

TEN (10) TIPS FOR “BEEFING UP” YOUR PROBLEM-SOLVING TOOL BOX

by Fred Nickols

Problems come in all sizes, shapes, and colors. There is no single or simple step-by-step process guaranteeing us we will solve every problem we encounter. We are faced instead with the requirement to configure or adapt our problem solving processes to fit the problem at hand. As problem solvers, we have more in common with the cabinetmaker than with the assembly-line worker. What we need, then, are plans and blueprints, high-quality materials, a decent place to work, a well-stocked toolbox, and the skill and knowledge necessary to properly select and use the tools in it. Toward that end, here are ten (10) tips—ideas for “beefing up” the tools in your problem solving toolbox.

1. **Focus on the solved state.** Pay at least as much attention to the solved state as is paid to the problem state. One is to define it the same way we would define the problem state (more about that under Tip #3). Another is to list possible measures or indicators of its attainment. Ask yourself questions like these: “How will I know the problem has been solved? What will I accept as evidence? What does the solved state look like?” Yet, a third way is to be clear about all the goals and objectives of the problem solving effort. (This last point is so important that it constitutes a tip all its own—the next one.)
2. **Be clear about all your goals and objectives.** One way of examining the multi-dimensionality of our goals and objectives is to compare and identify any disparities between our perceptions (what we have) and our preferences (what we want). For any problem situation, it is useful to ask the following questions as a way of clarifying all your goals and objectives:
 - What are we trying to achieve?
 - What are we trying to preserve?
 - What are we trying to avoid?
 - What are we trying to eliminate?
3. **Expand your definition of “Define the Problem.”** To define means to establish boundaries, to encompass, to enclose, to locate, to isolate, to distinguish, to differentiate, to set apart. To define the problem state (or the solved state) means, at the very least, to do the following:
 - To establish boundaries; to delineate (*Locate*).
 - To give distinguishing characteristics; to differentiate (*Isolate*).
 - To state the nature of; to describe precisely (*Articulate*).
 - To state the meaning of; to provide a definition (*Explicate*).

4. **Think of problem solving as a cover-the-bases activity.** A systematic approach is necessary but the point of having one is to make sure you tend to all the things that need tending to, that you “cover the bases,” not trot around them in a 1-2-3 fashion. Here is a list of 12 “bases” to be covered or tasks that typically need tending to, in the course of solving a problem:
 - Defining the problem state.
 - Specifying the solved state.
 - Modeling the structure of the problem.
 - Finding and fixing the “cause” of the problem.
 - Engineering a solution.
 - Settling on a course of action.
 - Reconciling restraints and constraints.
 - Obtaining support and consensus.
 - Preparing plans and schedules.
 - Taking action.
 - Assessing its effects and consequences.
 - Adjusting future actions as required.
5. **Draw diagrams, and otherwise, picture the structure of the problem.** A picture or model of the elements and relationships in a problem situation will help you to more quickly and more completely grasp the situation and figure out what to do about it.
6. **Take the concept of cause with a grain of salt.** If ever there was a time-waster in problem solving, it has to be the search for the cause of the problem. Don’t misunderstand—the concept of cause is frequently relevant, but its usefulness depends on the kind of problem being solved. It’s not relevant all the time and, for some problems, it’s never relevant.
7. **Watch out for “disconnects”.** The term “disconnect” refers to the uncoupling of solutions from the problems they are intended to solve. This commonly happens when one person or group of people defines the problem, a second person or group of people is assigned to figure out what to do about it, and yet a third person or group of people is tasked with actually implementing the solution.
8. **Be aware of your own blinders.** We all wear a custom-tailored set of “blinders,” that is, perceptual and value-based filters that lead us to see or not see certain

things, or to interpret them in certain ways. These blinders are sometimes useful, sometimes not. In all cases, it pays to know what they are.

9. **Develop your own system for solving problems.** As a problem solver, you must develop your own system for solving problems. You have to develop a scheme whereby you can tell if a given problem solving tool is useful or not and put it to use accordingly.
10. **Research the subject matter.** There is no easy way, no shortcut to becoming a first-rate problem solver. It takes years of work and study and practice and researching the subject matter.

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