



Teaching For Success® presents

How to Become a Win-Win Teacher Hero

How to Make Small-Group Learning Work



A Teaching For Success Win-Win Quick Study



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How to Make Small-Group Learning Work

Written by:
Francine Armenth-Brothers
 Heartland Community College, Bloomington, IL
 <francine_armenth@yahoo.com or francinb@heartland.edu>

Edited by:
Jack H. Shrawder, Publisher/Editor, *Teaching For Success*,
 South Lake Tahoe, CA <jack@teachingforsuccess.com.>

1 What's in It for Me?

Have you ever used small learning groups in your classes? Were you happy with the results? Have you considered making this instructional design an integral part of your courses, but aren't sure how to go about it? Do you have reservations about incorporating small groups into your curriculum, perhaps believing other methods are more successful? If so, you share concerns common throughout higher education.

This mini-course is designed to address these concerns and help you achieve successful results with small-group learning. It teaches you the benefits and major principles of small-group work, as well as how to properly assess it. It also addresses instructors' most common concerns, and concludes with several small-group structures that you can implement immediately.

However, this course only applies to small groups in the classroom; it's not about research collaborations between teachers and students or faculty members. Although much of the information presented



Planning and running small-group learning activities should be a key part of your instructional design and lesson planning. Small group learning works because it gets students involved at a personal level; it activates their senses and makes use of wide range of thinking and communication skills. Small-group learning is active learning; it can increase a class's energy level in a way that traditional lecturing cannot.

here is gleaned from cooperative learning research, these tips can be practically used for a variety of small-group tasks.

Planning and managing small-group learning activities should be a key part of your instructional design and lesson planning. Small-group learning works because it gets students involved at a personal level; it activates their senses and makes use of a wide range of thinking and communication skills. Small-group learning is active learning; it significantly increases a class's energy level in a way that traditional lecturing does not.

If you teach early-morning, evening, or weekend classes to busy adult, part-time students, you know how tough it is to keep even the most motivated students fully engaged in learning for 50 to 100 minutes of instruction. Small-group learning activities fit in perfectly, with 20-minute or shorter mini-lectures recommended by current learning research. Twenty minutes is about the maximum length of time students maintain productive attention.

Small-group learning (SGL) also works well in the TFS PIE-R³ accelerated teaching and learning lesson model (see *How to Create A+ Lesson Plans*, a Teaching For Success Quick Study) For example, the third step of this model is labeled *Exploration*. In this phase, the learner is given opportunities to explore new content using a range of intelligences and learning styles. Small-group learning facilitates this lesson component and should be used whenever possible.



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2 Principles of SGL

SGL is a common technique in collegiate instruction, and it has a plethora of benefits for students. According to Johnson, Johnson, and Holubeck (1994), as well as Kagan, small-group learning can bring improvements in areas such as these:

- Tolerance and positive interactions among students from different cultural backgrounds
- The exchange and processing of information
- Academic achievement
- Ownership of new knowledge and skills
- Opportunities to solve real-world problems
- Positive attitudes toward the content
- Openness to new perspectives
- Motivation to learn
- Confidence in one's social skills
- Psychological health (e.g., social development, self-esteem)
- Attendance

Wow! Quite an impressive list, wouldn't you agree? And using small groups does not have many detrimental effects at all. How can we be sure of that? Because SGL is among the most researched of all the teaching methods (Johnson, Johnson, & Smith, 1991).

Though SGL promises many educational benefits, they are less likely to be realized if you don't know some basics of how to manage groups and group processes. The next two sections will provide you with the practical details of how to use this technique successfully in your classes.



Using small groups does not have many detrimental effects at all. How can you be sure of that? Small groups are among the most researched of all the teaching methods.

Basic principles of SGL

Knowledge of the operating principles of SGL will help you increase the productivity of small groups. Johnson and Johnson, as well as Kagan, provide simple ways of remembering these principles. Johnson and Johnson tell us to remember the word PIGS, while Kagan's mnemonic is PIES (Active Learning Center, n.d.).

In Johnson and Johnson's model, *Positive interdependence*, *Individual accountability*, *Group interaction*, and *Social skills* (PIGS) are the bases of successful small groups. Let's review each PIGS factor.

Positive interdependence

This factor is important because group members should realize that they not only need each other to complete the overall task, but also that each group member is responsible for the success of every other member. Johnson, Johnson, and Smith (1991) call this "sinking or swimming together," because small-group members will all succeed or they will all fail at completing the assignment. You can develop interdependence by giving your students a limited amount of resources, one goal for the entire group, or rewards to all group members. Assigning a different role to each individual can also strengthen interdependence. Some of these roles may include spokesperson, recorder, and verifier of information (Johnson, Johnson, & Smith).



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Individual accountability

Whether you grade each student's contribution or the group's collective efforts (the project), each member must be held accountable for his or her share. This is a critical group success factor.

Without individual accountability, two common problems are likely to arise: either an apathetic member may not contribute at all or contribute very little, or the group member most concerned about the grade may dominate the project, and possibly complete the entire project on his or her own. In both of these scenarios, the grades of all members may be skewed up or down.

Another reason this factor is so important is that it keeps students on-task and focused. Assigning roles to students is one way to increase individual accountability. Other ideas to help you bring individual accountability to the project are provided in Chapter 4, "Assessment Issues."

Group interaction

Group interaction has many facets. For instance, through discussing concepts, sharing personal experiences, solving problems, and encouraging each other, group members help each other learn the concepts. However, to promote interaction and progress, students need to be skilled at challenging each others' conclusions.

Social skills

The social skills needed to competently complete a small-group task include leadership, communication and active listening, delegation, conflict management, and decision making. You will have to take into consideration the personal experiences and maturity of the whole class when deciding whether these skills should be formally taught during class.



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PIES principles

Kagan (Active Learning Center, n.d.) also emphasizes *Positive interdependence* and *Individual accountability*, and then adds *Equal participation* and *Simultaneous interaction*. These factors are examined below.

Equal participation

Unlike class discussion in which only the gregarious students volunteer their opinions, each student is expected to contribute equally in small groups. This may involve dividing the work in each group equally as well as equally dividing the amount of time spent on the work. For example, you may give a pair of students four minutes to discuss a concept. For half that time, one student in the pair can share while the partner is actively listening. After two minutes, the students can switch roles for the remainder of the time.

Simultaneous interaction

Students work in the same place, at the same time. This way, students are able to discuss concepts, actively listen, and quickly solve problems. However, this concept may be unrealistic for



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adult on-line learning, because students in different geographical locations may not be able to meet at the same time.

In these cases, you may require students to discuss ideas using online chat rooms, whether the chat is synchronous or asynchronous.

Besides remembering and applying PIGS or PIES factors, the productivity and positive experience of small-group work also rely on three other important elements: the purpose of the task, the type of group, and the composition of the group (Cooperative Learning, n.d.; Dillenbourg & Schneider, 1995). Keep in mind that the type of group and the group composition will depend upon the purpose of the SGL exercise, and the part it plays in your overall instructional design.

Please, don't stop now. You are doing great. The next chapter will give you some practical tips on how to boost your success rate while using SGL activities. There are pitfalls to avoid and effective strategies to master.

These concepts aren't difficult or time-consuming, and the rewards of knowing the facts can save you much frustration in the classroom; so turn the page or click to the next chapter.

Teaching should be such that what is offered is perceived as a valuable gift and not as a hard duty.

—Albert Einstein



Small group work may be implemented face-to-face in the classroom or over chat networks suitable for online classes.



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3 Improving Success

According to the Center for Excellence in Learning and Teaching at Penn State University (1997), "If there's no good reason for an activity to be collaborative, perhaps it should not be." This advice should be heeded for any small-group task. Therefore, when choosing an SGL exercise, first define your instructional goal (e.g., problem solving, reviewing of material, networking or building group cohesion, increasing social skills, reinforcing a concept, etc.).

Directions? Don't start without them

Whatever your purpose, give students clear, explicit directions and state your expectations. Also, explain to them the purpose of the SGL exercise (Nilson, 1998). By introducing small groups in this way, you give context to the task and help them relate the small group to the course.

Be sure to discreetly monitor the functioning of all the groups. Circulate among the students, but avoid being invasive unless a group question needs to be answered. If you assign out-of-class group projects, you may require the group to meet with you sometime during the course of the project (perhaps scheduling group conferences instead of class) or require them to periodically submit journals.

If journals are used, each group member should submit a separate journal describing how the group is progressing and what he or she has achieved thus-far. Requiring that a product be submitted encourages the group to stay on task and promotes individual accountability.



Monitor group functioning, and while in class, circulate among your student groups, but avoid being invasive unless a question needs to be answered or the group seems unable to proceed on task. Part of the SGL process involves members making creative use of the special dynamics inherent in each group.

Out-of-class work considerations

Furthermore, if you assign projects where most of the work is done outside of class, limit these projects to one per term, and allow plenty of time for completion. Students nowadays have many obligations besides schooling, and meetings outside of class pose a hardship for many students because of family commitments, work obligations, and commuting hassles (Watson, 1996). If you assign out-of-class projects, you may require students to have e-mail accounts so these "group meetings" can be done asynchronously.

Even when you describe your expectations and monitor the progress of assignments, problems still arise. When they do, you may find presenting a mini-workshop during class on member roles and group dynamics to be quite effective (Felder, 1995). Do this especially if you see a problem in more than one group.

Group types

There are three types of learning groups, and each has a special advantage. These learning groups are called informal, cooperative, and collaborative.



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Different structures for different purposes

Informal small groups are very common in the college classroom. These are the groups that form when you tell your students to “pick a partner.” You would not provide many directions to informal small groups, and you would not require them to submit a formal product for grading. Students do not have to take on formal roles, and they would not work together on a task for more than two consecutive class sessions (Cuseo, 1992).

Groups that are more formal include cooperative and collaborative groups. While both of these more formal groups share some common characteristics (such as you relinquishing some control), there are important differences to understand. Matthews et al. (n.d.) provide scenarios for instructors using both cooperative learning and collaborative learning techniques.

Briefly, cooperative groups are more structured, while collaborative groups use more negotiation to solve conflicts among its their members. Another difference is that cooperative learning stresses group processing, defined by Johnson and Johnson (1995) as “reflecting upon a group session to (a) describe what member actions were helpful and unhelpful and (b) make decisions about what actions to continue or change” (p. 236). By reflecting on their work, students become better judges of quality work.

Group composition

Group composition is another ingredient in the recipe for SGL success. To allow for better management and to increase students’ acceptance of their classmates, take into account size and diversity when creating small groups. Ideally, groups should have between two and five members, to allow everyone to contribute (Davidson, n.d.). Members should be chosen based upon



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differing achievement levels, learning styles, race or ethnicity, gender, academic majors or career objectives, ages, personalities, or past experiences. Except for the occasional informal small group, avoid allowing students to form their own groups. When groups are self-selected, students are more likely to stray from the objective and form cliques (Cooper, n.d.).

Again, by following the basic principles and taking into account the purpose of the small group, the type of group, and the group composition, you increase the productivity and therefore the academic success of your students.

The next logical question is, then, “How do I assess individual and group productivity?” Good question! The answer is coming up in the very next easy-to-assimilate section. But before going on, make sure you can recall the three types of group structure and the advantage of each type.

Have patience. All things are difficult before they become easy.
— Saadi, 1184



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4 Making the Grade

To give group grades or not to give group grades that is a tough question. Many instructors wrestle with that dilemma every term. While the arguments go on, here are three points in favor of group grades:

- Group grades emphasize individual accountability and interdependence.
- Advocates say group grades are a part of life and of the world of work—employees are required to work together to complete projects at jobs; many work as a group and are rewarded as a group.
- Small-group supporters also tout grades as promoting group processing (Ledlow, 1994).

On the other hand, you may not want to give group grades, because you feel they promote competition and tend to decrease cooperation. Grading pressures may cause the academically weaker students to be ostracized. Another consideration is that group grades may decrease intrinsic motivation; your students may be completing the project only for the grade, rather than for the knowledge or for the benefit of the group learning experience (Ledlow, 1994).

Since both sides provide sound arguments, what is our recommendation? At TFS, we feel you have the option to decide not to give small-group grades, or to give only participation grades. For those of you who feel that group grades are an important aspect of the classroom experience, Azwell (1995), Johnson and Johnson (1999), and Furtwengler (1995) provide a few suggestions.



You may not want to give group grades because they promote competition and tend to decrease cooperation. In these cases, the academically weaker students may be ostracized.

Group assignments and examinations can be assessed in any of the following ways:

- Average the scores of each member.
- Total all group members' scores.
- Add a group average to the individual scores.
- Randomly grade one group member's project or examination.
- Randomly call on a member of each group to answer questions.
- Convey to all members the lowest individual score.
- Give group grades and adding bonus points based on the achievement of the group (as when each person in the group scores above a certain amount).
- Assign individual grades and adding bonus points based upon improvement of group scores over the course of the semester.
- Parcel out group grades plus individual grades consisting of submitted journals, self-assessments, and/or peer evaluations.
- Grade the group product and individual contributions based on predetermined learning outcomes.
- Give group grades plus grading nonacademic contributions via peer evaluation (i.e., have group members



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evaluate fellow members on characteristics such as ability to work with others, effort, communication skills, and staying on task).

- Give group grades and giving nonacademic rewards (e.g., free time or permission to leave early).

Whichever method you choose, you should notify your students how they will be assessed. Cooper (n.d.) also suggests that you limit the amount of weight you assign to group performances to 10 percent or less of the total course grade. Meanwhile, other small-group proponents also recommend that grades not be curved, since students will be less likely to help each other when their own grades are at stake (Ledlow, 1994).

Still hesitant?

Some of you may still be hesitant to include SGL in your teaching. Some common concerns you may share include:

- Time efficiency compared to straight lecture
- The reluctance of students to accept small-group work as important
- The "free-loading" student
- The incorporation of small-group work into specific disciplines
- The appropriateness of small groups in large classes

A response to each of these concerns is given below for your consideration. In addition, the most common mistakes made by instructors are also noted.

"Lecture is faster. I won't cover as much material."

True, lecture is a faster way to convey information. However, how much are your students taking away from the lecture? Slavin (1990) cites research that clearly points to an increase in



You may want to mention on the first day of class that you will be incorporating small groups into your teaching. This notice allows students who do not feel comfortable with it to drop the class without penalty.

academic achievement when small groups are used. Although your students may not learn as much detailed information, they will learn other skills crucial to their academic success, such as problem solving, critical thinking, leadership, communication, and contributing to a group.

"Students will resist working in small groups."

True, up to a point, students have been known to resist working in a group. Woods (cited in Felder, 1995) even compares students' reactions to group work with the stages of grief; and unfortunately, you have to be cautious, because these negative feelings could result in low student course evaluations (Felder). If you believe students will resist, start small by using an informal small group in the middle of a lecture.

You may also want to mention on the first day of class that you will be incorporating small groups into your teaching. This notice allows students who do not feel comfortable with SGL to drop the class without penalty. Also, provide training on the skills you believe are important to the success of SGL, and ask for formal and informal knowledge of progress (i.e., feedback) from the students. With this knowledge of progress, you can make periodic adjustments and try again in a week (Felder, 1995). Also, when students believe you value their opinions, they will be



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more likely to participate. However, you will need to be patient. Not every small-group experience will be successful, especially the first time you implement it.

"One student will do all the work."

Individual accountability is important, as is interdependence. Both of these characteristics should be assessed in some way. If you follow one of the suggestions given above on assessing students, they will be more likely to make a significant contribution to the group.

"Groups just don't work in my discipline or class."

Teachers have implemented small-group learning in a variety of disciplines, including math (Morrow, 1995), psychology (Mehring, 1995), reading (Larson, 1995), and various sciences (Felder, 1995; Irwin, 1995). Researchers have also concluded that small groups are appropriate for every age group, from elementary students (Slavin, 1988) to college students (Foyle, 1995; Nilson, 1998) and adult learners (Imel, 1996). Small groups have even been successful in various distance-learning courses (Cahoon, 1996).

"My class is too large for small groups."

Small groups can be implemented in any size class; however, classes held in large lecture halls may benefit the most from informal small groups. This is because you may have too many students and too little time to assess individual performance. One suggestion would be to ask each group to brainstorm applications of the concept you are teaching, and randomly call on groups to share their results. For more ideas in large classes, refer to Ebert-May, Brewer, and Allred (1997).

Beware of the most common mistakes when implementing small-group work. A very common error is to allow friends to



A very common error is to allow friends to work together. This could adversely affect group functioning. First, students may socialize too much and not stay on task. Second, it does not allow students to be exposed to different cultures and belief systems.

work together. This could adversely affect group functioning in a couple of ways: first, students may socialize too much and not stay on task; second, sticking with friends shelters students from potential exposure to different cultures and belief systems (Cooper, n.d.).

Some instructors create groups of more than five members, and this can be detrimental to success as well. Limiting group size to around five allows everyone to contribute to the work by giving them more time and more opportunity to participate (Cooper, n.d.).

Some instructors may even become so enchanted with small-group work that it becomes the central learning activity, overshadowing all else.

Teaching is an art that incorporates many methods. Before implementing small groups, ask yourself why is it the tool of choice, and do you know of another method that is just as beneficial for your purpose? When planning your lessons, use a variety of teaching methods to stimulate your students and make your course more interesting.

Ready to get your feet wet? The next chapter provides some proven small-group structures that can be quickly and easily implemented in your classes. Remember, a small group can be formed as simply and quickly as one student turning to his or her neighbor to engage in a brief discussion task.



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5 Easy Group Structures

As previously mentioned, you should start small when incorporating group learning into your classes. Below are examples taken from Nagata and Ronkowski (1998), Nilson (1998), and the Walker Teaching Resource Center at the University of Tennessee (1996).

Think-Pair-Share

Follow these steps to implement the pair-share technique:

- Pose a question that requires higher-order thinking (e.g., analysis, synthesis, or evaluation).
- Give students time to reflect and write their thoughts.
- Have students share their thoughts with a partner.
- Have students then pair with another two-member group and share responses.
- Ask students to share their individual reflections and the group's reflections with the class.

Numbered Heads Together

The following outlines the "numbered heads" scenario:

- Students are assigned in groups, and each group member counts off (1, 2, 3, 4, etc.).
- The instructor poses a question that requires higher-order thinking skills.
- Group members discuss the question and agree on an answer, while making sure everyone in the group understands the concept.
- The instructor calls out a number, and that member of each group is the spokesperson who reports to the class.



STAD (Student Teams Achievement Divisions)

- After a video, lecture, demonstration, or other teaching, students are divided into small groups.
- Each group is given a worksheet to complete that reinforces the concepts learned.
- When members are done, the instructor questions the group or randomly picks one student to question.

Constructive Controversy

For this simple but effective structure, do the following:

- Divide learners into groups of four.
- Then, assign pairs in each group to research opposing sides.
- Provide time in class for this research.
- Students regroup so each pair can present its arguments to the other.



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Roundtable

As a sequential group process, this structure adds variety to your group sessions:

- Break the class into small groups.
- Provide each group with paper and pen or pencil.
- Pose a question that has more than one correct answer.
- After taking two minutes for analysis, the first group member writes his or her responses and passes the materials to the person on the left.
- Repeat the above step until all members have an opportunity to write something or time is called; students can pass if they choose.
- Finally, relate the question to the lesson and either ask students to share their answers with the class or discuss each group member's answer.

Send-A-Problem

- After assigning groups, provides cards to each student.
- Each student composes a question on the card.
- Each student asks the question to the group.
- When all members agree on the answer, it's written on the back of the card. If no consensus is reached, revise the question and try again.
- The stack of cards is passed on to another group.
- Each member then takes a card from the new stack and reads the question.
- Group members discuss each question, and if an answer is agreed upon, they turn the card over to compare their answer to the original answer; if the answers don't match, the groups write alternative answers on the back of the card.



Roundtable exercises provide each group member with an opportunity to express his or her own ideas regarding an issue or question posed by the instructor. The simplicity of the structure makes it useful in many different class situations.

- After each question is asked, the stack is passed to another group.
- At the end of the task, the stack is given back to the original group to discuss any alternative answers and field questions from the class.

Team Expectations

This activity is for small groups working over a longer period:

- The instructor constructs a form and gives it to each student.
- Students write what desirable behaviors they expect of each individual, each pair, and the entire group.
- The group comes together to discuss the answers and negotiate a group list based upon each individual list.
- Students use these lists to monitor progress as well as evaluate peers at the end of the project.

That's it. You've gone from SGL theory to practice. Now take the quiz on the next page and show you know.



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6 Show You Know

1. At the most fundamental level, why does small-group learning work?

- a. Students become directly involved in the learning process.
- b. Students need a break from tedious lectures.
- c. Students like to talk and make new friends.
- d. It gives the instructor a much-needed break from teaching.

2. The elements of Johnson and Johnson's SGL model are:

- a. Personal, Interaction, Group energy, Systematic learning.
- b. Prestige enhancement, Interactional dynamics, Growth stimulation, and Synergistic analysis.
- c. Positive independence, Individual accountability, Group interaction, and Social skills.
- d. Personal profit, Independent thinking, Grappling with growth, and Situational analysis.

3. How can you help ensure equal participation in an SGL exercise?

- a. Teach the group social skills.
- b. Limit group size to two members.
- c. Form groups from students who are already friends.
- d. Have members change group rolls every two to three minutes.

4. What essential social skills are needed for an SGL experience?

- a. Perseverance, Accountability, Logical questioning.
- b. Leadership, Communication, Active listening.
- c. Psychological analysis, Trait identification, Critical thinking.
- d. Passive manageability, Diverse acceptance, Auditory adroitness.

5. A primary means of boosting group success involves which of the following techniques:

- a. Giving students a clear, specific purpose to fulfill.
- b. Forming the group into a circle.
- c. Grading each members performance.
- d. Assigning out-of-class work.

6. Identify a key difference between collaborative groups and cooperative groups.

- a. In collaborative groups students need not submit a product for grading.
- b. Assigned roles are not used with cooperative groups.
- c. Collaborative groups stress more group processing.
- d. Collaborative groups rely more on negotiation to solve member conflicts.

7. Name a recommended method of grading group assignments or examinations.

- a. A panel of peers reviews group products and assigns a grade.
- b. Members grade themselves.
- c. You randomly grade one group member's project or examination.
- d. You ask a fellow instructor in your department to observe a group exercise and grade each student.

8. What can you do when students resist working in groups?

- a. Start small by trying an informal group exercise during a lecture.
- b. Reduce the grade of those who resist.
- c. Substitute a term paper if a student chooses to be excused from group exercises.
- d. There is really nothing you can do it this situation.

To learn more, use the SGL sources listed in Appendix A.



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Afterword

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