

MPS 36: PBL meetings:

Activity 36-3: For problem #1, everyone read the problem carefully.

We have the MPS 6 step approach to problem solving:

Step 1: Read it carefully. Check any words whose definitions we don't understand. Say "*I want to and I can*"

Step 2: Define: Is it clear what we are asked to do? Usually not. Usually a situation is described. Is everyone clear about the situation. In this situation: Who is involved? who is not? Where is? where is not? When is? when is not? What is? what is not?

Step 3a: Explore: what do we know already? How is this situation related to what we already know?

Step 3b: Explore: create our group "internal representation" of this situation. Brainstorm the kinds of issues, factors, stuff we need to know for this situation. Do this from a variety of different perspectives. Try for at least seven different viewpoints. Keep, in general mind, the context of the course and subject we are considering. For example, this scenario is in the context of a course in "Chemical Engineering" and about energy. Let's make sure that that is one perspective we consider.

Step 4: Plan: let's cycle through the various issues and see which ones **all** of us know already, which ones some of us know about and which ones none of us have a clue. Then we will prioritize these using the criterion that each of us has about 5 hours we can devote to researching and preparing to teach and we have six members in our group.

Step 5. Do it: systematically follow the plan

Step 6: Look back. Is it achievable? Let's get the tutor to check that our list is consistent with the program's goals for this case.

Activity 36-4: For the objectives agreed upon for Unit 3, what resources might be most appropriate? are they likely to be available?

Who is doing what?

What form of the information is expected from me? duplication of the key pages? summary notes? list of key references for others?

How can I best teach the others what I have learned?

Which of the objectives do I satisfy from what I have learned? How would this be applied to solve the "problem"?

Answer these and other pertinent questions from within your group. Use memos to record in writing what you agreed to do. Each is contracting with the other group members. Consider creating a written contract with the group.

On Your Own

You are on your own. You have a task to do. The resources you thought might be there, are not. The resource that you hoped would be helpful is useless. But through it all you obtain the knowledge needed by the group.

Before you return, however, you realize that you are the only one assigned this topic and you must, in a very short time, teach this information/ knowledge to the others. How to do this? Recall from MPS Unit 12.

- start with an overview, highlight the structure, where this fits in;

- provide clear definitions - if for no other reason than to facilitate communication.

- do something in writing; clearly cite references, perhaps you each want to type up your material on Word Processing; bring your diskettes to discussion with a printout. Then, all of the information can be discussed, elaborated on and collapsed into one set of composite notes.

- embed the information into the problem;

- perhaps supply beetle diagrams or Gowin Vees.

Now, consider the learning preferences and styles of your group members (as summarized in Table 36-5). Recall how best they learn. Reconsider your notes. Did you only give an example? Then the Jungian **S** people will like that approach but the dominant **N** people will not. Vice versa if you gave only the theory.

Day 1: **Goals Meeting** Is the Focus to be Objectives? or problems? or both? Activate past knowledge. how is this related to what you already know?

What questions should be asked?

What are the issues and components that should be considered?

What resources are available?

How do the learning Contracts of all members compare? How best can we satisfy them all?

Who does what?

Provide feedback to the chairperson about skills.

Day 2, **Teach Meeting:** Share Findings, teach each other

Embed new knowledge into the problem and past experience; make sense out of it.

Present and summarize validating evidence

Elaborate: create a variety of related situations that you can now solve that are based on the same fundamentals

Provide feedback to the chairperson about skills.

Provide feedback to each person about the process.

Day 3: **Feedback/exam meeting** Each prepares a good 10 min question (and answer); brings to the meeting.