# Discussion Topics

# Chapter 11: Problem-Solving Skills

The following Discussion Topics correlate with *Job Savvy*, sixth edition. Discussion Topics provide directions to help you in instructing your students during class time.

Activities Supplements are provided in the ebook to offer students guidance to complete activities found in the margins of their workbook. You may want to present these as in-class activities or as homework assignments. Review Activities are provided in separate handouts to instructors only. The questions found therein may be used in the classroom or as review activities (graded or not).

# Discussion Topics

## Management through Teamwork (page 170)

Using the introduction to this chapter review the need for employees who are problem-solvers. You may present VUCA - The acronym that stands for volatility, uncertainty, complexity, and ambiguity and discuss how each one presents challenges to today’s organizations.

Define the leadership approach called employee involvement. Discuss how employees are assuming more leadership responsibilities. Review the five reasons this has happened.

## Problem Solving (page 170)

Begin by reviewing the three basic assumptions that provide a foundation for good problem solving:

* Problems can be solved. Why is it important to believe that a solution is possible?
* Everything happens for a reason. Why is it important to find the cause?
* Problem solving must be a continuous process. Why is this important?

Discuss the seven steps of problem-solving. Go through each step. Remind your students that leaving out any of the steps or doing them in a different order will limit one’s problem-solving abilities.

1. **Identify the Problem** Take time to discover what the real problem is.
2. **Gather and Organize Data about the Problem** Data may be collected by observing what happens, talking with people affected by the problem and reading reports. Organizing data, a process called “data analysis,” requires some mathematical skills. You can analyze data with three simple methods: frequency tables, percentages, and graphs. See the end of this document for “Data Analysis Methods” (supportive material for this discussion).
3. **Develop Solutions** Review the five ways to develop solutions. Discuss brainstorming and nominal group technique when using group discussion.
4. **Evaluate Possible Solutions** Review the questions to ask when evaluating. Discuss rating and ranking to find the solution.
5. **Select the Best Solution** Discuss the three principles used when finding the best solution. Why is the best solution not always the top solution?
6. **Implement the Solution** Review the four tips to implement the solution.
7. **Evaluate the Solution** Discuss ways to evaluate the solution.

## Creative Thinking (page 174)

Define creativity. Review the following thoughts as the group discusses creativity. How will applying each suggestion help you be creative?

* Don’t let the problem limit your thinking.
* Look at the problem with different viewpoints.
* Use hazy thinking.
* Joke about the problem.
* Give yourself time to think.

## How Job Savvy Are You? (page 177)

Divide the class into small groups to complete this activity. Then share the answers and case studies with the class.

## A Useful Skill: Complex Problem Solving (page 179)

Review the information about complex problem solving. Discuss the 5 Whys.

## Summary Discussion Topic

Discuss this question with the class. How do you plan to develop problem-solving skills?

# Additional Resources

### Videos

Use the provided Video presentations to share helpful, chapter-specific visuals and information with your students.

### Additional Resource

In the Additional Resources document you will find links to important sources of information related to each chapter of *Job Savvy*. You can find more information about job search and success at <https://JIST.com>.

# Data Analysis Methods

After you identify the problem, the second step in problem solving is gathering and organizing data related to the problem. In the chapter on problem solving it states “You can analyze data with three simple methods: frequency tables, percentages, and graphs.” This exercise helps you explain frequency tables, percentages, and graphs are used to analyze data. It illustrates a problem that might be assigned to employees for a mower shop that wants to identify the most common customer complaints about their mowers and how to reduce those complaints.

## Frequency Tables

There are two types of frequency tables. One type of table is used for data collection, and the other is for data summary. The frequency table for data collection has three columns. The left column is labeled *Item;* the middle column, *Tally;* and the right column, *Number*. A description of the observation or answer is written under *Item* each time something different occurs or a new answer is given. A mark is made in the *Tally* column beside it. This process continues until all observations or data have been recorded. You count the number of marks in the *Tally* column and record that total in the *Number* column. Table 1 is a sample frequency table with data on customer complaints about lawnmowers.

### Table 1: Data Collection Frequency Table

|  |  |  |
| --- | --- | --- |
| *Item* | *Tally* | *Number* |
| Motor quits working | tally | 5 |
| Handle breaks | tally tally tally | 14 |
| Starter won’t work | tally | 3 |
| Oil leaks | tally tally tally | 11 |
| Blade falls off | tally tally | 7 |
| Tires fall off | tally | 4 |
| Controls won’t work | tally tally | 6 |
| Total |  | 50 |

The frequency table provides information at a glance. In Table 1, for example, you can easily see the problem that occurs most frequently: “handle breaks.” And the problem that occurs the least: “starter won’t work.” This table also provides maximum (14) and minimum (3) numbers. The difference between the maximum and the minimum numbers is called the *range.* In Table 1, the range is 11.

## Percentages

Percentage can be defined as a fraction with a denominator of 100. The percent sign (%) is substituted for the decimal in the fraction. Thus, 83% could be expressed as 83/100. Percentages help compare items.

Because percentages have the common denominator of 100, they can be added, subtracted, multiplied, and divided. For example, if 25% of a store’s customers buy something on Friday and 28% buy on Saturday, you can say that 53% of all sales are made on Friday and Saturday.

Percentages for frequency tables are calculated by dividing the number of observations of one item by the total number of observations, then multiplying by 100. The following is the formula for figuring percentages:

One Item



Total × 100 = Percentage

Table 1 showed that 14 customers reported broken handles. The total in the *Number* column is 50 customer complaints. Place these numbers in the formula, like so: 14/50 = 0.28 × 100 = 28%

Using this example, you could say that 28% of all customer complaints are due to broken handles. Percentages provide the information necessary to complete a data summary frequency table, like Table 2.

**Table 2: Data Summary Frequency Table**

|  |  |  |
| --- | --- | --- |
| *Item* | *Number* | *Percent (%)* |
| Motor quits working | 5 | 10 |
| Handle breaks | 14 | 28 |
| Starter won’t work | 3 | 6 |
| Oil leaks | 11 | 22 |
| Blade falls off | 7 | 14 |
| Tires fall off | 4 | 8 |
| Controls won’t work | 6 | 12 |

Using percentages, it is possible to find the most frequent reasons for customer complaints and add them together. Using Table 2, then, we can say that 50% of all customer complaints are because of handle breaks (28%) and oil leaks (22%).

### Pareto’s 20/80 Rule

An interesting discovery made by a man named Vilfredo Pareto is that *there is a disproportionate distribution that seems to exist in many areas of* *business and economics.* This disproportionate distribution is often called:

**Pareto’s 20/80 rule:**20% of an organization’s inventory accounts for 80% of the sales; 20% of customers account for 80% of all sales; and 20% of manufacturing mistakes account for 80% of product defects. In solving problems, it often is true that 20% of people, things, or processes cause 70% to 80% of a problem.

## Graphs

Another way to organize data is to use graphs. Graphs help the eye visualize the data and draw conclusions. PowerPoint, Excel, and similar apps make it easy to create charts and graphs to illustrate the data you collect. Instruct students to use material found at following the link provided by Microsoft Office to learn more about how create and use charts. <https://support.office.com/en-us/article/available-chart-types-in-office-a6187218-807e-4103-9e0a-27cdb19afb90>.