

Problem-Solving Cycle Activity

Purpose	To get all staff involved in thinking through a problem before jumping to solutions. This activity can also result in a comprehensive data analysis design. By starting with hunches and hypotheses, all staff can get their voices heard. When voices are expressed, there is a better chance of all staff using the information later. (The first three steps in the problem-solving cycle are <i>key</i> and the focus of this activity.)
Target Audience	All staff
Time	One hour for the first three steps of the cycle
Materials	Chart pad paper, masking tape/tacks, and markers. Handouts for each participant: problem-solving cycle and questions worksheet.

Process Protocol	<p>Make sure each person has a copy of the handout and that you are prepared to help small groups identify their problem(s) in objective terms. You will need about one hour to get through the first three steps, if getting the data analysis is your focus. Analyzing the data will take another two hours—probably at a different time. Developing the action plan will take days with small groups going back to the larger group (see <i>Action Planning Activity</i>). Implementing the action plan is the ongoing work of the learning organization, as is evaluating the implementation of the action plan and improving the processes.</p> <ol style="list-style-type: none">1. Establish the size of the group(s) that will be going through this activity. Small groups are beneficial in allowing everyone to participate, even if groups are working on the same problem.2. Start out with guidelines or ground rules of acceptable and unacceptable behavior, and how they will be monitored. Make sure it is a “safe” room for threat-free, honest, open discussion.3. Have each group clearly identify a problem to be solved, stated in objective terms. For example, <i>Not all students are reading at grade level by grade three</i>, as opposed to, <i>40 percent of our students are not capable of reading by grade three</i>. The problem should let you find the data.4. Brainstorm 20 hunches and hypotheses about why the problem exists (takes about ten minutes). This can spell out what teachers are thinking about the problem currently. You could also use a “cause and effect diagram.”
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Bernhardt, V.L. (2018). *Data analysis for continuous school improvement* (4th ed.), (p. 353). New York, NY: Routledge.

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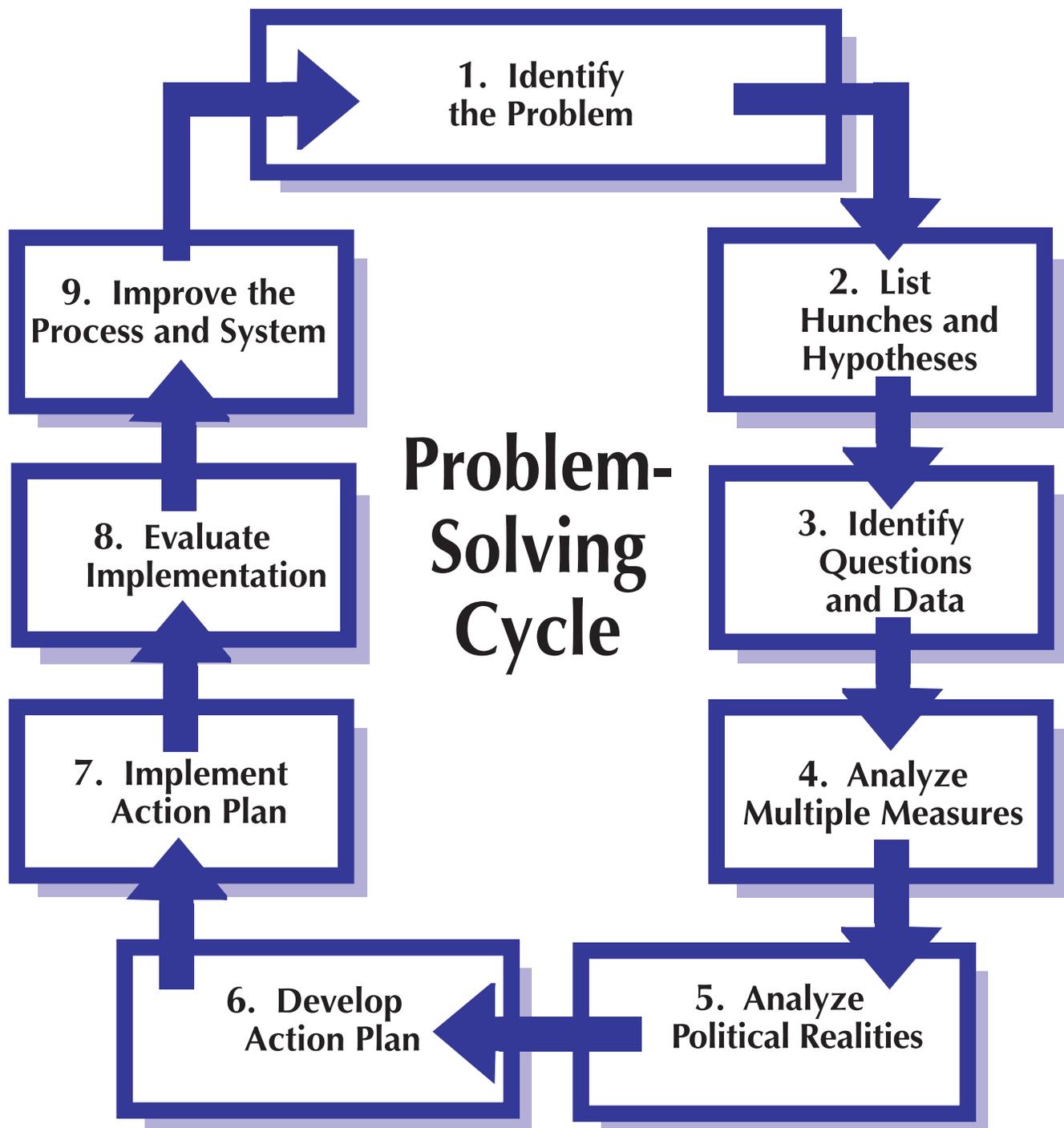
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5. Considering the problem, identify questions that need to be answered to find out more about the problem (e.g., *How many students have not been reading on grade level by grade three for the past three years?*) Get at least eight questions.
 6. For each question, determine the data that need to be gathered to answer the question. This list becomes the data analysis. Eye-balling this list, one can see that for the most part, the data will fall into the four categories of demographics, student learning, perceptions, and school processes. (At this point, you should have uncovered new ways of looking at the problem. This might be as far as you go on this day.)
 7. Have the groups share their problem-solving cycle, letting others add to it, if appropriate.
 8. Gather and analyze the data. This is often where the schools have the most trouble because they do not have the data available. Help them get the data that they ask for above.
 9. Continue with the problem-solving cycle through action planning and implementation (see other activities).

Comments to the Facilitator

When reviewing the results of the process, note the last 3 or 4 hunches. These are usually very close to the contributing causes of your “problem,” which is really the result of your current processes. The first and last questions are very important to the solution.

The first three steps are important for getting the data analysis established—the focus of this activity.

**Figure I-1
STEPS IN SOLVING A PROBLEM**



Bernhardt, V.L. (2018). *Data analysis for continuous school improvement* (4th ed.), (p. 355). New York, NY: Routledge.

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**Figure I-2
HUNCHES AND HYPOTHESES**

Identify the problem.
List hunches and hypotheses about why the problem exists.
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20.



What questions do you need to answer to know more about the problem, and what data do you need to gather?

Questions	Data Needed