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How to Make Small-Group Learning Work

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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 here is



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.

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 Course) 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.



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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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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 work together. This could adversely affect group functioning in a couple



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.

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 (PIGS).
- 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.

Answers: 1. a, 2. b, 3. d, 4. b, 5. a, 6. c, 7. c, 8. a



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Active Learning Center. (no date). *Principles of Cooperative Learning*. Retrieved from: <http://courseweb.tac.unt.edu/overall/CECS4100/Resources/CoopLearn/coprinc.html>

Azwell, T. S. (1995). Alternative Assessment Forms. In H. C. Foyle (Ed.), *Interactive Learning In the Higher Education Classroom* (pp. 160-174). Washington, DC: National Education Association.

Cahoon, B. (1996). Group Learning and Technology. In S. Imel (Ed.), *Learning in Groups: Exploring Fundamental Principles, New Uses, and Emerging Opportunities* (pp. 61-69). San Francisco: Jossey-Bass.

Center for Excellence in Learning and Teaching. (1997). *Commonly Asked Questions About Teaching Collaborative Activities*. Retrieved from: <http://www.psu.edu/celt/PST/collab2.html>

Cooper, J. (n.d.). *Sabotaging Cooperative Learning: Or, Snatching Defeat From the Jaws of Victory*. Retrieved from: <http://clte.asu.edu/active/sabotage.pdf>

Cooperative Learning. (n.d.). Retrieved from University of North Dakota, Volcano World Website: <http://volcano.und.nodak.edu/vwdocs/msh/llc/is/cl.html>

Cuseo, J. (1992). Cooperative Learning vs. Small-Group Discussions and Group Projects: The Critical Difference. *Cooperative Learning and College Teaching*, 2(3), 5-10.

Davidson, N. (n.d.). Cooperative/Collaborative Learning. Retrieved from: <http://www2.maricopa.edu/innovation/CCL/CCL.html>

Dillenbourg, P., & Schneider, D. (1995). Group Composition. In *Collaborative Learning and the Internet* (Section 3.1). Retrieved from University of Geneva, TECFA Web site: http://tecfa.unige.ch/tecfa/research/CMC/colla/iccai95_15.html

Ebert-May, D., Brewer, C., & Allred, S. (1997). Innovation In Large Lectures—Teaching for Active Learning. *Bioscience*, 47, 601-607.

Felder, R. M. (1995). We Never Said It Would Be Easy. *Chemical Engineering Education*, 29(1), 32-33.

Foyle, H. C. (Ed.) (1995). *Interactive Learning in the Higher Education Classroom: Cooperative, Collaborative, and Active Learning Strategies*. Washington, D.C.: National Education Association.

Furtwengler, C. B. (1995). Practical Methods for Assessing Cooperative Learning In Higher Education. In H. C. Foyle (Ed.), *Interactive Learning in the Higher Education Classroom* (pp. 141-159). Washington, DC: National Education Association.

Imel, S. (Ed.) (1996). *Learning in Groups: Exploring Fundamental Principles, New Uses, and Emerging Opportunities*. San Francisco: Jossey-Bass.

Irwin, S. (1995). A Collaborative Approach To Elementary Science Methods. In H. C. Foyle (Ed.), *Interactive Learning in the Higher Education Classroom* (pp. 63-74). Washington, DC: National Education Association.



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Johnson, D. & Johnson, R. (1993). What We Know about Cooperative Learning at the College Level. *Cooperative Learning*, 13(3). Retrieved from: <http://home.capecod.net/~tpanitz/ccchtml/weknowcl.html>

Johnson, D. W., & Johnson, R. T. (1999). *Learning Together and Alone: Cooperative, Competitive, and Individualistic Learning*. Needham Heights, MA: Allyn & Bacon.

Johnson, D. W., Johnson, R. T., & Holubec, E. J. (1994). *Cooperative Learning in the Classroom*. Alexandria, VA: Association for Supervision and Curriculum Development.

Johnson, D. W., Johnson, R. T., & Smith, K. A. (1991). Cooperative Learning: Increasing College Faculty Instructional Productivity. *ASHE-ERIC Higher Education Report No. 4*. Washington, DC: George Washington University School of Education and Human Development.

Kagan, S. (n.d.). Cooperative Learning: Pros and Cons. Retrieved from: <http://www.kagancooplearn.com/Newsletter/1099/NwsNote.html>

Ledlow, S. (1994). Group Grades in Cooperative Learning Classes. Retrieved from: <http://www.public.asu.edu/~ledlow/sledlow/group.htm>

Matthews, R. S., Cooper, J. L., Davidson, N., & Hawkes, P. (n.d.). Building Bridges between Cooperative and Collaborative Learning. Retrieved from: http://www.csudh.edu/soe/cl_network/RTinCL.html

Mehring, T. A. (1995). Cooperative Learning in Psychology 370. In H. C. Foyle (Ed.), *Interactive Learning in the Higher Education Classroom* (pp. 160-174). Washington, DC: National Education Association.

Morrow, J. (1995). Reading Classes and Cooperative Learn-

ing. In H. C. Foyle (Ed.), *Interactive Learning In the Higher Education Classroom* (pp. 104-111). Washington, DC: National Education Association.

Nagata, K., & Ronkowski, S. (1998). Cooperative Learning Strategies for University Students. Retrieved from: <http://id-www.ucsb.edu/IC/Resources/Collab-L/strategies.html>

Nilson, L. B. (1998). *Teaching at Its Best: A Research-Based Resource for College Instructors*. Bolton, MA: Anker Publishing.

Slavin, R. E. (1988). *Student Team Learning: An Overview and Practical Guide* (2nd ed.). Washington, D.C.: National Education Association.

Slavin, R. E. (1990). *Cooperative Learning: Theory, Research, and Practice*. Englewood Cliffs, NJ: Prentice Hall.

Walker Teaching Resource Center. (1996). *Cooperative Learning*. Retrieved from University of Tennessee at Chattanooga, Grayson H. Walker Teaching Resource Center Web site: <http://www.utc.edu/Administration/WalkerTeachingResourceCenter/FacultyDevelopment/CooperativeLearning/>

Watson, G. (1996). No More Group Work Please! *Innovate*. Retrieved from: http://clte.asu.edu/active/no_more_gw.pdf