

## **An Examination of Group Problem-Solving Effectiveness**

Hirokawa's purpose was to determine whether successful and unsuccessful problem-solving groups interact differently over time. The subjects were 80 introductory speech communication students from a large university. They were screened to be sure they had no prior instruction in group discussion and that they were unfamiliar with the tasks used in the study.

Subjects were randomly divided into 20 four-member groups. Methods involved asking each group to solve a problem about how to control speeding in a large metropolitan area. Each group was videotaped during a 30-minute discussion of the problem. Two National Highway Safety Administration officials evaluated whether group solutions would remedy the problem, were economically feasible, and were free of sociopolitical problems.

Evaluations were made by rating each solution on a scale from 1 to 7 for each criterion. A successful group was one receiving at least a 6 on all three criteria, while an unsuccessful group had to receive no greater than a 2 on all three criteria. Five groups were identified as successful and four as unsuccessful.

Each utterance of each group member was coded in terms of the function it performed for the group. Each utterance was coded as an analysis of the problem, an establishment of evaluation criteria, a generation of alternative solutions, and evaluation of alternative solutions, an establishment of operating procedure, a positive socioemotional comment, or a negative socioemotional comment.

To analyze the data, Hirokawa divided each session into eight equal time segments. The total percentage of units in each category was then computed. This allowed him to look for overall differences in terms of how often and when groups used a particular kind of comment. He could thus determine whether a certain kind of comment was used more frequently in certain phases than in others.

The results were as follows. Successful groups analyzed the problem before seeking a solution, while unsuccessful groups began to work on a solution immediately. In addition, successful groups tended to produce fewer negative socioemotional utterances than unsuccessful groups. While these general findings were clear, Hirokawa did not find evidence for similarities in phase sequences either within each type of group or between them. Each group appeared to follow its own individual path toward task accomplishment. These results indicate either that groups do not pass through similar task phases or that the functions used in his coding system are not adequate for differentiating phases in group interaction.

Source: Randy Y. Hirokawa, "Group Communication and Problem-Solving Effectiveness: An Investigation of Group Phases," *Human Communication Research*, 9 (Summer 1983), 291-367.