at the symptoms instead of the root of a problem? What happened?

Eight Essentials to Defining a Problem

Although we make decisions all the time, some decisions come easier than others. The first step is to define the problem clearly. We have eight suggestions to help you do this as easily, efficiently, and effectively as possible.

Rephrase the Problem

Sometimes what we want to see is not what other people see. When the boss sees production drop and he tells his team to work harder, he's not likely to see much of a result. He's telling people what to do for his benefit, and that does very little to engage people. Instead, he could rephrase the problem and ask people what they feel connects them to their work. He can take an interest and ask what they can do to make their jobs easier or make work processes more efficient. In this way he engages people, finds out what could be dropping their production, and can come up with solutions instead of just telling people to be "more productive."

If you have a hard time with wordsmithing, grab a dictionary and thesaurus (or look at online versions) and play with your problem statement by changing it several times. Start with one word or short phrases. If you don't enjoy word games very much or feel yourself struggling, ask for help from a colleague or friend.

Here's an example. If the problem seems like "Our sales are decreasing," start replacing words to become clearer about what's going on:

- "Our market share is decreasing."
- "Our new sales are the same as last year."
- "Repeat sales have decreased 16% over last year."
- "Our outgoing sales call volume has increased 18%."
- "Our incoming complaint calls have increased 22%."

By doing this type of rewording, you can narrow things down and determine that the real problem isn't that your sales team is neglecting their work or needs more training. The problem appears to be that repeat sales are down and correlating with that is an increase in complaints. Finding out why will be your next step.

Expose and Challenge Assumptions

We assume a lot. It's human nature. Unfortunately, assumptions can really interfere with getting an accurate problem statement.

If you pull up to the gas pumps, you might assume that you can buy regular, mid-grade, or premium gas. And yet, when you pull up to a rural station and there is only one option (regular) for your car, which usually gets premium, you have to decide whether you have enough fuel left to make it to the next gas station.

When defining your problem, write a list and include as many assumptions you can think of, especially the obvious ones. This helps to clarify the problem. Then, test each assumption and find out if some of them are actually wrong, or if you imposed them on yourself.

One common assumption is to say, "We've never done it that way, so we won't be allowed to do it in the future."

Use Facts

Sometimes we see a problem and just want to jump in and fix it. However, we are also generally responsible for things like time and money, so it's important that we look at the details and determine what the problem really is. If a problem is too vague, it might not even be serious enough to warrant solving. Find the data you need to define the problem. If you can draw a picture or a graph, do so. Ask questions and gather information that honestly describes the problem so that you can get specific about it.

"You're always late" is a very vague statement of a problem. "You've been late three days in a row" is specific. With straightforward problems like this one, you will find that defining the problem and bringing it to the other person's attention will often resolve it. There are very few people who will continue to challenge the supervisor once they demonstrate an awareness of the late behavior being repeated.

Grow Your Thinking

Problems are often related to other problems. They can be a small element of a larger issue, so this element of problem definition includes considering the problem as part of something larger. To do this, you make the problem more general.

Ask questions such as

- "What's this connected to?"
- "What is this an example of?"
- "Where have we seen this before?"

Leveraging the word play we used earlier, replace specific words with more general ones. "Budget" becomes "finances," "office desk" becomes "furniture," "mouse" becomes "pest."

Shrink Your Environment Temporarily

Since each problem is likely made up of smaller problems, one way to figure out the issue is to split it into smaller pieces. This allows you to consider specific details. This will help you gain an understanding of the bigger problem, as well as the effect that the smaller problems have on one another.

Shrinking your environment is very effective when you have a problem that is overwhelming. It allows you to focus on something tangible. You can again use word play to great benefit here, using words that are more accurate in their definition. "Vehicle" becomes "taxi" or "car." "Budget" becomes "our department's budget" and then "our department's travel budget."

Practice Multiple Perspectives

Although the problem may be very clear from where you are looking right now, that may not be the case from everyone else's perspective. If our sales are decreasing, we may think it's because our sales team is not being effective, but maybe our competition has dropped their price and added a feature to their product that makes

them more appealing than we are.

Rewrite the problem from several different perspectives. How does your customer look at this problem? What about your sales team? Your courier? Add perspectives for people in different roles. How would your spouse see this? A former teacher? A local business association? The people at the café down the street?

Turn it Upside Down

One powerful perspective is defining your problem is to look at it from the reverse direction. If you want more of something, figure out what you get less of as a result. Investigate what happens to decrease sales, or to sell fewer products, or to lose more games. If you feel that sending an employee to a conference is too expensive, consider what happens when you do send them.

Change your perspective and consider things from angles you had not yet considered, and consider the consequences. What about setting up a bare bones product that does not have all the same elements as the fancy ones people are buying from your competition?

Frame the Problem Purposely and Positively

This is something we borrow from goal setting. Our brains will focus on things that are positive and exciting. Even more effective is to reframe what you think as the problem into a positive and engaging question, because our subconscious loves to ponder questions and will start working on them immediately, even if we don't think we're thinking about it. For example, instead of thinking, "We need our employees to quit smoking because smokers are driving up costs of our benefit plan," try, "How can we encourage our employees to live long healthy lives and live to be happy people?"

Summary

When you can describe the problem clearly, the solution often presents itself. However, failure to identify the problem properly can send you off fixing things that may not ever resolve the actual problem. Don't create a situation where you are looking at the same problem three months from now; use these eight essential elements in your favor.

Problem Solving in Action

Problem One: Your child's teacher calls to say that your teenager has been late arriving to school every day this week.

Problem Two: Colleagues are leaving their dirty dishes in the kitchen at work.

Making Decisions

What it Means

Making the decision will lead us to action, and that's a good thing! There is not much benefit to defining a problem unless we do something about it. Luckily, there are plenty of tools to help you make the best decision in a particular situation.

Making Winning Decisions

Whether you are making a decision as an individual or as a group, some ground rules of the decision making process are:

- Encourage everyone to participate.
- Encourage new ideas without criticism, since new concepts come from outside our normal perception. Without considering new decisions, things remain the same.
- Build on each other's ideas.
- Whenever possible, use data to facilitate problem solving.
- Remember that solving problems and making decisions is a creative process. This means that new ideas and new understandings often result from the process.

In order to reach decisions, the group should agree to the following standards:

- Make decisions based on the best data available.
- Research and locate required information or data.
- Discuss criteria for making a decision (cost, time, impact, etc.) before choosing an option.
- Encourage and explore different interpretations of data.

Types of Decisions

Three Types of Decisions

We tend to make three kinds of decisions. The **autocratic decision** is one you make alone. You do not consult anyone, and you accept full responsibility for the consequences of your decision.

Your second choice is a **consultative decision**, when you talk over the problem with another person or persons, such as a more experienced superior or several of your colleagues or teammates. Two heads are frequently better than one when a serious decision must be made.

A third possibility is a **group decision**. When a problem involves the entire staff or a team, they should participate in the decision. Being involved also gives them some ownership, which will make them more committed and motivated to the decision and the results that come with it.

Advice from an Expert

Inevitably, we will make some decisions that are less than ideal, especially when we look back on something we've done in the past. This is why we have to commit to using the data that's available, rather than relying strictly on intuition or making a guess.

If you make a decision that haunts you, this advice from Claude George has been around since the 1970's and is still valid today:

- Don't ignore it or cover it up, because this won't go away.
- Accept that it is probably not the first or last poor decision you will make. The goal is for the large percentage of your decisions to be good ones. If so, then your overall average will be acceptable.
- Learn from your mistakes. Ask yourself where you went wrong. Get advice from those around you concerning what you should have considered that you didn't, what you should have done that you didn't, what errors of judgment you made, and so on.
- After this analysis, decide what you should do now; what action should you take? Then tell your boss about your new plan of action. Explain to him or her why you have moved from the old decision and why it is important for you to make the change. In talking with your boss, don't try to shift the blame.
- You are responsible for the decision and for the error. Prepare for and accept the consequences.

Facts vs. Information

Decisions combine fact and theory. They are the choices we make in the light of how we interpret the events we observe. We can consider “facts” as basic ingredients and “information” as a supplement to the facts.

Basic Ingredients

- Facts
- Knowledge
- Experience
- Analysis
- Judgment

The Supplements

- Information
- Advice
- Experimentation
- Intuition

When we make decisions, we want facts that are indisputable, incontrovertible, and irrefutable. But facts can change. With progress, today’s facts may be out of date tomorrow. (Some examples include the tallest buildings, largest cities, and the Guinness Book of World Records.) In the absence of facts we must fall back on available information, which will have to be filtered since it can also be well-laced with opinion.

Eight Ingredients for Good Decision Making

1. Focus on the most important things. Of all the things you are judging, one factor is the most important and must be given greater weight than anything else.

2. Don't decide until you are ready. Don't act on impulse or succumb to decision panic.

3. Look for the positive results that can come from this decision. Make your decision as if you were afraid of missing a wonderful opportunity.

4. Consider the negative outcomes. If things go wrong, as they sometimes will, what's the worst that can happen? How can you mitigate problems?

5. Look ahead. Try to see how your decision will play out over time.

6. Turn big decisions into a series of little decisions. When a big undertaking seems like it could be too much to tackle all at once, take small steps, get more information, reconsider, and then make the next decision.

7. Don't feel you are locked into only one or two alternatives. There are always more options if you look for them. Go look for them.

8. Get what you need to feel safe. For some people, that means knowing the worst that can happen. For others, it means knowing they can back out at the last minute. For still others, it means knowing that everyone they care about agrees with the decision, or fully understands the situation they are in. Identify your safety needs related to the decision at hand.

Decision-Making Traps

We just finished discussing what can substitute for cold, hard facts. In the absence of good data, the people making decisions must fall back on available information, and sometimes that kind of information is heavily influenced by opinion. This isn't necessarily a bad thing if the sources are informed opinions. However, as information is being gathered, we must be aware of decision-making traps and avoid as many as possible. Here are 10 traps that you may encounter.

Misdirection

When we go on fishing expeditions (trying to get information without revealing its purpose), we may very well get the right answer to the wrong question. If we ask the experts and they don't know, they may not admit it. Then we can become the victims of a snow job, or find that the blind are leading the blind.

Sampling

There is also danger of making a decision based on too small a sampling. You may ask three people about when they want the Christmas party and get every one of them to agree on the same date. But it would be dangerous to go ahead with that date based on such a small sampling if it is not adequate and representative. Perhaps that is also the night of the Kiwanis Christmas party, of which several employees are members, or perhaps it is a Tuesday and many of the employees go bowling that evening.

Bias

We are all guilty of some bias. Every moment we have lived and everything we have ever experienced has in some way contributed to our own biases. These biases will be reflected in our actions and our opinions. Usually it is enough to know that we each have biases and to adjust our thinking accordingly. However, remember that people with a clearly defined bias will be representative of others similarly inclined.

Averages

The ubiquitous "average" can be deceiving. The arithmetical average can be a long way from the figure in the middle, or the median. Averages can also bury extremes: a man can drown in a stream of water that averages two feet deep if he just happens to fall into the one spot in its entire length where it is 50 feet deep. The average time it takes my brother to drive from Boston to New York would be deceptive for the average driver, since my brother often drives at excessive speeds.

Selectivity

Selectivity is another danger signal. When we throw out unfavorable results and embrace unacceptable ones, the results are ambiguous to say the least. We have to demand **all** the facts, not just those that have been swept under the rug.

We mustn't correlate the frequent with the normal. If a particular study of the infant population indicates the average age at which a child sits up is six months and your child has a particularly round bottom and doesn't sit up until eight months, that doesn't necessarily make him slow.

Here's another example: we have been told that cannibalism is frequent among certain populations. However, whether it is "normal" is best left to the anthropologists, whether it is "right" can be left to the theologians, and whether it is "good" will probably depend on whether you are the eater or the eaten.

Interpretation

We should never forget that facts and information are always open to interpretation. Remember the old adage that figures lie and liars figure. We must be careful that someone isn't using facts to distort the truth rather than to enlighten. We also have to ensure that we aren't finding convenient statistics simply to support our own position. When a person has information, they are obliged to present it as clearly as possible so others will not misunderstand. However, we can never entirely eliminate the danger of misinterpretation.

Here's an example: A man was being interviewed for a management position, and as it came to an end he was asked what he felt made him stand out from other candidates. He responded that he was a "thoughtful" man. The selection committee thought he was referring to his gentlemanly behavior: opening doors for older people, remembering birthdays, and the like.

A few months later he met one of the people who sat on the interview panel and the disappointed candidate asked why he's been overlooked. The man told him that "thoughtful" had weighed heavily against him. The man then explained he'd meant he gave a great deal of thought to the decisions he was required to make. The misinterpretation cost him a job.

Jumping to Conclusions

This is a trap you set for yourself, and nobody has to spring it for you. Make sure that you are using the skills you have to consider things thoroughly instead of heading for an easy answer.

The Meaningless Difference

"Sell the sizzle, not the steak," says that when all things are equal (10 neighborhood restaurants sell a decent steak), then it's the atmosphere, the service, the side dishes, and all the extras that make us select one eating establishment over another. Make sure that when you need to make a decision about the steak, you are considering the steak itself and not the sizzle.

Connotation

It is natural to draw out all the meaning in a remark, but our emotional state may determine our connotation. Connotation, emotional content, or implications can all be added to an explicit literal meaning. When we are making good decisions, we need to base them on fact rather than our emotions about something, as difficult as that can be.

Status

Status can limit communication in ways we never intended. This is a barrier between supervisor and employee, committee member and chairperson, and so on. Status can interfere with communication in either direction, with fear of disapproval on one hand or loss of prestige (or job, or position) on the other.

Getting Real

Introduction

We make decisions and solve problems continuously. Some people love these types of tasks because they enjoy the challenge, being self-directed, and the feeling of satisfaction when they work through complex problems. Other people struggle with it frequently, although all of us struggle with it from time to time.

Do you decide what to wear when you get up in the morning, or do you organize it the night before? What's your morning routine like? Do you get up, eat, and then dress, or do you get dressed and then eat? Do you check your work e-mail first or your mail?

We have preferences for how we do things, and including making decisions and solving problems. As you start thinking about your own preferences, consider the following scenario.

Case Study

Your workplace has a casual Friday policy that doubles as a fundraiser for charity. Employees who want to take part have to put $2 in a donation jar each Friday if they wear casual clothing instead of their usual business dress. Some employees grumble about the policy: they'd like to wear jeans but don't want to pay $2. However, for the most part no one pays much attention to their grumbling. Each year, the employees vote on which charities they would like to support and the money raised is divided equally among the groups that are chosen.

One Friday, Elise, who normally looks after the jar, calls in sick. Colleagues are engaged in the plan and they drop their $2 into the jar throughout the day as usual. On Monday, Elise returns to work and notices right away that the jar is missing. She is very upset that she didn't think to ask someone to lock the jar away for her at the end of the day on Friday. Each week there is about $90 raised.

You start to investigate. Using surveillance footage that only records activity in the common areas of the building, you clearly see the thief leaving the office with the jar under her arm. Moments later she comes back into view without the jar. After a quick search, the security guard finds the empty jar hidden behind a door in the stairwell.

You know the thieving employee well. She has been complaining lately of financial problems. She has also been written up for performance issues twice in the previous year; once for not showing up for a shift and another time for being rude with her team leader.

As the manager, you must decide how to approach the problem(s) and what action(s) to take.

Questions

Write out your decision. What did you do as a result of the theft?

Write out the steps you took to reach your decision.

Further Reading:

- ✓ *Adair, John. Decision Making and Problem Solving Strategies. Kogan Page, 2010.*
- ✓ *Browne, Neil M., and Stuart M. Kelley. Asking the Right Questions: A Guide to Critical Thinking (10th Edition). Longman, 2011.*