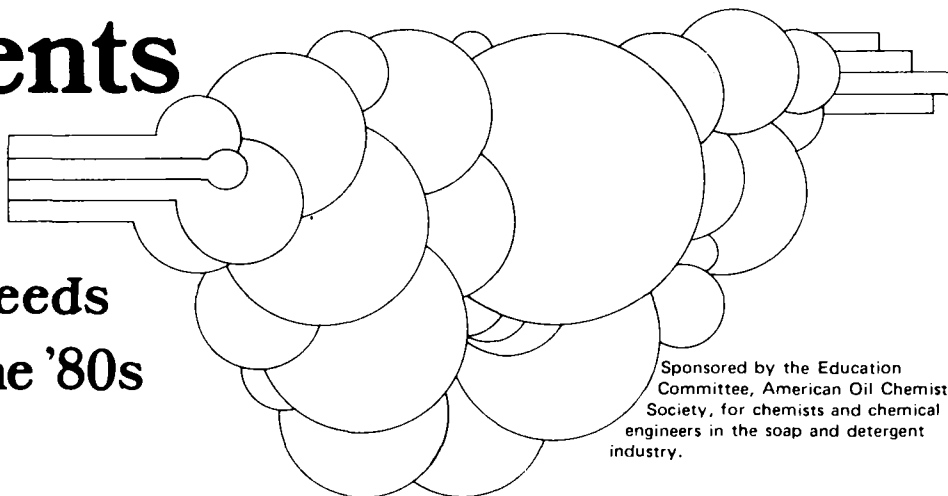


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Session 4

✿ Synectics

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ABSTRACT

Group problem solving techniques can be useful even if they are rarely used with a group. The principles involved can help identify problems earlier and lessen any tendency to put off solving them; and one becomes willing to tackle more difficult, complex problems. In the corporate environment, these techniques are often used as communication aids among groups in place of more traditional meetings. They can be much more effective for problem interface situations where groups are in conflict, or else just talk a different language. Such techniques are described in this paper.

USEFUL PROBLEM SOLVING TECHNIQUES

The four fundamental steps involved in the process of problem solving can be listed in the following approximate order: 1—recognition of the problem; 2—analysis of the problem or gathering of information; 3—unconscious processing; 4—synthesis/new ordering/redifinition/possible solutions.

Most techniques used in problem solving or invention concentrate on either (a) systematizing the analysis and information gathering step or (b) stimulating unconscious processing. These techniques originated from two main sources: the study of individuals inventing or problem solving (either directly or by case study/literature) and the study of groups engaged in problem solving. Group techniques generally also employ additional rules to help reduce the "people" problems involved and to increase useful behavior.

The factors involved in people problems include excessive competition, negativism, domination, premature

judgment or non-listening. An increase in useful behavior may develop from building on ideas of others, giving credit/encouragement and preserving individual points of view. These techniques are frequently employed in place of traditional meetings to engender group cooperation among diverse groups, groups that work together infrequently, or groups in which conflict is likely to interfere with mutual problem solving.

Most of the literature on problem solving aids and techniques concentrates on usage by groups. However, this paper will focus on how these techniques can be used by the individual for problem solving and how appreciation of the flow of problem solving can also help.

The following plausible problem is selected as an illustration of this technique: stabilizing a liquid product containing chlorine bleach. A few of the factors which should be considered are: pH, ionic strength, purity of raw materials, purity of the chlorine source, and heat/shear used in processing.

One useful technique is the "How to," devised by Synectics, Inc., a company which specializes in problem solving services. An example from the Synectics process is:

- How to have chlorine purify itself?
- How to coat chlorine in armor?
- How to find a more stable chlorine?
- How to have chlorine touch only the clean side of other raw materials?
- How to polymerize chlorine?
- How to obtain metastable chlorine complexes?
- How to generate bleach only when product is used?
- How to form chlorine that never gets wet?
- How to form a dry liquid?
- How to screen for purity quickly and cheaply?