

# Cooperative Learning

## What and Why?

Chemistry instructors have experimented with cooperative learning in creative ways: in laboratory activities, in problem-solving tasks, as an alternative to lectures, as students' work with computer-assisted learning, and even as a part of exams and quizzes. For example, participants in the ICE Fundamentals workshop at Wisconsin take exams in groups and complete group lab projects. During the second semester of general chemistry at UW-Superior, instructor Don Bahnick uses cooperative learning techniques to replace the traditional lecture. Dave MacInnes at Guilford College incorporates a cooperative learning project in which students from advanced organic, analytical, and physical chemistry classes are brought together for laboratory projects. We'll be going into more detail on these projects in later installments.

See [Types of Groups](#) on page 4.

### What Is Cooperative Learning?

Cooperative learning is much more than having students work in pairs because of insufficient equipment and supplies. John Walters of St. Olaf College describes the major premise of cooperative learning as "division of responsibility, not simply the division of labor." Cooperative learning involves a number of people working together to complete a precisely defined task. The task is such that

- group members need each other to complete it
- each member participates
- the group must decide how to achieve the stated goal of the task
- both the group and individuals are accountable to the instructor for the results of the work.

See [Cooperative Learning: Descriptions of Some Commonly Used Techniques](#) on page 5.

The nature and type of task is limited only by the creativity of the instructor designing the task.

### Why Should You Use Cooperative Learning Techniques in Your Classroom?

An abundance of reasons can be found in the educational research literature, from anecdotal evidence, and from our experience as instructors. All of us have observed that experienced students often seek out study groups or partners. Reports from those who use this technique are compelling: cooperative learning

- is consistent with the necessity for learners to process information actively before it can be learned in a meaningful way, that is, so that it can be applied to related situations.
- is consistent with many students' learning styles, particularly those of women and minorities (in fact, changes made in teaching methods to accommodate women and minorities have been shown to benefit all students).
- enhances achievement.
- enhances intergroup relationships, acceptance of others from different backgrounds, and student self-esteem.
- contributes to a "win-win" climate in your classroom *if your grading policy rewards cooperative efforts and deemphasizes competitiveness*. Efforts to get students to work cooperatively are counteracted by competitive grading schemes.

See [Learning Styles and Learning Modality](#) on pages 7 and 8.

See [Fulfilling The Promise of the "Seven Principles" Through Cooperative Learning: An Action Agenda for the University Classroom](#) on page 14.



## What and Why?

See Why Groups Fail: Student Answers on page 11.

See Another Perspective on Group Work on page 13.

***"...division of responsibility, not simply division of labor."***

Student attitudes and preferences are generally positive towards implementing this technique. Cooperative learning

- is preferred by many students, provided that their grade is not "hurt"—this necessitates the need for a grading system that rewards cooperative efforts.
- involves more student-talk and less teacher-talk; students are empowered to take control of their learning.
- provides a necessary social component to complement the cognitive activities.

The success of cooperative learning activities depends largely on how well student-buy-in, task design, and instructor management of group work are integrated. Cooperative learning cannot solve all classroom problems or create total equality, but it can be a useful tool in creating an active, student-centered learning environment. Of course, problems can arise. But there are ways of handling these challenges just as there are solutions when students work individually or competitively. We will discuss potential problems and solutions in subsequent installments of this series.

SAMM