

MPS8-1

MPS 8 Define-the-stated-problem Objectives © copyright, Donald R. Woods, 1998

Define-the-stated-problem is the second stage of the process of **Defining the real problem**. Here we classify the given information. We resist the temptation to try to define the real problem. We classify.

Depending on your personal preference, you might draw a diagram, create symbols and identify the system.

Skill development:

1. Application of classification skill, from MPS 6, to the given information in a problem.
2. More practice on applying the strategy, introduced in MPS 4, to solve problems.
3. Further nurture an attitude of being patient with the problem solving process; not jumping into the problem solving process.
4. Skill with the second of three stages in **Defining a problem**.
5. Further application of skill in criteria and goals that was developed in MPS 3.
6. On the one hand, you will develop a better understanding of your personal style; on the other hand, for much of the task, everyone will do it the same.
7. Learn more about target skills for problem solving.
8. Through the *everybody-share* technique, build more skill in giving and receiving feedback.
9. Through the *everybody-share* technique, acquire skill in extracting common ideas.

Pretest:

Awareness: how aware are you of what you do when you use this ability? Rate with an "x"

0	1	2	3	4	5	6	7	8	9	10
Unaware				Aware of						Very aware
I just				Some						I can describe
do it										The details of
										how I do it

Skill: how skilled are you in doing this activity? Rate with an "x"

0	1	2	3	4	5	6	7	8	9	10
Poor		Fair		Good			Very good			Excellent

Comments:

Learning objectives

MPS 8 Define-the-stated-problem

1.1 given a term listed under "concepts introduced", you should be able to give a word definition, list pertinent characteristics and cite an example.

4.1 given a problem statement, you will be able to identify the words that describe the goal, the unknown to be solved for or the decision to be made. These will be 100% correct as judged by peers or the tutor.

4.2 given a problem statement and the task of identifying the goal, you will not include more than 20% new words or redefined terms. For example, if the

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statement said *calculate* then you will not replace it with the word *determine* at this time. You may later; but not now in define-the-stated-problem stage. These will be 80% correct as judged by peers or the tutor.

4.3 given a problem statement and the task of identifying the goal, you will delete at least 80% of knowns, criteria and constraints. These will be 80% correct as judged by peers or the tutor.

4.4 given a problem statement, you will be able to identify or list the given information. These will be 80% correct as judged by peers or the tutor.

4.5 given a problem statement, you will be able to identify or list the stated constraints. These will be 80% correct as judged by peers or the tutor.

4.6 given a problem statement, you will be able to identify or list the inferred constraints. These will be 80% correct as judged by peers or the tutor.

4.7 given a problem statement, you will be able to identify or list the stated criteria. These will be 80% correct as judged by peers or the tutor.

4.8 given a problem statement, you will be able to identify or list the inferred criteria. These will be 80% correct as judged by peers or the tutor.

6.1 given an everybody-share technique, you will be able to assess the degree to which a peer's efforts **help** or **hinder** your approach to solving problems. You will elaborate to provide evidence for your assessment. You will refrain from assessing the effort as *good* or *bad*.

Concepts introduced Goal, criteria, constraint, inferred criteria, inferred constraint,

MPS 8: Define-the-stated problem Example assessment tasks:

1. For the problem given in Table 1,
 - a) what is the goal?
 - b) what are the stated criteria?
 - c) what are the stated constraints?
 - d) what are the inferred criteria?
 - e) what are the inferred criteria?
 - f) what are the givens?