Assessing The Situation

Tools for Diagnostic Thinking

Chapter at a Glance

Have you ever felt at a loss for what action to take because you had either too much information or not enough? Effective diagnosis is at the heart of good problem solving and information is at the heart of diagnosis. In this chapter we will first discuss the importance of data and its relationship to the cognitive skill of Diagnostic Thinking. We will then examine the dual content and process functions of the data-based CPS step of Assessing the Situation and how the step and Diagnostic Thinking work together to obtain and manage novel information. Finally, we will describe four divergent and convergent Thinking tools (Five W’s and an H, Why/Why Diagram, Hits, and Highlighting) for gathering data and introduce three Metacognitive Tools (the 4 I’s, Key Word Search, and If-Then Analysis) for making decisions about how to manage the CPS process. Together these tools help leaders effectively diagnose situations that relate to overcoming predicaments and recognizing opportunities.
Leadership is about influencing others. To know the answer to a critical question, or to know where to or how to find the answer, is to have the opportunity to influence how people think and behave. The development of such technological advances as the World Wide Web and instantaneous satellite transmission combine speed and volume to bring us large amounts of immediate information on almost any topic imaginable. But how to manage that amount of information and how to make decisions using large amounts of information are other issues entirely.

Do a quick mental inventory and make a guess about how much information you will encounter today. Consider some of your everyday sources of information—other people, reading, TV, radio, Internet searches and news, e-mail, phone calls, and so on. How many pieces of information would you guess—one hundred? One thousand? Ten thousand? The sheer volume of information at a leader’s disposal is overwhelming. We believe how you manage information and use it to make informed decisions is a key leadership issue. As Conner (1992) noted in his book *Managing at the Speed of Change*,

We move at a variable rate that fluctuates according to our capacity for assimilating new information and influences. How well we absorb the implications of change dramatically affects the rate at which we successfully manage the challenges we face, both individually and collectively. (p. 11)

### Box 5.1 Key Vocabulary

#### Some Key Concepts for Assessing the Situation

**Assessing the Situation**: The meta-step in CPS whose dual purpose is to (1) describe and identify relevant data and (2) determine the next process step.

**Data**: Information gathered from the five senses such as observations, facts, information, descriptions, sounds, even tastes or smells or from more intuitive sources such as hunches, guesses, hypotheses, emotions, incongruities, nags, gaps in information.

**Diagnostic Thinking**: Making a careful examination of a situation, describing the nature of a problem and making decisions about appropriate process steps to be taken.
Metacognition: An ability to monitor your thinking processes and to direct your thinking in a way that achieves cognitive objectives, i.e., to be able to think about your thinking and to direct your cognitive processes.

Thinking Tool: A structured strategy that focuses, organizes, and guides an individual or group's thinking.

Metacognitive Tool: A structured strategy that focuses, organizes, and guides an individual or group's thinking about how to engage and interact with CPS or other processes.

As we mentioned in Chapter 3, in CPS a basic kind of thinking that is called for when we examine and use data is Diagnostic Thinking, which we define as making a careful examination of a situation, describing the nature of a problem, and making decisions about appropriate process steps to be taken. Just as a doctor tries to determine the cause of an illness, to work effectively in a leadership role you need to determine what needs to be done, who can help or hinder you, why you should (or shouldn’t) do it, and how it should be done. In Diagnostic Thinking, you take in data, examine the situation, analyze your choices, make a decision, and then determine what process steps you need to take. Clearly this is an overarching skill that links to many others and, indeed, its executive function is a leadership blueprint for handling data and decisions throughout the CPS process.

Diagnostic Thinking is at the very heart of effective leadership not only because of the power of information itself, but because leaders need to monitor and direct their thinking in decision making. This function mirrors the executive thinking leaders use to navigate through complex initiatives. Those who find themselves in formal leadership positions are typically expected to direct groups through complex situations that result in positive outcomes. Consider how government officials, football coaches, event planners, symphony conductors, theatrical directors, project managers, school principals, plant managers, college presidents, and others in formal leadership positions must constantly monitor situations so that they can direct activity toward desired results. There is no room for leaders to set their minds on autopilot, lest they run the risk of allowing complex situations to get out of their control and influence.

Because of their unique impact on the very fabric of society, leaders involved in social change must be particularly adept at gathering data and using it to monitor the effectiveness of situations and actions.
Consider, for example, the social change initiated by the women’s suffrage movement in the U.S. In 1848, a small group of reformers gathered to draw attention to the social, civil, and religious conditions and rights of women at a convention in Seneca Falls, New York. This convention was a catalyst for leadership activity that lasted over 70 years, culminating with the passage of the Nineteenth Amendment in 1920 that gave women the right to vote. The women involved at the outset of this movement, such as Elizabeth Cady Stanton, Lucretia Mott, and Susan B. Anthony, were not appointed by some group or body to lead it. Indeed, it was the lack of opportunity to take leadership positions in American society of the mid-1800s that compelled these women and others to assume leadership roles and pursue social change. At that time, women were not allowed to speak in public, hold office, attend college, or earn a living other than as a teacher, seamstress, or mill worker.

Activities of this scope show the need for continuous assessment of data in combination with ongoing monitoring of progress and pitfalls because leadership initiatives are often not quick and easy fixes based on one or two decisions and a few follow-up actions. We suggest that among other skills, Diagnostic Thinking aided these leaders because they were able to (1) observe and draw from other women’s movements in Europe and on other continents, (2) build on the worldwide anti-slavery movements, (3) use the Declaration of Independence as a foundation for women’s rights, and (4) orchestrate activities that eventually led to reform.

Elizabeth Cady Stanton, one of the principle leaders in the women’s rights movement, exemplified an ability to monitor and learn from other situations. Her early work in the temperance movement, which focused on the abuse of women and children, provided Stanton with her first reform experience. Later she joined the anti-slavery movement and used lessons learned from this work to further her argument for women’s rights. Stanton’s own words provide a testimonial to the importance of Diagnostic Thinking for leaders, as she observed, “The older I get, the greater power I seem to have to help the world; I am like a snowball—the further I am rolled the more I gain.”

Block (1987) described leadership as “the process of translating intentions into reality” (p. 98). We suggest that Diagnostic Thinking, an ability to assess a situation and to identify the appropriate process steps, enhances the probability that leaders, such as those involved in the women’s suffrage movement, will be able to successfully transform their aspirations into reality.
Imagine yourself on the bridge of the starship Enterprise. Picture the technology, the action, the information, the decisions. . . . The bridge of the Enterprise is Command Central—the heart of a complex information system and the place where decisions are made. In CPS, this Command Central function is performed when you (1) examine data pertinent to a challenge and (2) determine whether and how you might proceed if you think your situation would benefit from CPS. The higher the stakes, the more you need accurate data to guide your choices and decisions and the more careful your thinking needs to be.

Table 5.1  Key Reasons Why Leaders Need to be Skilled at Assessing the Situation

- Because leaders are in a position to influence and to be influenced, they need accurate understanding of data that they give and receive.
- Because change is a constant condition in people’s lives, leaders need to move quickly in response to new ideas and situations.
- Leaders need to continuously monitor situations to make adjustments and respond appropriately to evolving circumstances and change.
- Leaders are gatekeepers of the flow of information; they must recognize what information needs to be shared with what people at any given time.
- Leaders are constantly inundated with information—some of which is important and some of which is not; skill in Assessing the Situation helps leaders sort through information and find the salient points quickly.
- A leader’s job is not just to make decisions, but to make good or wise decisions; thus, they need to actively seek out data and base their decisions on a full range of information.
- Leaders need a wide net to capture data so that opportunities are not missed.
- In order to know what direction to take, leaders need to understand the context of their current reality; the richer the information, the more likely they are to identify creative, effective pathways to change.
- Leaders must not only gather data, but must also interpret data and explore its meaning.
- To guide and advise others, leaders must be cognizant of what is happening in process as well as in content and be able to help others locate themselves in process at any point in time.

Assessing the Situation is a unique step within the CPS process (see Figure 5.1). It is the step that kicks starts the CPS process. To engage effectively in addressing a problem, whether it is a predicament or opportunity, you have to first take stock of your needs and the nature of the problem; therefore, engagement in CPS always begins in some way with Assessing the Situation. This step is not only about identifying information that is relevant to the content of your problem, it is about getting information that will help you decide what process step will be the most effective to begin your problem solving efforts.

Just like efficient traveling anywhere, how far you are going and how long the trip will take depends on where you start. In the case of using CPS, you may need to make the whole trip from the beginning of the line to the end of it (Exploring the Vision, Formulating Challenges, Exploring Ideas, Formulating Solutions, Exploring Acceptance, and
Formulating a Plan) or you may only need to take a short hop. For example, if you want to strengthen solutions and then gain acceptance from others along the way, you can make a quick hop from Exploring Solutions to Formulating a Plan as needed. The good news about the flexibility of CPS is that you have lots of choices—you are in control of CPS Command Central. The bad news about this flexibility is that you have lots of choices—you are responsible for the process decisions and the content outcomes that are made in CPS Command Central.

Let’s take a closer look at these dual content and process functions. To engage in Assessing the Situation, you begin by gathering data to understand what exactly is going on. Remember not to limit data collection to just observable facts. Consider the character of Mr. Data in the TV series Star Trek: The Next Generation. One of the reasons he is such a useful team member is that unless he has a major malfunction in his circuitry, the captain and crew can always count on him to give them loads of information on any topic. His one flaw on the information side is that he can only deal with “facts” and the logical hypotheses that stem from linear thinking. When it comes to anything beyond that, Mr. Data is out of his league. This is not the case with our use of data in CPS. The term data as we use it in Assessing the Situation can be gathered from our five senses—observations, facts, information, descriptions, sounds, even tastes or smells. But data that are pertinent to CPS can also come from more intuitive sources—hunches, guesses, hypotheses, emotions, incongruities, nags, gaps in information (Isaksen & Treffinger, 1985). We use “data” here to include a range of inputs and sources that provide a more divergent basis on which to base choices, decisions, and actions.

Once you have an informed understanding of the situation or the content on which you want to work—who is involved, what are the important aspects of it, what have you tried before, when does it take place, where does it take place, why is it important to do this, and so on—it is time to decide where to go next in using the CPS process. This preparation is analogous to a medical doctor who uses his or her diagnosis of the symptoms of an illness to recommend an appropriate treatment. In some cases there is a need to gather more information. For example, you are sent to a specialist for further tests and once this information is analyzed, then the course of treatment is prescribed. The point is that you determine the most appropriate next step after a careful examination of what you need and what each step can provide. Fortunately, CPS is much more forgiving than making an error in judgment about medical treatment; it is a flexible process. If you find that the next step you initially decided upon in Assessing the Situation is
not working for you, reassess and move to another, more appropriate step. For example, we have seen numerous occasions where people believed they knew the exact nature of the problem and therefore moved quickly into Exploring Ideas, only to discover after a few ideas had been generated that they were actually not working on the right problem. In such cases, this false start generally causes people to reassess the situation and move back to the Formulating Challenges step to recheck their data and to redefine the challenge.

In an earlier chapter we commented that CPS is a thinking person’s process. This is particularly evident in Assessing the Situation. Using CPS is not really difficult, but learning to navigate the steps requires some basic understanding of function and structure of the model and the ability to think about your thinking—that is, not only to work your problem through the process, but to be able to stand above the process to ensure that you are taking the most productive path through it. In this sense, you never really leave Assessing the Situation behind. As you move around in CPS, you will be involved in ongoing checking, monitoring, and deciding about the meaning and usefulness of your information. “Am I in the right step of the process?” “Is this step working for me?” “Do I already have what I need for this step and can I move forward to another step?” “Have I sufficiently diverged and can I now move to the convergent phase of this step?” These questions represent the kinds of continuous Diagnostic Thinking that occurs when you use CPS. Like the driver of a car, you cannot fall asleep at the wheel, but must remain alert throughout the journey in order to arrive successfully at your final destination.

**EXECUTING EACH STEP OF THE CREATIVE PROBLEM SOLVING PROCESS: A WORD ABOUT TOOLS**

In the previous section we described the nature and purpose of Assessing the Situation. Our goal was to help you understand the dual function of this step. To successfully execute a step in the CPS process, it is not sufficient to merely know its function. That would be like describing the function of a kitchen to someone without giving him or her the tools necessary to actually prepare meals. Just as a chef has tools to carry out particular tasks in the kitchen, so CPS provides tools that enable you to carry out the various steps of the process.

The general definition of a tool that we are using here is *something that serves as a means to carry out a task*. In CPS, we use **Thinking Tools** to carry out the steps of the CPS process. It is these tools that explicitly
enable individuals, whether working alone or as a group, to achieve the intended function of each step. For the purposes of CPS we define a Thinking Tool as a structured strategy to focus, organize, and guide an individual or group’s thinking. Therefore, in each of the chapters on the process steps (Chapters 5 through 11), we will present tools that are useful to, though not limited to, that particular step. If you are familiar with other tools that work well in Diagnostic, Visionary, Strategic, Ideational, Evaluative, Contextual, and Tactical Thinking, by all means use those as well within the CPS framework.

As noted in Chapter 2, each step of the CPS process has a divergent (i.e., generating options) and convergent (i.e., screening, selecting, and supporting options) phase. Most tools can be further sorted as to whether they are designed to promote either divergent or convergent thinking. With one exception—the Formulating Solutions step—the tools in each subsequent chapter are categorized as either divergent or convergent tools. The tools associated with Formulating Solutions tend to be more integrative and thus encompass both the divergent and convergent phases in the service of Evaluative Thinking.

We now turn to some basic Diagnostic Thinking Tools that will help you to engage in Assessing the Situation, followed by some key Metacognitive Tools for Assessing the Situation in the CPS process. These two sets of tools reflect the dual function of Assessing the Situation—describe and identify data and determine the next process step.

**DIVERGENT THINKING TOOLS FOR ASSESSING THE SITUATION**

All of the divergent tools presented here will help you to think broadly about the content of any situation you face, that is, to cast a very wide net as you gather data—the first function of the Assessing the Situation step. The tools presented in Table 5.2, and the elaborated descriptions that follow, use divergent thinking to explore situations from as many angles as possible.

**Five W’s and an H**

Diagnostic tools are all about questions, and the most familiar ones have been around since journalists first tried to give us the basics in a short amount of time or space. The “5 W’s and an H”—Who, What, When, Where, Why, and How—provide fundamental questions for data identification and management (Isaksen & Treffinger, 1985; Noller,
Parnes, & Biondi, 1976). But here’s a divergent tip that will help you get even more mileage out of these basic diagnostic questions—add the word “else” to each word and you will get even more information in the same category—who/who else? what/what else? It’s a simple semantic technique—ask targeted questions and your mind will seek appropriate answers; add “else” and your mind will go on a search for even more data for you to choose from in the same category. To apply Five W’s and an H,

1. **Follow the principles for divergent thinking.** Commit to using the divergent thinking principles either individually or within a group.

<table>
<thead>
<tr>
<th>Tool Name</th>
<th>What the Tool Does</th>
<th>What You Do</th>
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<tbody>
<tr>
<td>5 W’s and an H</td>
<td>Provides a basic overview of the data by asking “who, what, when, where, why” and “how.” Through the use of these categories, an individual or group can explore data associated with an opportunity or predicament.</td>
<td>To gather data, ask and record answers to the general questions “who, what, when, where, why” and “how.” Add “else” to get more of each. If you keep the divergent guidelines in mind for each category, you will get even more stretch, including original perspectives that you might have otherwise overlooked.</td>
</tr>
<tr>
<td>Source: Isaksen &amp; Treffinger (1985); Noller, Parnes &amp; Biondi (1976).</td>
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<tr>
<td>Why/Why Diagram</td>
<td>By asking a series of “Why?” questions you are able to uncover what is behind a situation.</td>
<td>Identify a situation that requires creative thinking. Pose the question “Why?” in regard to this situation. For example, “Why is this happening?” “Why is it a problem?” or “Why is this important?” Ask “Why?” a multitude of times. Once initial responses are recorded, conduct a second round of “Why?” questions, but this time on the answers yielded by the first round.</td>
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</tbody>
</table>
2. **Identify a situation and apply Five W’s and an H.** Find a situation for which you need to develop a better understanding. List each of the Five W’s and an H on separate sheets of paper, or divide one sheet into parts with one question in each part. Taking each category separately, generate responses to each question and write them under the appropriate question. To get you started, see the list of questions below for examples within each category; generate further questions to allow yourself to examine more data relative to each category. Don’t worry if your responses overlap. An overlap in data is much better than a gap. Finally, if a question does not apply, skip over it.

   **Who:** Who is involved? Who is the primary decision maker? Who are all the people affected by this situation?

   **What:** What is the history behind this situation? What is the ideal outcome? What has already been tried?

   **When:** When did this start? When would you like to take action? When would you like to have this resolved?

   **Where:** Where is this taking place? Describe the physical and psychological factors that surround this situation. Where has this situation been successfully managed? How has it been managed? Where are there situations similar to this? How are they similar?

   **Why:** Why is this important? Why is this occurring? Why are you, or others, concerned about this situation?

3. **Use the tag “Else” to stretch for more data.** Note that no one question is necessarily better than another, nor is any particular order significant. If some questions don’t stimulate much information, ask “Who/what/when/where/why/how else” and then move on to another question if information isn’t flowing. Remember to go for quantity, make connections, be wild, and add incubated data later if needed.

4. **Check your data.** Scan your data for quantity and variety: if you are satisfied, move on to convergence; if not, generate more or different things in as many categories as you need.

**Why/Why Diagram**

The Why/Why Diagram is based, in part, on the Japanese quality technique called the “Five Whys.” The purpose of the Why/Why Diagram is to get to the heart of a problem in a systematic way and to
relate the results to the overall problem. Asking why forces your mind to search for reasons, and continuing to ask why of the same data perpetuates more abstract answers as well as restatement of the problem. To complete this tool,

1. **Recall the principles of divergent thinking.** Review the principles for divergent thinking and use them to guide your application of this tool.

2. **Identify a situation and apply “Why?” questions.** Identify a situation you feel needs to be clarified. Give the situation a title and write it midway down on the left side of a sheet of paper. As an individual or as a group, pose the question “Why?” to this situation. Use “Why?” questions that help you to dig more deeply into the situation. “Why is this happening?” “Why is it a problem?” Think of as many “Why?” questions as you can. Your responses to these questions should be listed in a column to the right of the situation.

3. **Ask “Why?” again to broaden your view.** Create a second column of responses by asking “Why?” of the list of answers you just generated. Challenge yourself to look at the situation more deeply by generating multiple responses to this second round of “Why?” questions. When you have finished, the responses will fan out from the title you gave the situation on the left side of the paper.

4. **Extend each strand.** Continue to fan out by asking “Why?” along each chain of responses. Continue until you have explored the possible causes and whys thoroughly. When you are satisfied that you have carried each strand out to its logical conclusion, shift to a convergent tool to identify the most critically important views of the situation.

Using the divergent tools above, or others that might be familiar to you, will generate many different pieces of data. Now that you have stretched to examine the situation from as many angles as possible, what comes next? In each step of the CPS process, divergent thinking is balanced with convergent thinking. In order to make the diverged data more manageable, you need to converge on data that are most important. The next section describes some Thinking Tools that help to narrow down a large set of data.
CONVERGENT THINKING TOOLS
FOR ASSESSING THE SITUATION

Have you ever heard someone use the expression “Too much information”? This phrase is typically used when someone feels overwhelmed by information or learns something he or she did not want to know. You might feel this way as you look at the large amount of data generated through the divergent tools in Assessing the Situation. In CPS, it is critical to identify the salient pieces of data to move forward. There are convergent Thinking Tools that we can apply in Assessing the Situation to avoid this feeling and to identify the most relevant pieces of data.

Table 5.3 provides a summary of some convergent Thinking Tools that can help you identify the most pertinent data in your situation.

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<thead>
<tr>
<th>Tool Name</th>
<th>What the Tool Does</th>
<th>What You Do</th>
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<tbody>
<tr>
<td><strong>Hits</strong></td>
<td>Uses an intuitive approach to identify the most pertinent data within a large set. Reduces individual data points to a more manageable number.</td>
<td>Review your list of data. As you look over your data, mark those items that jump out at you or seems most relevant to the situation.</td>
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<tr>
<td><strong>Highlighting</strong></td>
<td>Identifies the most relevant individual pieces of data and then organizes individual data points into clusters.</td>
<td>There are three basic steps to Highlighting. First, identify the Hits among your data. Second, group only those data that have been selected into categories. Third, name each category.</td>
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**Hits**

Hits is a convergent tool that is used extensively with all kinds of thinking because of its simple but effective convergent function—selecting. Believe it or not, sometimes decision making is just that—simple—and once you select, you can move on to a variety of actions.
that may or may not require CPS. Hits is a straightforward tool. Scan the array of data that has been generated and put an asterisk, check mark, or some identifying mark beside the ones that are interesting, intriguing, or capture the essence of the problem situation. You don’t have to have a specific reason for all the hits you select. Often with this tool the choice is more intuitive, for example, it “grabs” you; you like it, but you can’t really articulate why; it feels right. Be sure to deliberately select some novel hits even if you have to go back and look again.

When using this tool in a group, give each individual an equal number of hits, generally between 3 and 10 hits depending on how much data was generated—the more data the greater number of hits. Allowing all group members an opportunity to select data enables the group to develop a shared understanding of the key factors in the situation.

**Highlighting**

Highlighting combines selection (hits), compression (clustering), and restatement (abstraction) into one tool. To use Highlighting, follow these steps:

1. **Review the principles for convergence.** Use the principles for convergent thinking to guide your use of this tool.

2. **Number all the options.** If you recorded your data on a sheet of paper you will need to number the data. If you used sticky notes to capture your data this is not necessary.

3. **Identify hits.** Select hits using the procedure already described.

4. **Cluster the data.** Examine only the hits to see if any of them are similar, have something in common, or could be productively grouped together. List the numbers of the hits that go together on paper or computer screen and circle them so you can see what belongs together. If the data are recorded on sticky notes simply move like data into groups. The amount of hits in each cluster will vary—you can have “hot spots” that contain a number of options or a group of as few as two hits. Don’t force all data into groups. Allow unique data points to stand alone.

5. **Label each cluster.** Identify a representative word or phrase that clearly and concisely captures the theme of each cluster. Ask yourself, “What is this cluster really about?” Restate what the cluster is about in a word or phrase that captures the meaning
and intent of all the hits inside. Restating may move you to a higher level of abstraction, which is a broader view of the data contained within that set. There is no need to restate single data points.

Using Convergent Tools Throughout the Process

The general nature of the Thinking Tools used for convergence in Assessing the Situation make these tools useful in every step of the CPS process. These tools are all-purpose ones, and we will therefore refer to them when describing convergent thinking in subsequent chapters on the six remaining process steps. The selection function of Hits, in particular, makes this an all-purpose converging tool that can be used in every step of the process.

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GETTING AROUND IN THE CREATIVE PROBLEM SOLVING PROCESS: METACOGNITIVE TOOLS FOR DETERMINING NEXT STEPS

Recall that Assessing the Situation has two functions. The tools presented so far are designed to assist you in gathering data (i.e., the divergent tools) and selecting the most important data (i.e., the convergent tools). Now what? It is time to execute the second function of Assessing the Situation—determining where to go next (see Table 5.4). The first tool, called the 4 I’s, is designed to help determine whether or not it is worth applying CPS to the situation that has just been diagnosed. Not all problems require creative thinking; we recommend using the 4 I’s to avoid putting creative energy into a problem that does not warrant this level of thinking. If you determine that it would be beneficial to apply CPS to the problem, you will then need to decide where to go next in the process. The next two metacognitive tools, Key Word Search and If-Then Process Analysis, are designed to help you identify the most appropriate process step after Assessing the Situation. These tools are used to make a bridge between Assessing the Situation and the most productive process step to apply to the problem. Because metacognitive thinking is required to guide progress through the CPS process, these tools can be used at the conclusion of each CPS process step to determine which step to use next. In many cases, this quick diagnosis
will take you forward; however, sometimes the most productive action is to go back into a previous process step, skip forward several steps in the process, or simply exit CPS and use the new insights to take action.

4 I’s

Before proceeding into any of the other CPS steps, you need to determine whether the situation requires creative thinking. If the problem does not require some new thinking—you already know what to do—then it makes little sense to use a process that will intentionally introduce new considerations that you don’t really want. Thus, before going further into CPS, we recommend using a simple screening tool called the 4 I’s (Isaksen & Treffinger, 1985).

When examining the problem for which you identified the critical data, ask yourself whether this situation satisfies the following four criteria:

**Influence:** Will the individual or group who brought the problem forward be in a position to impact or change the situation? When a solution to the problem has been identified, will those who brought it forward have the authority or potential to implement the solution?

**Imagination:** Does the problem require creative thinking and does the individual or group desire new thoughts or approaches for the situation?

**Interest:** Is this an important problem, and does the individual or group recognize the need to spend time explicitly working on it?

**Immediacy:** Does the situation require attention now or in the near future?

The 4 I’s is a metacognitive tool because it requires people to reflect on a basic process decision: “Does this problem warrant the use of CPS?” If the problem satisfies the four criteria, then CPS could be helpful, and the next process decision is to determine which of the six process steps would be most useful as a starting point.

**Key Word Search**

The words you use to describe a situation give an indication of the initial thinking required to make progress on the problem you face. In **Key Word Search**, you use verbs to determine where to go in CPS. Table 5.5 categorizes different verbs based on their relationships to the
Table 5.4  Assessing the Situation: Metacognitive Tool Overview

<table>
<thead>
<tr>
<th>Tool Name</th>
<th>What the Tool Does</th>
<th>What You Do</th>
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<tr>
<td>4 I’s</td>
<td>Helps an individual or group determine whether the problem identified is a good match for the CPS process.</td>
<td>Use the four criteria to evaluate whether the identified problem would benefit from the CPS process. Begin by determining whether the person or group that brought the problem forward can have a direct <strong>Influence</strong> on the situation. If so, then explore the degree to which <strong>Imaginative</strong> solutions will be sought. Finally, determine how much <strong>Interest</strong> there is in resolving the situation and the <strong>Immediacy</strong> of the situation.</td>
</tr>
<tr>
<td>Key Word Search</td>
<td>Presents a list of words that describe activities associated with different steps of the process. These key words can be used to help you identify where you need to be in the process.</td>
<td>After reviewing your converged list of data, create a task statement that captures the situation. Identify the verb used in your statement and compare it to the list of key words associated with the six remaining CPS steps. Use this list to create alternative task statements. Select a final task statement and proceed to the CPS step that is most associated with your task statement.</td>
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<tr>
<td>If-Then Process Analysis</td>
<td>This metacognitive tool locates people within the CPS process by presenting a list of If-Then scenarios. The “If” portion of the scenario describes the process need, while the “Then” aspect identifies the most appropriate process step to be taken. For example, if the need is to come up with ideas to overcome a challenge, then go to the Exploring Ideas step.</td>
<td>Consider what your process need is relative to the problem. Starting at the top of the table, read down the column of “If” statements until you find a statement that matches what you believe you need to do. Each “If” statement is paired with a “Then” statement that indicates which process step best fulfills your need. Find the process step that aligns with the If statement you identified and proceed to that step of the CPS process.</td>
</tr>
<tr>
<td></td>
<td>Source: Adapted from Miller, Vehar, and Firestien (2001).</td>
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</tbody>
</table>
steps in the CPS process. For instance, when someone says he or she wishes to “consider,” this indicates a need for Visionary Thinking and thus the Exploring the Vision step of CPS, whereas using the word “implement” suggests a need for Tactical Thinking, which is carried out in the Formulating a Plan step.

Table 5.5 Key Word Search

<table>
<thead>
<tr>
<th>Exploring the Vision</th>
<th>Picture, dream, look at, forecast, contemplate, see, speculate, ponder, wonder about, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formulating Challenges</td>
<td>Clarify, untangle, explicate, define, decipher, clear up, uncover, discern why, etc.</td>
</tr>
<tr>
<td>Exploring Ideas</td>
<td>Come up with, invent, break through, originate, innovate, hatch, fashion, think up, find a way, make up, design a way, etc.</td>
</tr>
<tr>
<td>Formulating Solutions</td>
<td>Develop, elaborate, expand, evaluate, flesh out, strengthen, refine, analyze, maximize, build on, etc.</td>
</tr>
<tr>
<td>Exploring Acceptance</td>
<td>Sell, convince, market, promote, leverage, influence, persuade, pitch, position, introduce, advocate, popularize, recommend, etc.</td>
</tr>
<tr>
<td>Formulating a Plan</td>
<td>Execute, implement, do, script, orchestrate, devise, plot, outline, organize, rollout, sequence, act, carry out, etc.</td>
</tr>
</tbody>
</table>


Follow these steps to take advantage of the link between the use of language and the nature of our thinking:

1. **Form a Task Statement.** Review the converged list of data and form an initial task statement. A task statement is a one sentence description of the situation. It provides an at-a-glance summary of the work to be carried out. A task statement should be informed by the data gathered as part of Assessing the Situation and begin with “I/we want to . . .” Some sample task statements are
I want to consider new career options. [Exploring the Vision]
I want to uncover reasons why my sales figures have declined. [Formulating Challenges]
We want to come up with ways to streamline the amount of bureaucracy our clients must go through to access our services. [Exploring Ideas]
We want to strengthen our after school program. [Formulating Solutions]
I want to recommend a new policy to central administration. [Exploring Acceptance]
We want to implement a new software system by the end of the third quarter. [Formulating a Plan]

The language used in the task statement can provide clues about where to go next in the CPS process. In particular, the verb can point to the kind of thinking and, therefore, the process step that is best suited to address the task. After each of the sample task statements above, we indicated which CPS process step might be the most appropriate place to go after Assessing the Situation.

2. Test Task Statement Using Different Verbs. Identify the verb in your initial task statement. See which set of verbs it most closely matches in Table 5.5. Insert different verbs from this list, both within and across the process steps, to see which make the most sense or best capture your intent.

3. Form Final Task Statement and Identify Matching Process Step. After playing with alternative ways of phrasing the task statement, identify the statement that best captures your situation. That is the statement that best describes what it is you wish to do. When working in groups, use consensus decision making to select the final task statement. Using the key words listed in Table 5.5, identify which process step your task statement is most aligned with and go to that step.

If-Then Process Analysis

A straightforward approach for identifying where to go next in CPS is to identify which of the functions of the six remaining steps best suits your purposes. The metacognitive tool called If-Then Process Analysis helps you to stand above the CPS process and determine which step would be most helpful for you (adapted from Miller et al., 2001).

As with the Key Word Search, you form a task statement that starts with “I/we want to...” The task statement should be based on your
key data and should summarize what you wish to accomplish. Once you have the task statement, use Table 5.6 to determine where you should be next in the CPS process. Think what you wish to accomplish and match this desire against the six “If” statements that describe the functions of each remaining CPS step. Read down the column of “If” statements and stop at the one that best describes what you think you need to do. When you find an “If” statement that describes your situation, read across to find out which of the CPS steps to go to next.

When working in groups, allow for consensus. Getting a group to make a decision about where to go next in the CPS process can avoid going in circles. Many problem-solving meetings get off track because participants are actually working in different parts of the creative process. Explicitly coming to a group decision about which part of the process you are working in can save time, reduce frustration, and improve the outcome of your efforts.

**Table 5.6  If-Then Process Analysis**

<table>
<thead>
<tr>
<th>If</th>
<th>Then</th>
</tr>
</thead>
<tbody>
<tr>
<td>You need to establish the goal or the desired outcome of your efforts</td>
<td>Go to Exploring the Vision</td>
</tr>
<tr>
<td>You need to identify the obstacles or barriers that need to be addressed to achieve the desired outcome</td>
<td>Go to Formulating Challenges</td>
</tr>
<tr>
<td>You have identified a specific challenge (or challenges) that, if overcome, will move you in the direction of your desired outcome, but do not know how to address this challenge</td>
<td>Go to Exploring Ideas</td>
</tr>
<tr>
<td>You have ideas that need to be transformed into workable solutions to a overcome a challenge</td>
<td>Go to Formulating Solutions</td>
</tr>
<tr>
<td>You have solutions or a proposed change you wish to carry forward and want to ensure the environment will support your thinking</td>
<td>Go to Exploring Acceptance</td>
</tr>
<tr>
<td>You have solutions or a proposed change and you are not sure what steps need to be taken, and in what sequence, to implement your thinking</td>
<td>Go to Formulating a Plan</td>
</tr>
</tbody>
</table>

*SOURCE: Based on Miller et al. (2001).*
APPLYING WHAT YOU’VE LEARNED

For leaders, collecting information and using it to clarify, generate, or implement is a critical task. Sometimes there is only one piece of information on which a critical decision flies or fails. With practice, you can improve how you find, sort, use, and monitor large amounts of information. Try honing your Diagnostic Thinking skill by completing the following:

- Sharpen your general observation skills by closing your eyes and visualizing your office or a familiar room in your house. Then compare what you pictured to what is actually there. How well were you able to do this? Practice this on a regular basis to see whether your observation skills improve.
- Identify one personal or professional predicament or opportunity you have in your life. Diverge to gather all the data about it that you can think of. Use the divergent guidelines and really stretch for quantity and novelty; try to get at least 50 pieces of data. Include your feelings, hunches, and intuitions as well as facts. Examine the results. Were you surprised at any of the information? Was there anything new or different that you had not previously thought of?
- Look over your divergent list above. How can you begin to manage the amount of information you gathered? How will you know what is critical or not? What strategies do you usually use for this kind of decision making? Now apply the Hits tool to help you select the most important data from this list. How does this help in information management? Are there any actions you could take from just identifying and selecting key data?
- Get in the habit of thinking about your thinking. When you complete an activity or a task, take a few minutes to debrief it by asking, “What did I do to accomplish this?” “What was effective in my problem solving and what could I improve on?” Keep a notebook or list of these things for future development.