

COOPERATIVE LEARNING

Students in Ms. Cimino's middle school class were beginning a unit on the regions of the United States. Ms. Cimino wanted students to understand how diverse the regions are. She explained that students would be working in small groups to create a class presentation about a specific region. Each presentation was to cover the geography, weather patterns, and economic/cultural activities of the region. Ms. Cimino told students that they could use the resources in the classroom, the library, or any of three Internet sites she had identified.

To facilitate the group work, Ms. Cimino began by dividing the class into groups of three and assigning a region to each group. Within each group, students agreed who would be the overall leader or organizer, the recorder of the group's discussions, and so on. Each group also decided how they would break up the work; because there were three students in each group, most groups divided the research into the three areas of focus Ms. Cimino had specified for the presentations. Ms. Cimino encouraged each group to take time every couple of days to evaluate each individual's progress as well as the group's overall progress, to solve any conflicts they were encountering, and to fine-tune their work as needed. Ms. Cimino met with each group periodically to monitor their progress, support their efforts to learn, and help them work together more effectively.

Ms. Cimino has used one of the most popular instructional strategies in American education — cooperative learning.

Over the past decade, cooperative learning has become one of the most popular, but often misunderstood, instructional strategies. According to Roger Johnson and David Johnson, recognized leaders in the field of cooperative learning, there are five defining elements of cooperative learning:

- *positive interdependence* (a sense of sink or swim together)
- *face-to-face promotive interaction* (helping one another learn, applauding effort and success)
- *individual and group accountability* (each of us has to contribute to the group achieving its goals)
- *interpersonal and small group skills* (communication, trust, leadership, decision making, and conflict resolution)
- *group processing* (reflecting on how well the team is functioning and how it can function even better) (Johnson, Johnson, & Holubec, 1993)

1. Use a Variety of Criteria to Group Students.

(See Illustration 1)

Teachers can use a variety of criteria to group students: interests, birthday month, first letter of their first names, or color of their shirts. Students might also be grouped randomly by drawing names from a hat. Research indicates that grouping students according to ability levels should be used sparingly, as the strategy might have very different effects on different students. To maximize students' experiences, teachers might use different criteria for grouping throughout the year, as exemplified in Illustration 1, and have students use the characteristics of cooperative learning in their groups.

2. Use Informal, Formal, and Base Groups.

(See Illustrations 2.1, 2.2, and 2.3)

Using informal, formal, and base groups (Johnson & Johnson, 1999) is one way to vary grouping patterns and activities, as shown in Illustrations 2.1, 2.2, and 2.3. *Informal groups* (e.g., pair-share, turn-to-your-neighbor) are formed for specific or immediate needs and can last for a few minutes or an entire class period. For example, informal groups can be used to clarify expectations about an assignment, to focus students' attention, to give students time to process information, or to provide closure on an activity.

Formal groups are designed to give students time to thoroughly complete an academic assignment. These groups may last for several days or even weeks. For formal groups, the teacher designs tasks that encompass all of the defining elements of cooperative learning — positive interdependence, group processing, appropriate use of social skills, face-to-face promotive interaction, and individual and group accountability (Johnson & Johnson, 1999). *Base groups* are long-term groups designed to provide students with support throughout a semester or an academic year.

3. Manage Group Size.

(See Illustration 3)

Research indicates that cooperative groups should be kept small. Many teachers follow the rule of thumb “the smaller the better.” Even though a particular task may seem to have enough work to occupy a large group, students may not have the skills necessary to work effectively in larger groups. Therefore, if resources allow, smaller groups are recommended, as exemplified in Illustration 3.

4. Combine Cooperative Learning with Other Classroom Structures.

(See Illustration 4)

Any classroom instructional strategy can be overused. Cooperative learning is no exception. Students need time to work independently to practice the skills and processes they need to master. If used too frequently, any strategy can lose its effectiveness; therefore it is best for teachers to vary the types of activities they use in the classroom, as exemplified by Illustration 4.

ILLUSTRATION 1: USE A VARIETY OF GROUPING CRITERIA

science and math

Dmitri was not happy when his new fourth grade teacher, Mrs. Gant, explained that they would be working in cooperative learning groups throughout the year. In third grade during science, he had been in the same group all year. He and the other members of the group had grown tired of working in the same group all year. He thought Mrs. Gant's class would be the same way, but he soon discovered that she ran cooperative learning groups a little differently.

During the life cycle unit in science, Mrs. Gant organized groups based on the types of pets students had or wished they had. Dmitri, who had an iguana, got to work with Jerome, whose sister had a python; Jane, whose family owned a couple of leopard geckos; and Danette, who wanted an iguana. Because the students all knew something about reptiles, they had some common prior knowledge to build on and could share stories that related to their learning about life cycles.

In math when they worked on factors and multiples, Mrs. Gant organized students according to their favorite numbers. Because Ms. Gant made an effort to organize students using different criteria for grouping, Dmitri was more motivated during the cooperative learning sessions.

ILLUSTRATION 2.1: INFORMAL GROUPS

homework assignments

Ms. Banner's third graders used homework sheets to record their assignments for each day, but sometimes the sheet just wasn't enough. Some students would forget to record an assignment; a few students would record the assignment incorrectly; often students weren't sure exactly what they were supposed to do, even after they had written it down.

At the end of each day, Ms. Banner made it a habit to ask her third graders to go over their homework sheets with a partner or in some kind of group (e.g., groups of three, groups of four). Students talked about homework expectations with one another and asked Ms. Banner for clarification when necessary. This process helped all of the students make sure they had the correct assignments for the day.

ILLUSTRATION 2.2: FORMAL GROUPS

pilgrims

Mr. Hall's class was studying about the arrival of the Pilgrims to Plymouth Colony, the first permanent settlement in New England. As part of the unit, Mr. Hall designed a cooperative learning activity that involved students in considering the term *pilgrim* in a broader sense. To introduce the activity, Mr. Hall explained that although many people have come to associate the word *pilgrim* primarily with the first English settlers who arrived in what is now Plymouth, Massachusetts, the term has a much broader meaning.

He first assigned students to groups of four to work on the projects, which were to be presented in two weeks. He passed out guidelines and other materials while he explained that each group was to research, design, and make an in-class presentation to help the class gain a broader understanding of the concept of a pilgrim. Specifically, he wanted each group to research the term and put together a classroom presentation or dramatization that demonstrated what they had learned.

Mr. Hall explained that each team member was to participate both in preparing for the presentation and then making the presentation. Grades would be given to each group and to each team member. Mr. Hall set aside class time for the groups to meet, assign roles for each team member, and begin to map out their work together. As students met in their small groups, they quickly realized that they would only succeed as a group if all of the members of the group succeeded — each team member's responsibilities were essential to the overall success of the project. Over the next two weeks, the team members worked on their assignments — both individually and in their groups — and periodically met to assess their work.

At the end of the two weeks, the groups made their presentations. One group presented a dramatization about the Muslim tradition of making a pilgrimage to Mecca (in present-day Saudi Arabia). Another made a presentation about the pilgrimages of the early Christians to the scenes of the Passion of Christ in Jerusalem. Still another made a presentation about the woman known as Peace Pilgrim who traveled across the United States on foot for world peace. And another gave a presentation about the Pilgrims who established Plymouth Colony.

As a completion activity, Mr. Hall asked students to use their journals to reflect on what they had learned about pilgrims. Students also reflected on their work together as a group, noting, in particular, things that “worked” and “didn't work” about the group effort. As a result of the cooperative learning activity, students gained a broader understanding of what it means to be a pilgrim, as well as greater skill in working effectively with others.

ILLUSTRATION 2.3: BASE GROUPS

language arts

Mrs. Garcia organized her seventh grade language arts students into base groups of three members each during the second week of classes. The base groups shared a number of responsibilities, including making sure an absent member received information and materials about any work he or she had missed, reviewing assignments and providing feedback for each other on “peer review” days, and working together to develop their skills in the research process.

Although Mrs. Garcia required students to individually complete most of the longer research projects, base group members were allowed to support one another. For example, Mrs. Garcia explained, a group member could read part of another student’s research paper and provide feedback; ask the rest of the group for suggestions about where to look for more resources, or practice an oral presentation with the base group.

Over the course of the year, students stayed in the same base groups. As a result, they were able to help each other identify strengths and work on specific weaknesses throughout the year. Members of the group came to trust each other’s opinions and feedback and developed a sense of camaraderie that helped them succeed with their learning.

ILLUSTRATION 3: MANAGE GROUP SIZE

Mr. Tempest organized his fifth graders into groups of six to work on their “Cities, Transportation, and Communication” project. As he watched the groups organize and begin their work, he realized the groups were too large. Students had plenty of work to do, but the dynamics of interacting and organizing with six people seemed overwhelming for them.

Mr. Tempest talked with his students about his observations. Students agreed that the groups were too large. Together, they reorganized the class into groups of three and adjusted the project time lines. As a result, students had an easier time coordinating the project with three people and spent more time focusing on their learning.

ILLUSTRATION 4: USE COOPERATIVE LEARNING IN MODERATION

Ms. Browder thought it was important for her students to learn from one another and strengthen their interpersonal skills. So when she first started teaching, she used cooperative learning groups three or four times a week — almost every class period. She thought most of her students enjoyed the group work.

Then Ms. Browder met Jennifer, who really liked to work alone. Jennifer participated in the cooperative learning groups but sometimes seemed frustrated and didn't always do her best work in the groups. One day Ms. Browder asked Jennifer about her experiences working in cooperative learning groups.

Jennifer explained that interacting with others in a group required a lot of energy and although she didn't mind cooperative learning sometimes, being part of a learning group nearly every day was too much. Jennifer said she felt distracted from her learning because she had to concentrate so much on working in the group. "Sometimes I just need time to think and practice quietly," she said.

After hearing Jennifer's comments, Ms. Browder decided to talk to the rest of the class. Other students felt the same way: They liked to work with each other, but not every day. A number of students said they thought it was better to work on some assignments alone.

After listening to her students, Ms. Browder changed the way she ran her classroom. She continued to use cooperative learning strategies, but used them less frequently. When she did use a group learning strategy, she varied the size of the groups and the activities as much as possible. In the following weeks, she frequently checked with students about how the activities were working for them. She soon realizing she was more effectively meeting her students' needs and more appropriately using cooperative learning strategies.

THEORY AND RESEARCH IN BRIEF • • •
Cooperative learning

Cooperative learning has a rich research history. Results from some of the studies that have synthesized research on cooperative learning are summarized in Table 7.1. Of the studies listed, the one most commonly cited is the 1981 study by Johnson et al. Perhaps most noteworthy about this research synthesis is that it contrasted cooperative learning with a number of related techniques, three of which are reported in Table 7.1: intergroup competition, individual competition, and use of individual student tasks.

Table 7.1: Research Results for Cooperative Learning

Synthesis Study	Focus	No. of Effect Sizes	Ave. Effect Size	Percentile Gain ^a
Walberg, 1999	Cooperative learning (general)	182	.78	28
Lipsey & Wilson, 1993	Cooperative learning (general)	414	.63	23
Scheerens & Bosker, 1997	Cooperative learning (general)	—	.56	21
Hall, 1989	Cooperative learning (general)	37	.30	12
Johnson et al., 1981	Cooperative learning (general)	122	.73	27
	Cooperative learning (noncompetitive groups) vs. intergroup competition	9	.00	0
	Cooperative learning (competitive or noncompetitive groups) vs. individual competition	70	.78	28
	Cooperative learning (competitive or noncompetitive groups) vs. individual tasks	104	.78	28

^aThese are the maximum percentile gains possible for students currently at the 50th percentile.

Chapter 7: Cooperative Learning

The Johnson et al. synthesis found that cooperative learning groups and groups that engage in intergroup competition have the same effect on student learning — they are equally effective. (This effect is indicated by the .00 effect size when the two strategies are compared.) However, cooperative learning has an effect size of .78 when compared with strategies in which individual students compete with one another (individual competition). Finally, cooperative learning has an effect size of .78 when compared with instructional strategies in which students work on tasks individually without competing with one another (individual student tasks). In general, then, organizing students into cooperative learning groups has a powerful effect on learning regardless of whether or not the groups compete with one another.

The strong effects of cooperative learning have encouraged some teachers to use the strategy for virtually every new learning situation. However, some psychologists warn against the “overuse” of cooperative learning. Specifically, Anderson, Reder, and Simon (1997) warn that cooperative learning can be *misused* and is frequently overused in education. These researchers argue that it is *misused* when the tasks given to cooperative groups are not well structured and *overused* when it is used to such an extent that students have an insufficient amount of time to independently practice the skills and processes they must master.