Designing Groupwork
Strategies for the Heterogeneous Classroom
Third Edition

A New Edition by
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videotapes of groups at work, we saw and heard some students softly and hesitantly disagree with the prevailing opinion of the group; they are on the right track and the group is not, but no one is listening to the ideas of a low-status group member. If some members are hesitant to speak up or are immediately dismissed or ignored when they do, even though they have better ideas, the intellectual quality of the group's performance suffers. A second way that status interferes with the productivity of the group is through subservience to the person who talks the most. We studied videotapes in which the group consistently turns for advice and direction to one student who, as it happens, is quite confused in her thinking, but the group persists in believing that she is the only one who has the required competence. The operation of status interferes with the quality of group performance in still another way. When two members of a group engage in a struggle over which one will be dominant, the quality of the performance almost always suffers.

From an educational perspective, what is the ideal pattern of group interaction? Over a series of groupwork assignments, one would hope that different students would play influential roles depending on their abilities, interest, and expertise; on the nature of the task; and on a number of chance factors. This is not to say that there is no such thing as differences in ability to contribute to tasks. When tasks are interesting, challenging, and varied, each one will require different abilities, and it would seem desirable for those who are strong in these abilities or who are expert in a particular topic to do more talking and explaining and to be viewed as more competent. These inequalities become a problem, however, when a student's status on a rank order that has nothing to do with the task becomes the basis for dominance in the group. For example, we can all recognize that ability in reading is a valuable skill and that readers can make an important contribution to a group task where some students have difficulty with reading. This becomes a problem when the good reader is assumed to be better at everything and thus dominates all aspects of groupwork. When ability in one area is used as an index of general intelligence and classroom competence, you are dealing with a status problem.

This chapter has posed a dilemma: Although groupwork is attractive for sound educational reasons, it can activate status problems within small groups. The following chapters, especially Chapter 10, contain specific suggestions about how to gain the advantages of groupwork without its drawbacks.

Preparation Students for Cooperation

The first step in introducing groupwork to the classroom is to prepare students for cooperative work situations. It is a mistake to assume that children, adolescents, or adults know how to work with each other in a constructive collegial fashion. The chances are that they have not had enough previous successful experience in cooperative tasks working with people who are not personal friends or family members. Although many students have had varying levels of contact with cooperative learning, often they did not receive adequate preparation for that experience.

Students who are prepared for cooperation will know how to behave in groupwork situations without direct supervision by the teacher. It is necessary to introduce new cooperative behaviors in a purposeful training program. The goal of such a training program is the construction of new norms, collective conceptions for how one ought to behave in group settings. Sometimes norms are explicit and written down, and sometimes they are unspoken expectations or obligations for behavior.

When an individual comes to feel that he or she ought to behave in this new way, the norm has become internalized. Internalized norms produce not only the desired behavior but a willingness to enforce expectations for the behavior of others within the group. In cooperative learning settings, even very young students can be heard advising other members of the group on how they ought to behave. Given their role in the classroom, teachers have extensive power to establish rules and to introduce new norms for classroom behavior.

In traditional classrooms, most rules focus on individual student behaviors: Do your own work; don't pay attention to what other students are doing; never give advice to or ask for advice from a fellow student while doing an assignment in class; pay attention to what the teacher
is saying and doing and not to anything else; keep your eyes toward the front of the room and be quiet. When dealing with younger students, many teachers reinforce these rules through repetition, reward, and punishment. By the time students are in high school, these rules have become internalized to such an extent that compliant students are quite unconscious of why they behave in class the way they do.

Working in groups involves a major change in traditional classroom norms. When assigned a group task, students are asked to depend on each other. Now students are responsible not only for their own behavior but for group behavior and for the product of group efforts. Instead of listening only to the teacher, they are asked to listen to other students. In order for the group to work smoothly, they must learn to ask for other people’s opinions, to give other people a chance to talk, and to make brief and sensible contributions to the group effort. These are examples of new norms that are useful to introduce before starting groupwork. Because these new behaviors involve interactions among students, the norms governing these behaviors need to be shared and internalized by all the students in the class. (See also Lotan, 2006.)

Studies of groups with no special preparation for cooperative learning suggest that if students are not taught differently, they will talk about specific procedures and will not discuss ideas or articulate their own thinking (Webb, Ender, & Lewis, 1986). If teachers want more productive and higher-level discourse, the students will need to learn specific skills for discussion and for working with each other. These are not an automatic consequence of cooperative learning. Some students have no strategies for dealing with disagreement and conflict other than physical or verbal assault.

Many teachers, particularly in secondary schools, feel so much pressure to cover curriculum that they hesitate to take time to prepare students for cooperation. This is not a wise decision: In the long run, more time is lost through disorganized group behavior than would be spent on advance training.

**GETTING STUDENTS READY FOR GROUPWORK**

Students need to understand your purposes in introducing small groups and why groupwork skills are important. Surprisingly, some students do not realize that adult life calls for working with people who are not close friends. Sometimes students feel that the instructor is trying to force them to be friends with classmates assigned to their group. When told that in the work world many important tasks are accomplished in small groups of people who are not personal friends, such as research teams, firefighting personnel, nursing teams, committees, and construction crews, they are still doubtful. Confirmation from parents or other family members about how adults work might make them more willing to accept membership in groups composed by the teacher.

Preparing students for cooperative groups requires you to decide which norms and which skills will be needed for the groupwork setting you have in mind. These norms and skills are best taught through exercises, games, and activities referred to as skillbuilders. People rarely learn new behaviors or convictions about how one ought to behave through lectures or general group discussion alone.

The remainder of this chapter will provide the principles for a program designed to get students ready for productive groupwork. Appendix A contains detailed instructions for a number of skillbuilders that have worked well for many teachers. What if none of these particular activities exactly fits the skills and norms needed for your training program? Once you see the principles on which they are based, you can adapt the activities described or make up some of your own.

One note of caution about the skillbuilders: Don’t judge their suitability for your class by whether or not they seem too easy for your students. The point of the activities is to learn how to work together. The tasks themselves are just a vehicle for new skills and norms. Not an end in themselves. They should not be too complex; otherwise students will be distracted from group processes and will become too involved in the activity for its own sake. In each case, the key to learning lies in the combination of the experience and the discussion that follows. The teacher assists the class in reflecting on important features of what has happened and in developing key insights about the relevance of this experience to the forthcoming groupwork.

**Responding to the Needs of the Group**

Responsiveness to the needs of the group and its members is a skill required of any kind of cooperative task. If students are oblivious to the problems experienced by peers, the group will not function properly, the group product will be inferior, and the interaction will not
provide the necessary assistance for all its members. It is necessary that students learn how to become aware of the needs of other members of the group and to feel responsible for helping them for the sake of the group product.

One of the best ways to teach this skill is with a group exercise called Broken Circles. It was developed by anthropologists Nancy and Ted Graves (1985) based on the classic exercise called the Broken Squares problem (Pfeiffer & Jones, 1970). In Broken Circles, a puzzle cannot be satisfactorily solved until group members become aware of problems being experienced by others and are willing to give away their pieces of the puzzle in order to attain the group goal.

Each member of a group is given an envelope containing pieces of circle. The task of each group is to form circles of equal size. The task is not completed until each individual has before him or her a perfect circle of the same size as that formed by others in the group. There are specific limitations on the interaction: No speaking is allowed. Members may not ask for or take pieces from other persons. They may only give fellow members pieces that they may need. Detailed directions for this exercise and follow-up discussion suggestions appear in Appendix A (pp. 193-197).

The challenge lies in the fact that exchange of pieces takes place between members before the goal is achieved. For all but the easiest version of this exercise, some of the envelopes given to each group contain pieces that will produce a circle without exchange. However, if the person who receives such an envelope is unwilling to break up his complete circle and share with others, the group will not be able to complete the task. What often happens in a group is that one of the more competitive members quickly finishes a complete shape and then impatiently waits for the others to solve their problems, gazing around the room oblivious to the struggles of other members of the group—quite unaware that he or she is the cause of the group failure.

By eliciting ideas during the postgame discussion of what made for successful or unsuccessful cooperation in the group, you can help the students gain insights about sensitivity to the needs of others and to the act of sharing. Ask them how they could have cooperated more fully. This task is an excellent analog to many cooperative tasks: the individual becomes concerned with giving rather than with taking or showing off individual achievement.

Do not lecture students on what they are supposed to learn from the experience. Allow them to arrive at conclusions through your questions and the discussion that follows. Then, when they have been able to develop the important insights, you can point out how cooperation in this situation relates to cooperation in the planned groupwork. Education is not magic—always make the connection between the new behaviors and the situation when you want the students to use their new awareness or skills.

**Follow-up Experiences.** Often it is necessary to design a follow-up experience if the groups are exhibiting problems in being responsive and sharing. An advanced version of Broken Circles (see Appendix A, pp. 196-197) allows the same class to do the exercise at a later time. Or you can provide a supplementary experience involving sharing pieces of a jigsaw puzzle, as also described in Appendix A (pp. 197).

Other skillbuilders that can be used to teach the same lesson include a workout with a relatively large beach ball where the group is given the task of keeping the huge ball in the air and bouncing it for so many minutes. Here, too, the success of the group will depend on everyone's efforts. Creating a mural together or putting together a complicated puzzle can teach or review the same point about cooperation. As with the first activity, it should be followed by a discussion in which the students have a chance to draw the connections between cooperation demanded by the exercise and their own behavior in the groupwork setting.

**Teaching Specific Cooperative Behaviors**

Your training program will deal with specific behaviors that are required by the groupwork setting you have in mind. Start by analyzing your groupwork task. Will it be a small discussion group where everyone must come to consensus before producing a group product? Will it be a working group where students help each other in a collegial fashion, but are responsible for their own product, such as a completed write-up or a laboratory report? Will the task be a purely verbal one involving values and opinions, or will the task involve students showing each other how things work with manipulative materials? Will the task involve creative problem solving in a situation where there are clearly better and worse answers?
Different groupwork tasks require different cooperative behaviors. To illustrate, let us contrast the behaviors called for in two groupwork settings: learning stations or centers and small discussion groups. In the learning station format, the instructor sets up different tasks in various stations in the classroom. These might be science experiments, math problems using manipulatives, or examining primary source documents in social studies. Tasks are typically multimedia and call for a variety of problem-solving behaviors, with more than one way to solve each part of the problem. There are clear standards and criteria by which one can assess the group's performance and its products as more or less successful. Students are expected to work together to help others at their station; at the same time they are expected to turn out individual reports or products that the teacher can examine and use as a basis for assessment of individual progress or for individual evaluation.

A key behavior at learning stations is helping other students. Helping others is not as simple as it sounds; the most common response is to help by doing the task for the other person. Students need encouragement in asking each other questions. They need to realize that this is a legitimate and recommended behavior at learning stations. Furthermore, they need to know how to answer each other’s questions; instead of telling the “right answer,” students learn to give a full explanation. Webb (1991) found that students who received only the answer learned less than those who received an elaborated explanation.

When there is an individual product, there is a distinction between the students’ finding out what others think and deciding for themselves what they are going to include in their own final report. Students need not only to be encouraged to consult with others but also to make up their own minds in creating their individual product. Finally, if students are to have a productive interchange at the learning station, they will need some practice in listening actively. Both the questioner and the answerer must know how to listen and respond attentively.

Although many questions concerning manipulative tasks can be answered by physical demonstration with materials, nonverbal communication is too confining as the only method of communication. Younger children need practice in telling how as well as in showing how things can be done. Younger children also need to learn new ways in which to act politely in a collegial setting; when someone gives you assistance, you thank them or show them your appreciation in some way.

Required behaviors for small discussion groups differ to some extent from those required by learning stations. Here the task is one of verbal exchange as well as the requirement that the group reach some kind of a consensus. For example, you might ask the groups to arrive at some interpretation of literature or drama, use the assigned readings to answer a discussion question, apply what they have learned about nutrition to plan a meal, create a pantomime or role play illustrating an idea, create a short conversation using new words and sentence frames in a foreign language class, improve the grammar and sentence structure of a composition written by a classmate, or propose a solution to a social or political problem.

The basic set of required behaviors includes, at minimum, the norm that everyone contributes and that no one person dominates the group. In addition, discussion requires listening skills. There is a tendency for some members to be so concerned about saying their piece that they don’t listen to what someone has just said. Not only do people have to listen to each other, but they need to learn to think about what the other person has said. Lack of listening and reflection on what others have said will result in a disconnected discussion and often in a failure to reach consensus.

While some older students need to learn to be concise in sharing their ideas, many younger students need to learn to give reasons for their ideas. If the group is asked to come to a consensus, then students will have to learn how to pull ideas together and to find out if the group is ready to decide what to do. Young people are often unaware that coming to a collective decision involves some procedural discussion about how and when the group will narrow down to a decision. This is evidenced in a disconnected discussion and often in a failure to reach consensus.

Skills for High-Level Discourse. Cooperative learning can stimulate the development of higher-order thinking skills, many of which are the focus of recent curricular frameworks and standards. Students can hypothesize, analyze, generalize, seek patterns, and look for logical consistency in the context of a demanding group task. Students often demonstrate their thoughts by stating their conclusions or by illustrating their thinking with manipulatives. However, they might find it difficult to articulate their thinking, or to communicate the logic by which they reached their conclusions. In watching such groups, we can infer
that the students are engaging in higher-order thinking, but we would have difficulty proving it on the basis of what they say. Students will engage in higher-level discourse when they are specifically asked and instructed to do so.

The importance of articulating one’s thinking and clearly communicating ideas to others increases exponentially as students move into secondary school. Unless the students can communicate scientific ideas, analysis of a social problem, or the logic behind a deduction in mathematics, they will have difficulty with advanced coursework in these subjects. Thus, despite reluctance to place so much emphasis on purely verbal intellectual production that puts some students at a disadvantage, you may decide that all students should have access to training and experience in these skills of discourse as early as possible. How to develop the linguistic proficiency of students who are in the process of developing their proficiency in the language of instruction will be addressed in Chapter 7.

Rainbow Logic is an example of a skillbuilder specifically designed to help students communicate their deductive thinking and spatial reasoning (see Appendix A, pp. 203–205). In this exercise the grid designer, out of sight of the group, creates a pattern of colored squares on a 3 x 5 grid, following the rule that all of the squares of the same color must be connected by at least one full side. It is the task of the group to deduce this pattern through asking a series of questions such as, “Are there blue and yellow squares in the top row?” The goal is for the players to be able to give the location of all colors on the grid after as few questions as possible. In order to achieve this goal, it is necessary for the group to discuss and decide before asking the grid designer a question. In the course of the discussion, students should share the logic of their thinking. An observer is utilized to record how often players give reasons for their suggestions and whether the group really discusses suggestions before coming to a decision. In this way, the students are making their thinking explicit in order to share the rationale for their ideas.

As a teacher, you will think about the kind of interaction you would like to hear when you listen in on the group conversation. Because it is important that the group discussion be articulate and thoughtful, consider using a specific skillbuilder designed to teach the kinds of “talk” you want to hear. In this case, you do not have to actually teach the words you want to hear. Rainbow Logic is a good example of a skillbuilder that does not prescribe particular words, but encourages the

students to learn to put their own thought processes into words. Any exercise that forces students to practice giving reasons for their ideas will have the same effect.

Skillbuilders have also been developed to promote the use and application of subject-specific group discourses. For example, to promote “science talk” in high school classrooms, Holthuis (1998) developed a skillbuilder in which students worked in small groups to analyze data—in this case, copies of checks written by two people over the course of about 20 years. Students were asked to construct claims about events in these individuals’ lives based on the information garnered from the checks. As with all skillbuilders, a critical component is the follow-up discussion in which the teacher identifies, labels, and reinforces when students made claims that were well supported by evidence, when and how students justified their conclusions, and when, like scientists, they changed their theory or claim in the face of sufficient contradictory or anomalous evidence.

Mathematics educators (e.g., Yackel & Cobb, 1996) describe social norms and sociomathematical norms that govern interactions in the inquiry-oriented mathematics classroom. Engaging in mathematics requires that students explain their arguments and justify their solutions, and listen to and make sense of their groupmates’ explanations. Sociomathematical norms are the subject-specific norms that state the mathematically appropriate and valuable contributions as well as the mathematically acceptable and effective arguments, explanations, and justifications.

Use of Social Teaming Principles. Detailed instructions for skillbuilding exercises designed to teach behaviors such as those just described are included in Appendix A. When you recognize the simple principles behind the construction of these exercises, you can create training experiences for these and for any other skills you decide are important for the kind of groupwork you have chosen.

Bandura (1969) and others have developed some relatively simple principles of social learning through extensive experimentation. These are extraordinarily useful whenever one is introducing new behaviors to children or adults. These principles may be summarized as follows:

1. New behaviors are labeled and discussed.
2. Students learn to recognize when new behaviors occur.
3. Students are able to use labels and discuss behavior in an
   objective way.
4. Students have a chance to practice new behaviors.
5. New behaviors are reinforced when they occur.

If a skillbuilding exercise you develop meets the requirements of
these five principles, you will have a very good chance of seeing the
students make frequent and correct use of their new skills. Actually,
they are learning more than the new behaviors; they are learning that
these are effective ways to behave if they want a good group product.
Furthermore, they are learning that these are desirable and preferable
ways of behaving in groupwork situations. In sociological terms, they
will be willing to enforce these new norms on their peers in the group.

Let us illustrate the use of these five principles in a skillbuilder
called “Master Designer,” which is described in detail in Appendix A
(pp. 198–200). The exercise requires a set of seven geometric shapes
also known as a tangram (illustrated in Appendix A). Each of the four
persons in a group needs a complete set. The fifth member of the group
is the observer. One person takes the role of the master designer and
creates a design with the shapes. The master designer then instructs
the others as to how to replicate the design without showing it to them.
Group members cannot see what the other members are doing, but
they may ask questions of the master designer.

Master Designer illustrates three new behaviors. It shows students
how to help other students do things for themselves. It illustrates how a
group can be dependent on the master designer for explaining how a
project should be done. And by virtue of another of its rules—aft-ter
the master designer has certified a member’s design as correct, that person
may also help others by explaining how—it shows students that coop-er-
ination can lead to the group’s success.

Before the exercise begins, the teacher introduces the new
behaviors and assigns them labels: “Helping Students Do Things for
Themselves,” “Explaining by Telling How,” and “Everybody Helps.”
These labels also appear on a poster that remains on display for the
groupwork that follows the training. In accordance with the social
learning principles listed earlier, assigning labels helps to fix the new
behaviors in the students’ minds; playing their parts provides them
with the chance to practice the new behaviors. In subsequent rounds
another student can take the role of master designer, thus giving
others a chance to practice explaining and helping.

The job of the observers is to watch the group and check off every
time they see two of the three new behaviors for example, Explain by Tell-
ing How and Everybody Helps. After each round, the observers report
how many times they saw the new behaviors. According to the principles
of social learning, the observer role teaches students to recognize new
behaviors when they occur and to discuss them with the correct labels.
It is very important to prepare the observers for their role. You
cannot assume that students will automatically be able to recognize
the new behaviors you have in mind—the words may have a very dif-
ferent meaning for them than for you. Discussing what the behaviors
are and how to look for them is an essential step if everyone is to gain
a needed awareness of what behaviors you are talking about. When
the observers later report what happened in the groups, you have an
opportunity to reinforce the new behaviors. In this way the exercise
uses all five of the learning principles listed earlier.

The Four-Stage Rocket (described in Appendix A, pp. 206–209)
embodies the same learning principles. A technique developed by
Charlotte Epstein in her book Affective Subjects in the Classroom (1972,
pp. 48–57), this exercise for small-group skills has become a general
favorite among practitioners of cooperative training. It can be adapted
to teach a variety of needed skills for different kinds of group tasks.
Other activities are presented in Appendix A for the two common
formats of learning stations and discussion groups. Guess My Rule
(Appendix A, pp. 200–202) can be used with 2nd-graders as well as with
older students, whereas Rainbow Logic (Appendix A, pp. 203–205) and
Four-Stage Rocket (in its original form) are more suitable for middle
school and high school students and can be used for adults as well. The
exercises in Appendix A are self-explanatory.

Further Training. During the course of using groupwork in your class-
room, you will see some loss of training, some slipping back to old
ways. When this happens, there are a number of strategies that you can
use. The simplest is to listen in on groups; when you hear that they are
not giving reasons for ideas, you ask, “Are you giving reasons for your
ideas?” Or when they are not really discussing decisions before making
them, you can ask: “What is the overall strategy or plan for this group?
I will be back in a few minutes and you can tell me what you plan to
do.” You will be surprised to find that after repeating these queries for
a number of sessions, you will hear the students asking these same ques-
tions of each other.
Another valuable strategy is to circulate and take notes while the groups are in operation. Note good examples of use of the desired behaviors and skills, as well as failures to use them and the ensuing consequences for the functioning of the group. Bring up these observations during wrap-up or before you begin the next day’s session. If there have been failures of cooperation, ask the class what members of the group could have done to make the group work better.

Sometimes you will decide that serious problems in the behavior of the groups necessitate more time and attention to promoting cooperation. When this happens, take time to review important behaviors that make for a successful experience. Ask the students if they have noticed any difficulties they are having in the groups. Can they think of any way to solve these problems? What are some of the new behaviors that might help? Make a public list of these behaviors. Tell the groups to repeat or extend an assignment they have already carried out. Appoint an observer for each group. The groups will work for 5 minutes while the observer watches for use of specific recommended behaviors. Then stop the groups and allow each group to discuss with the observer what was seen and what can be done to improve the quality of the group process. There is no need at this point to go back to exercises that are not directly related to the work at hand. The group itself has the capacity to be self-critical and to correct its problems.

During group processing, older students can work without the observer role. The entire group can undertake to reflect on the behavior of its members. Then the group members can discuss how well they are doing and how they might increase key cooperative behaviors. Research has shown that problem solving on a complex computer simulation problem was superior with a combination of the teacher giving specific feedback on cooperative behaviors and the students having a chance to reflect on how the group was behaving with respect to specific skills (Johnson & Johnson, 1990). This treatment produced better results than either large-group discussion of cooperation or groupwork with no processing.

The secret of successful pretraining in cooperation, feedback from the teacher, or group processing is the use of very specific behaviors. For example, Huber and Eppler (1990) asked 5th-graders to rate their own cooperative process on general dimensions, such as friendly–hostile and hardworking–careless, and to discuss for 5 minutes what went wrong during the last session and how they could improve cooperation next time; this strategy had no effect on achievement. Apparently, this method did not provide students with sufficiently specific information on what was missing in their behavior and on what behaviors would make things go better.

The behaviors must not only be specific, but they should also be directly relevant to the goal of the group. This is why general human relations training programs that emphasize sensitivity, receptivity, openness, and reciprocity are not recommended here (Miller & Harrington, 1990). Compare these very general qualities of interaction to the behaviors that Johnson and Johnson (1990) selected for groups working on a computer simulation: summarizing the ideas and information of all group members, encouraging active oral participation of all members, and checking for agreement among members each time a decision is made. Each member was assigned to monitor one of three social skills and made sure that all members used that skill.

There are additional skills, especially for group projects, that become more important as groups attempt longer-term, more ambitious projects. Lists of helping and troublesome behaviors for improving group process skills are provided in Appendix A (pp. 208–211). Ask colleagues or other adults to use an observation tool while the group repeats or extends an assignment. The observers can report to the class as a whole or to their own groups. This should be followed by a discussion of whether or not the students feel these behaviors are important for achieving a better group product. The students should also discuss alternative strategies of using helping behaviors and avoiding troublesome ones. Choose those behaviors from the list you think will be useful for your class; don’t feel that you have to address every single one.

Special Norms for Group Behavior

Equal participation is probably the most important norm to teach when training students to discuss, to make decisions, and to do creative problem solving. When students feel that everyone ought to have a say and receive a careful hearing, the problems of inequality and dominance discussed earlier can, in part, be addressed. If group members have internalized this new norm and have acquired some skills for discussion, students with high status are less likely to dominate the group.
Prevention of Dominance. In a laboratory study, Morris (1977) demonstrated the effectiveness of training procedures in preventing unwanted dominance in creative problem-solving groups. Here are the norms for cooperative problem-solving behavior Morris presented to the participants in his study:

1. Say your own ideas.
2. Listen to others; give everyone a chance to talk.
3. Ask others for their ideas.
4. Give reasons for your ideas and discuss many different ideas.

(1977, p. 63)

In order to train groups to use these norms, Morris gave them a challenging survival problem to solve. This task, adapted from survival problems developed by Jay Hall (1971), is called Shipwreck. It requires the group to imagine it is a crew of a ship sinking near a tropical island. Eight items are available to take with them from the ship. The group is asked to rank order items according to how important each is for the group’s survival.

After discussing how research has shown that groups do better than individuals on creative problem solving, Morris introduced the task and instructed the group they were going to work as a team and that they would be evaluated on how well they worked together. He explained the four behaviors that make a good team effort.

To teach the group to be self-critical and to evaluate group processes, he interrupted them after they had arranged four items. He used the following discussion questions:

1. Is everyone talking?
2. Are you listening to each other?
3. Are you asking questions? What could you ask to find out someone’s ideas?
4. Are you giving reasons for ideas and getting out different ideas? What could you ask if you wanted to find out someone’s reason for a suggestion? (Morris, 1977, p. 157)

He then allowed them to finish the task and presented them with another similar survival problem. This research was able to show that the teaching of norms for equal participation prevented the high status students in these groups (those who were seen as better at reading) from dominating the interaction.

These norms influenced behavior on a third and different task, even though it was unrelated to the survival problems and nothing was said about using these new behaviors. Students assumed that this was the best way to behave in a cooperative task. In other words, the norms had begun to influence group behavior on a new groupwork task without the adult in charge having to say anything.

How did this intervention work? Sociologically, the training introduced a new norm for equal participation along with some group process skills. Because these groups were initially unequal in reading status, we may assume that better readers thought they were going to be more competent on the survival problem. The treatment did nothing to interfere with the operation of these expectations for competence.

If that was the case, then why were high status students less active in the treated groups than in the untreated groups? Even though the better readers may have thought they were more competent at the survival problem, the treatment told them that they would hurt the group effort unless they let everyone talk. Thus, the new norm interfered with the process at that point where different expectations turn into different rates of talking in the group.

When students in the treatments condition were asked about who had the best ideas in the group, they tended to pick the better readers. Thus, we see that although the inequality in talking was reduced in the treatment group, status problems were only partially treated.

Although this treatment has only a partial effect on status problems, it is a safe, simple, and pedagogically sound way to remind the members of your class who tend to dominate small groups that others can and should contribute. Appoint an observer in the group to monitor the use of the desired behaviors. After the reports from the observers, carry out a class discussion using the questions listed earlier. When you are ready to assign a groupwork task requiring creative problem solving, remind the class of the four features of group process that Morris (1977) stressed.

Effective Group Functioning

When the members of a group are confronted with a challenging and uncertain task that will require a group product, they face a fundamental
problem: how to decide on the final nature of that group product, and how to divide the labor in order to carry out the work. Suppose that a group is tasked with designing a skit to dramatize the conflict between Martin Luther and Pope Leo XI. What form should that skit take? Who should write it? And who gets to play the parts of Martin Luther and Pope Leo XI? These are all questions that must be answered if the group is to have a credible product to present to their classmates.

Although it doesn't seem sensible to an outside observer, students will often try to move ahead without developing any general plan or strategy. Someone will say, “I think we ought to make a gold crown for the pope.” “I can cut up these pieces of paper that will look like indulgences for sale,” says another person. Soon the group is busily engaged in making props, having evaded both the substantive historical questions and the issue of what form the skit will take. Given enough time, this group would eventually shape the skit, but in the school schedule there is not enough time to work this way. It is essential, if the group is to finish its job within time constraints, that they start by discussing the historical issues and then develop a plan or strategy.

Teachers can assist this process by creating a specific norm for effective group functioning: Consider the issues and develop a plan or strategy for creating your group product. This will not have much meaning for students until they have some examples. Examples you take from listening in on their interactions can be very useful. You can either report strategy sessions you overheard, or you can ask groups to share with the class how they created a plan. You can intervene when groups are floundering, and ask them to discuss the issues and come up with a plan. Be sure to return to the group to hear their plan.

A second common problem is often found in groups of secondary school students. When faced with making a group decision, they will take a vote rather than have a full discussion and develop a consensus. They may not even comprehend the concept of building a consensus. The drawback of voting on a plan of action is that those who are voted down then have no stake in the group product and will very likely withdraw from participation. In addition, votes often short-circuit a discussion of the intellectual issues involved. Members are too focused on the actions they will take and do not take the time to gather all opinions and examine the intellectual resources provided by group members or the materials given by the teacher.

You can introduce the norm of developing consensus in connection with the norm concerning plans and strategies. You can discuss with students what happens when instead of a full discussion, a vote is taken on what the group should do. You may want to introduce the concept of compromise. In her 7th-grade classroom in Pittsburgh, California, Diane Kepner had students practice consensus building by asking them to reach consensus on three specific items of food to have for a classroom party. After 10 to 15 minutes, groups reported to the class their chosen items and discussed how they had reached their decisions. In a second step, representatives from each group came together as a panel before the whole class to negotiate and decide on the final selection of items. The third step was critical: she discussed the group processes, such as negotiation and compromise, that were used, and the implications of these strategies for consensus building in small groups in general.

When the groups are in operation, you can move around listening to the discussions. When you hear a group approaching a vote, you can ask, “Does everyone agree? Have you taken into consideration everyone’s suggestions?” This will usually have the effect of opening up the conversation once more and emboldening those whose opinions have been ignored to make their case more strongly. Most of the time, you are not present at the critical moment when the group is taking a vote. Instead, you realize that a group is making no progress and will not complete their task successfully without your intervention. Ask them what they are attempting to do and how they reached that decision. According to Diane Kepner, they will often report having taken a vote. Then Kepner advises a teacher to say to those who lost out on the vote, “What will it take for you to feel comfortable with the group decision?” This opens the way for compromise and improved motivation to participate for all group members.

**COOPERATION AND ANTISOCIAL BEHAVIOR**

Vigorous disagreement about how to solve a problem, or about the social issues under discussion, is one of the positive features of cooperative learning and should be encouraged. Students learn as a result of being exposed to conflicting views; they are forced to justify their own views and come to the realization that there is often more than one legitimate perspective on a problem. Johnson and Johnson (2009a) have described the instructional power of intellectual conflict and shown convincing evidence for its contribution to learning.
However, some students do not know how to handle disagreement. They may engage in personal attacks or "putdowns," they may even hit each other, or they may get up and walk away from the group, feeling that their ideas have been rejected. Teachers are understandably distressed. How can students proceed with the content of the cooperative learning lesson if they have so few strategies for working together? Such behavior may be common in classes where there are many students who have had little experience with negotiation and too much experience with verbal and physical violence.

Other common problems, particularly with students in the middle grades, are physical and social rejection of some members of the group. They may quite directly say that they don't want a particular student in their group; or they may indicate their rejection with body language. The student may be barred from the materials with elbows and turned backs. Rejection may take the form of nonresponse to any of that person's contributions. The group may act as if the person were invisible.

Diane Kepner, now a retired teacher, worked closely with us for many years. She had been trained in conflict resolution techniques (Kreidler, 1984; Rosenberg, 1983) and applied work from this field to antisocial behavior within cooperative groups in her 7th-grade classroom. Central to her interventions was the observation that conflict escalates with a cycle of blaming: "He told me my ideas stink," "He called me a bad name," "She told me to sit down and shut up," and on up to "He pushed me first." If students learn to translate these blaming statements into "I feel" statements in which they express honestly how they felt in response to the other person's statement or behavior, it has a remarkable way of defusing the conflict. For example, a student might say, "When you told me that my ideas stunk, I felt like no one in this group wanted to hear anything I had to say—even again." This provides an opening for the other person to explain more carefully the basis for his negative evaluation of the first person's ideas, and the path is opened to normal conversation once more.

Because this is not a "natural" way for most people to talk, give students the chance to practice translating blaming statements into "I feel" statements. Kepner also trained her students to follow the "I feel" statement with a positive request such as "I'd like you to wait until I finish before you start talking" instead of the negative statement "Stop interrupting me." Positive requests should be specific and constructive rather than vague and negative in requests for changed behavior in others. The communication worksheet Kepner used, entitled Conflict Resolution Strategies for Groupwork, is in Appendix A (pp. 211-214). She had created specific examples of troublesome behavior in small groups so that students could practice "I" statements and positive requests.

Once students had mastered these concepts, Kepner was able to intervene in conflict situations, asking students to think about how they might replay what has happened in the group using alternative ways to express distress and disagreement. When members can talk to each other in a more constructive way, they are often able to move ahead with the groupwork. Kepner cautioned that these interventions will not work if the source of the conflict is some serious difficulty between students that is of long standing, or is a product of an acute conflict that is currently taking place in the school. If students could not put this antagonism aside in order to work together in the classroom, she changed the composition in the group, or in the case of such serious problems as gang conflicts, she turned to her colleagues and the administration for advice and support.

It is not only what people say to each other that causes so much harm; it is also their body language that signals rejection, dislike, and anger. Many students are not aware that they are sending messages with their bodies. Kepner advised talking with students about what an important form of communication this is. Body language includes facial expressions, posture, and gestures. She explained that messages that are received may be misunderstood, and that a complaint of "she's giving me looks" may have no actual basis in hostility. She then divided the students into groups and told them they were going to be given a situation to act out with only a minimum of talking. The rest of the class then determined what the message was through the interpretation of their body language.

Kepner selected the following situations, as examples from her experience, of what often goes wrong among students in groups:

- Two members sit beside each other and hold or turn the book, the task card, or the computer screen so that the other members of the groups cannot see it;
- Two group members sit across from each other and form a wedge to exclude a third member as they write and talk about their project;
• Group members actively discuss while one member withdraws;
• During a discussion, group members show by facial expressions and other movements that one member's contributions are never accepted;
• As one member joins the group, another member shows that he or she wants nothing to do with this person;
• During a presentation to the class, one person shows that she or he does not want to be associated with the rest;
• During preparation for a skit, one member of the group is treated as if he or she cannot do anything right.

To follow up this exercise, Kepner observed groups in operation. Upon spotting one of these nonverbal problems, she said to the group, "Take a look at yourselves and how you are sitting and working. What are you communicating to each other?" She then left it to the group to figure out what is wrong and how to correct the problem. Like Diane Kepner, many teachers apply conflict resolution techniques developed in recent years to help students manage interpersonal issues that arise in interactions with their peers.

NORMS AS A PRACTICAL CLASSROOM TOOL

Once you have completed a successful training program, the fact that new norms have been internalized is of considerable practical importance. Much of the work that teachers usually do is taken care of by the students themselves; the group makes sure that everyone understands what to do; the group helps to keep everyone on task; group members assist one another. Instead of the teacher having to control everyone's behavior, the students take charge of themselves and others.

Many educators think of training for cooperation as a kind of moral socialization; they wonder whether this is the function of schools when there are so many other objectives to be realized through public education. Although there is evidence that cooperative training will have these socializing effects, there are entirely different grounds for arguing that cooperative training is worth the time it takes from ordinary instruction. Cooperative training allows you to gain the benefits of group instruction—benefits in terms of active learning and improved achievement outcomes. If the training results in internalized norms, it has the added benefit of transferring those norms to any groupwork situation where you remind the students that the norms are relevant and useful. Most important, it frees you from the necessity of constant supervision and allows you to use your professional skills at a much higher level.

Figure 4.1 is a summary of the norms, helpful behaviors, and skillbuilders discussed in this chapter.

<table>
<thead>
<tr>
<th>Norms Required for Productive Groupwork</th>
<th>Behaviors</th>
<th>Skillbuilders</th>
</tr>
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<tbody>
<tr>
<td>Responding to the needs of the group</td>
<td>• Pay attention to what other group members need.</td>
<td>Broken Circles</td>
</tr>
<tr>
<td></td>
<td>• No one is done until everyone is done.</td>
<td>Broken Squares</td>
</tr>
<tr>
<td>Learning to help, ask questions, and explain</td>
<td>• Discuss and decide.</td>
<td>Rainbow Logic</td>
</tr>
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<td></td>
<td>• Give reasons for your suggestions.</td>
<td>Master Designer</td>
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<td></td>
<td>• Explain by telling how.</td>
<td>Four-Stage Rocket</td>
</tr>
<tr>
<td></td>
<td>• Everyone helps.</td>
<td>Guess My Rule</td>
</tr>
<tr>
<td></td>
<td>• Help others do things for themselves.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Find out what others think.</td>
<td></td>
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<tr>
<td></td>
<td>• Tell why.</td>
<td></td>
</tr>
<tr>
<td>Preventing dominance</td>
<td>• Everyone gives information.</td>
<td>Shipwreck</td>
</tr>
<tr>
<td></td>
<td>• Make a plan.</td>
<td>Space Ship</td>
</tr>
<tr>
<td></td>
<td>• Agree on strategies.</td>
<td>Alligator River</td>
</tr>
<tr>
<td></td>
<td>• Describe accurately and in detail.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Say your own ideas.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Listen to others; give everyone a chance to talk.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Ask others for their ideas.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Give reasons for your ideas.</td>
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</table>
Groupwork is easier planned for and done with the aid of a colleague, a student teacher, a mentor, or another support provider. Designing and evaluating groupwork tasks is a classic case of creative problem solving where "two (or more) heads are better than one." Considering that teachers have responsibility for their own classrooms and often have limited opportunities to work closely with a colleague, you may feel that this is an impractical recommendation. Addressing this problem is the second topic of this chapter.

DELEGATING AUTHORITY

When you stand in front of the class and instruct the students in a whole-class setting, when you assign individual seatwork and walk around the classroom overseeing performance, when you divide up the class into reading groups and sit with one group while they take turns reading aloud or answering your questions, you are using direct supervision. Even when in preparation for groupwork you gather the class together and provide an orientation, you are using direct supervision.

When groupwork is under way, however, and groups are working and talking together using the instructions on the task card you have prepared, then your authority has been delegated. You cannot possibly be everywhere at once trying to help six or more different groups. Moreover, having students talking and working together is essential as a strategy for managing heterogeneous classes. When they are trained to help each other, perhaps by reading or by translating for students who are learning the language of instruction, students serve as academic and linguistic resources for one another and use each other to understand and complete the assignments.

When students are working on uncertain conceptual tasks such as inquiry and creative problem solving, talking and working together are necessary for achievement (Cohen, Lotan, & Leechor, 1989; Cohen, Lotan, & Holt, 1997). Students will be encouraged to work with each other to deal with all the questions and problems involved in these tasks. Research has shown that all students, but particularly individuals who are reading below grade level, benefit from interacting with other students on challenging tasks (Leechor, 1988; Schultz, 1999). Unless you are successful in delegating authority to groups, your students will
not gain these benefits of talking and working together. In that case, you will find that groupwork is unmanageable.

**An Effective Management System**

Teachers are often surprised to discover how smoothly students of all ages can operate on their own in properly designed groupwork. The secret of successful management of such complex instruction lies in clarity—the students' thorough understanding of how they are supposed to behave, what they are supposed to be doing, and where they can turn for help if problems develop. The same is true for a traditional classroom; the difference is simply that with groupwork, students have to take more responsibility for their own behavior and for the behavior of others in their group. They should not be turning to the teacher for constant direction, evaluation, and assistance; they should draw upon their peers instead.

Clarity is attained by having as simple a system as possible. In addition, much clarity is achieved by training in advance for roles and for cooperation, as well as by the careful planning process and curriculum design recommended in the preceding chapters. All these management techniques operate to control student behavior in a constructive and productive manner without having to tell them what to do directly. There is no need to control individual students' behavior with systems of points or rewards; the teacher's job is to make the groups and the instructions operate to address any discipline problems that arise.

The steps for developing such a management system are briefly summarized as follows:

1. Cooperative norms are to be taught as recommended in Chapter 4 so that students will know how they ought to behave and will expect and insist on these behaviors from others.
2. Students need to know which group they are in and where that group is supposed to meet; a minimum amount of time should be wasted in getting across this vital information. Table numbers are helpful.
3. Public and specific information as to who is to play what role and what specific behaviors are expected should be available as described in Chapter 8. Name and role charts are helpful.
4. Each group needs to have clear instructions for the task and criteria for assessment of their product available to them as they work; this will do much to prevent students from having to turn to you as a source of knowledge.
5. Students need to know and understand the learning goals of the activity. Brief orientations as well as visuals clarifying those objectives are helpful.

For many groupwork situations, these five considerations will be quite sufficient for most everything to go smoothly. You may also want to select a set of fundamental norms and keep these posted. We recommend the use of the following norms:

- You are expected to complete each group activity and individual report.
- Play your assigned role in the group responsibly.
- You have the right to ask for help. You have the duty to assist.
- Help other group members without doing the work for them.
- Explain by telling how.
- Everybody helps.

When you use collaborative seatwork, the written worksheet or assignment directs the students as to what you want them to do. When tasks are groupworthy and conceptual, task cards or activity cards are highly recommended. (See Chapter 6.) The task cards are a physical representation of your delegation of authority. By giving the students the card, your message becomes clear: “This is the work you are required to accomplish. Do your best!” Without the task card, students rely on directions from the teacher, who frequently interrupts the group to give directions and to assist in the work. The teacher is concerned that the students get the “point” of the activity and tries to prevent the group from making errors while engaging in inquiry or in a lively discussion. This situation greatly reduces the amount of talking and working together and thus the learning of the group. The group has no chance to achieve its own insights, and individuals who are lost are unable to use other group members as resources.

**“No Hovering”**

Following a short orientation, you delegate authority to groups to carry out their task. It is of critical importance to let them make decisions on their own. They might need to make some mistakes on their own.
They are accountable to you for their work. Let go and allow the groups to work things through without you overseeing every step. Trust that they will rise to the occasion and learn to solve some problems for themselves.

Many teachers in traditional classrooms, when they are not lecturing, spend the bulk of their time guiding the students through various tasks. They show and tell how to do the assignments. They redirect students who appear to be disengaged from their work. They answer many questions that come from individual students.

This kind of direct supervision will undermine the management system you have worked so hard to put in place. If you are available to solve all the problems, students will not rely on themselves or on their group. Because of their past experiences with supervision, whenever students see you hovering nearby, they will stop talking to each other and look to you for direction. If the teacher attempts direct instruction while the students are engaged in the groups, the result will be less talking and working together and therefore less gains on measures of learning. These connections between classroom management and learning gains have been documented in numerous research studies on complex instruction (Boaler, 2006; Cohen & Lotan, 1997a; Schultz, 1999).

Avoid rushing to the rescue at the first sign of difficulty in a group. Redirect the group to its own resources by refraining from answering questions unless the entire group has been consulted for possible solutions. In many groupwork situations the facilitator asks a question in the group’s name after having made sure that no one in the group has the answer. You might ask to confirm: “Is your question a group question?”

**While the Groups Work**

When authority is delegated to groups to manage themselves, students are now doing many of the things you ordinarily do—organizing the materials, answering each other’s questions, keeping each other engaged in the task, helping each other to get started, and cleaning up. After teachers discover that they do not appear to be needed because everything is running without them, they often say, “I feel like I’ve been done out of my job; it all works without me. What am I supposed to be doing?”

Despite the ability of groups to carry on by themselves, your role is not one of laissez-faire. Delegating authority does not mean that you are abdicating your role and your responsibilities. You are now free for a more demanding and ambitious teacher role. You now have a chance to observe students carefully and to listen to the discussion from a discreet distance. You can ask key questions to stimulate a group that is operating at too low a level; you can provide formative feedback to individuals and to groups; you can stimulate their thinking; you can look for low status behavior and intervene to treat for status problems; and you can reinforce rules, roles, and norms in those particular groups where the system is not operating at its best.

There is a delicate balance between avoiding hovering and wisely intervening in a group. The price to be paid for intervention is reducing interaction within the group. Ask yourself whether you are willing to pay that price. Although groups should be allowed to make mistakes for themselves, there are times when nothing is to be gained from letting a group struggle onward when

- the group is hopelessly off-task,
- the group does not seem to understand enough to carry out the task,
- the group is experiencing sharp interpersonal conflict, or
- the group is falling apart because they cannot organize themselves.

Don’t rush in at the first sign of trouble. Stand close enough to hear but far enough away so that your presence is unobtrusive. Listen intently and diagnose the problem the group is experiencing. Are low-status students being shut out of the group? Is it a problem of group process? Is it some inability to understand the directions? Is it a problem of how to proceed? Is it a lack of background or content knowledge, lack of academic skills, or lack of linguistic proficiency? Perhaps you will decide after watching and listening that the group will solve its own problems and does not need you.

If you decide to move in, what you do or say depends on your hypothesis about what the problem might be. Here are some possible scenarios:

- A group is having trouble getting organized. You remind them of the rules and roles. You ask whether people are playing their roles. You suggest that the facilitator discuss what they have to get
done, make a list, and help the group to prioritize what needs to be done first and who can do it. You tell the group that you will be back to hear the results of their discussion. Then you leave.

- A group has "gotten stuck" on a problem and doesn't seem to be getting anywhere. The level of frustration is rising. You ask a few open-ended questions in an attempt to redirect the group discussion. You suggest that the group deal with your questions in their own deliberations—and you walk off.

- A group is not sharing materials cooperatively. You could ask them to stop for a few moments and talk over how they are doing on some of the cooperative norms (ideally, posted somewhere in the room). Then you can ask them to tell you after having had a brief discussion what their conclusions are and what they think they should do about it. Don't linger to supervise the discussion.

- A group is struggling with a difficult text and does not know how to analyze the document. They are in need of some intellectual assistance. You point out some of the key parts. You check for their understanding of what is being asked. You may even fill them in on missing parts of their knowledge. This does not mean you are doing the task for them or directing them how to do it. You are merely moving them to the point where they can cope with the academic and linguistic demands of the task.

- A group of 2nd-graders has plunged into the task without reading instructions. You tell the group that you don't want them to work with the manipulatives until they can tell you just what they are supposed to be doing. You say that you are going to return to the group and ask any member to explain what it is they are supposed to be doing. If that person can explain, then they can get started with the materials. Otherwise, they will have to continue to read and discuss.

In none of these examples are you using direct supervision. Instead, you are using the system of roles and norms to make the groups operate. You are directing the group back upon its own resources—to take more responsibility for its own learning and functioning. In each case, you get in, and then you promptly get out.

In addition to these cases of groups experiencing severe difficulties, you may want to intervene in order to deepen or extend the thinking on the assigned topic. Asking questions and making connections are excellent ways to achieve this end, provided you do not stay around to answer your own questions or to call on various group members to guess what you have in mind. Without giving an answer, you can help students to analyze a phenomenon or a problem in terms of its parts and interrelationships. For example, a group of students in science are having problems making a flashlight. The teacher responds by saying, "Not everyone's flashlight is working. Have you tested each part of it to see if it's working? By sharing with each other the parts that work, you might be able to figure out how to get it working." Questions beginning with "why" or "how come" are good for stimulating analytic thinking. You might ask a group of students examining the Crusaders' Handbook, "Why do you think the Crusaders tried to dehumanize the enemy?"

Your attention will also be necessary if one group finishes their work very quickly while the others need more time. You might open up the task once more by asking some questions about analyzing the problem further, or about generalizing the task to another situation. For example, you might ask: What other ways are there of . . .? How can we use what we learned in . . .? Do you think this is true of all . . .? What would happen if you did things another way? You might also ask the group to consult further references to extend their activity and their thinking. Questions such as these can be difficult to articulate on the spot. Often teachers generate a list of conceptual, high-level extension questions ahead of time and keep them on a clipboard, a tablet, or another device to refer to as needed.

Management of Conflict

Disagreement about ideas is a healthy sign as long as intellectual disagreement does not degenerate into sharp interpersonal conflict. Some interpersonal conflict is inevitable and should not be taken as a sign of failure. Nor should it be an opportunity for you to intervene and take over the reins immediately, acting as arbiter, juror, and judge.

What can you do? Ask the group what seems to be the difficulty. Then ask them to think of some alternative strategies for handling the conflict. If you have prepared your class with strategies for conflict resolution, as described in Chapter 4, they will be able to envision alternative ways to behave. If you have really delegated authority, then the group should take responsibility for solving its interpersonal problems. Even younger students are able to develop workable strategies for managing conflict when challenged to do so and when the teacher persists in demanding that they talk things through until they find a solution.
If the problem is due to a volatile combination of students, make a note to avoid putting that group together again in the near future. Changing the composition of groups on a regular basis and rotation of roles will help to defuse interpersonal problems so that the conflict does not become chronic. If, however, you think you are seeing the same problem in a number of groups, there may be a difficulty with the way you have prepared the students and/or the nature of the task. Take the time to have a whole-class discussion and see if you can locate the general problem. Be prepared to make adjustments in your task, to do some retraining and strengthening of rules and roles, or to develop some strategies with the class as a whole that will solve the problem.

**Holding Students Accountable**

Many teachers would like to grade groupwork and to use systems of points or extrinsic rewards for acceptable behavior because they know that it is important to hold individuals and groups accountable. However, as explained earlier, these strategies are unnecessary and possibly detrimental when the management system just described works. There are multiple alternatives in the system you can use for this purpose. When you intervene while the groups are working and require the group to pull itself together and function, you are holding the groups accountable.

You also hold the group accountable by requiring a presentation of their group product during the wrap-up phase. When a group has failed to work together well and has not addressed the questions raised on the activity card, they need to know that you are aware of what has happened and expect them to do better in the future. You may choose to deliver this feedback to the group while they are still working at learning stations and reserve your more general commentary on what is to be learned from their experience for the rest of the class during wrap-up. For example, you could point out that the next group to do this task should be sure to work with the omitted discussion questions. If, however, you start a round of applause for every group performance no matter how weak, the students will realize that there is no group accountability in the system. Ms. S., a veteran high school chemistry teacher, writes about the problems encountered when a group of students refuses to work productively and is unable to deliver the final presentation to the class. Her feedback was as follows: "It is very disappointing that the group was unable to teach their lesson today. After we wrap up all the other presentations, I would like the class to discuss what can be done when a group is unable to work together. It will be necessary for everyone to learn the material that would have been covered by this group" (Shulman, Lotan, & Whitcomb, 1998, p. 29). Then she asked for the next presentation.

By providing feedback to groups on their group process, you can show that you intend groups to take responsibility for what happens while they are at work. Simultaneously, you can confirm their accomplishments, recommend effective strategies they employed to other groups, or point out the difficulties that will require some attention. Feedback on group process can take place while the group is working or during wrap-up. While helping the groups to learn more effective strategies, your feedback also has the function of letting the students know that you are watching their behavior very carefully and holding them accountable for what happens in their groups.

Individual accountability is maintained by checking the individual reports, the databases that record students' individual work, or the group products. If individuals find that you do not know whether or not they have completed a group report or if they are pretty sure you never read these documents, they may become "free riders" in their groups.

**Teacher's Role for Orientation and Wrap-Up**

During orientation, you are clearly in direct charge of the students. Their job is to listen and to ask questions if they do not understand. This does not mean that a long lecture is necessary. Students, particularly younger ones, will "tune out" after several minutes. Those teachers who use visuals, models, or demonstrations and who conduct an interactive discussion concerning what they are about to experience are much more successful in holding the class's attention than those who attempt to tell everything that the students will need to know.

During wrap-up, you listen closely to group reports, provide feedback, and further the discussion. Asking higher-order questions at this time will encourage students' thinking. Following student presentations, you would do well to comment on what has been learned from the exercise. It is necessary to make connections between the activities and the central concepts they are supposed to illustrate. Otherwise, students get lost in the interesting and concrete details of their group products and forget the point of the lesson.
Wrap-up is also the time to provide feedback and debrief on what you observed while students were at work in their groups. If you constantly interrupt to provide feedback while they are in groups, you will run the risk of hovering and reducing the interaction. Many teachers find that it is better to circulate among the groups, listening and taking notes. Then, during wrap-up or during the orientation the next day, they provide feedback to groups and individuals. Feedback, under these circumstances, has the double function of holding groups accountable and of helping the students with their understanding of the intellectual tasks at hand. It is a priceless opportunity to offer public acknowledgement to students who have done very well in the context of groupwork—particularly those who are not high achievers in conventional academic tasks.

WORKING AS A TEAM

One of the most gratifying experiences for a teacher is to plan and carry out groupwork designs with trusted colleagues. Just as students use each other as resources in groupwork, teachers can do the same. With the joint wealth of past experience as to what tasks work well with students and as to how instructions can be made clear, teachers can be highly creative as they work together. They can also provide honest and constructive feedback as ideas develop.

When instruction is complex, as is the case with groupwork, having colleagues work together means that they are able to be of great assistance to each other while crafting the groupworthy tasks—a groupworthy task in itself as mentioned earlier. Having the option of working together while the class is operating is one of the best possible scenarios. Perhaps one teacher can stop to work with a group needing intervention while another keeps an eye on the classroom as a whole. One teacher can prepare the orientation while another can do the wrap-up.

Another advantage of a colleague is the benefit that accrues when two or more teachers hold formal, scheduled meetings. In these meetings (even if they are relatively short), one has a chance to consider various problems that have come up, to raise possible alternatives, to choose one, and to talk once more in the next meeting about how good or bad the decision was. This kind of thoughtful and evaluative decision making is very difficult to carry out all by oneself. In research with teachers, Cohen and Intili (1982) have repeatedly found that teachers who hold regular team meetings are better able to implement complex and sophisticated instruction than those who rely on brief huddles just before and during class. Common preparation time during the school day is a highly beneficial opportunity for teachers.

The last major advantage of working with a colleague lies in having someone to make an observation and systematic evaluation of your groupwork in progress. It is almost impossible to run groupwork and evaluate what is happening at the same time. Chapter 11 includes a number of simple techniques for a colleague to use in helping to evaluate your groupwork. Even beginning teachers can provide helpful feedback using these techniques. And you can return the favor by observing in your colleague’s classroom.

Finding Ways to Team

There are two kinds of teaming; one requires more organizational change than the other. The first kind is joint teaching, where your colleague actually teaches jointly with you in your classroom. Successful teams can include a resource teacher working with a classroom teacher for one period a day, a teacher and a teacher assistant or student teacher, or a teacher and a well-prepared parent volunteer. If your class is difficult to control and unused to groupwork, you might need the support of another person, especially at the beginning. If your tasks are complex—such as using different science experiments at different learning stations, or working with sophisticated equipment like video cameras—and if you have different groups of young students doing very different tasks, another person becomes a necessity. This is as true for classrooms as it is for any other organization: Complex technology is more effective when staff and professionals collaborate more closely, that is, when complex technology matches complex structures (Perrow, 1961; Scott, 2013).

If you have a colleague on the faculty with whom you would like to try some of these groupwork activities, talk to the principal or to the department chair about finding ways to work together. If a large room such as a multipurpose room is available, it is possible to combine two classes for the actual groupwork. If the classes are from different grades or if you are including a group of students with special educational needs, you will be surprised to see how well students of different ages and levels of academic achievement can work together in this setting. If you are combining age groups, it is especially important to pick a task
that older students can extend and develop, but also one that younger students will be able to manage with assistance. It will also be necessary to include special training to show students how to help others without doing the work for them.

If you decide to work with an assistant, a student teacher, or a volunteer, take the time to educate that person as to your expectations of them during the teaching process. If you do not train them, the result will be that they will move in, try to supervise directly, and even hover over the groups. Assistants or volunteers can become valuable resources if you allow them to bring in suggestions and to make evaluations of what is happening. In these circumstances, you are still the decision maker; it is the role of your assistant to observe and gather data about what the problems are during the course of groupwork. You also expect that they will make constructive suggestions during team meetings.

If you cannot arrange for joint teaching, the next best thing is teaming for planning and evaluation purposes. It would be useful to find the time for brief meetings with a colleague, a student teacher, or a mentor for planning purposes. In addition, finding time for that colleague to visit your classroom would be particularly beneficial and you can return the favor. It is during these visits that the evaluation tools can be used. Following the observation and the evaluation, the team can discuss the results of the evaluation and decide what should be done to improve the implementation. Many principals are supportive of this type of collegial effort to improve instruction. Some administrators even volunteer to take over classes for an hour while the visits are going on.

Collegial interaction of this sort is highly rewarding. Evaluations of programs requiring this kind of collegial interaction have consistently revealed that teachers find working with a colleague in planning, observation, and evaluation one of the most satisfying and stimulating of their professional experiences. Despite initial doubts and trepidations about having another teacher watch them at work, they find that constructive and specific feedback from a colleague who is facing the same kind of practical classroom problems is helpful; they realize that they have wanted and needed this kind of feedback for a long time. One of the ways in which schools facilitate collegial interactions among teachers is through forming professional learning communities (McLaughlin & Talbert, 2006). Educators and policymakers also see great promise in professional systems that support peer assistance through mentor teachers or teachers on special assignment (Grossman & Davis, 2012).