

Objectives

To structure lessons and support groupwork skills so that students experience successful collaboration. In particular, students need assistance with group formation, equal participation, individual accountability, and positive interdependence (components advocated by Spencer Kagan as essential for effective group work).

Forming the First Groups

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This activity allows students to practice pair work and small group work in a scaffolded manner before being asked to do so on their own.

Group formation: Pair work on first day: I make certain that the all students will be able to form pairs quickly by setting up the room with an even number of rows so that pairs can be formed by asking students in pairs of rows to work with the person sitting across from them. In observing otherwise cutting-edge, research-based physics education classrooms, I have noticed that when students are asked to “find a partner,” some students are left alone, often precisely those students most in need of collaborative help. Thus, it is important to structure the room and the pairing instructions so that all students have a partner.

Once the semester is well underway, I move to instructor-formed base groups of four students that remain intact throughout the semester. (See Kagan on recommended group size of four) I form the groups so that friends are not working together and groups have a mix of skill levels and race, ethnic and gender diversity (while not isolating potential minorities; see literature for advice on doing so.)

Equal participation and individual accountability: In the initial pair work, the activity is structured so that each student has a specified time to speak. Also, one student is designated as the notetaker and the other student is asked to report out, with roles reversed in the next activity. In this way, students immediately begin to practice more equal participation and individual accountability. Later in the term, it is possible to relax these time constraints and role assignments. However, without practice with good group dynamics, domination by one student and free-riding by others will undercut effective group work.

Positive interdependence: The first small group activities are designed so that positive interdependence (students need input from one another in order to complete the task) occurs within the task itself. Such activities include students surveys that requiring data from each student and jigsaws that require answers from each group member. Looser structures often create a situation in which students inexperienced in working together can complete the activity better on their own. As result, students see no reason to collaborate. Activities that build in positive interdependence demonstrate to students the effectiveness of group learning more effectively than my exhortation about the importance of collaboration.

Author

various

Materials & Resources

Classroom Context

Various

Time Requirement

Varies

About this Project

This is one of a set of materials compiled for instructors to draw upon in order to frame non-traditional modes of classroom teaching for their students. Our hope is that these materials can help reduce any student resistance to such techniques.

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Other materials available online at www.colorado.edu/sei/fac-resources

Activity: Constructive and Destructive Group Behaviors

On the following page is a worksheet that can be given to students to discuss different type of behaviors among group participants. This can be used for setting productive norms for group collaboration in the course.

Effectiveness

Attention to the structure of small group work during its initial use frees the instructor to focus on the learning goals. Thus, rather than assisting isolated students who have no partner, or groups in which some students dominate, the instructor can highlight successful student work, pointing out that it occurred because of successful collaboration. Also, students learn the expectations for group work so that pair and group work can be implemented quickly in subsequent classes with appropriate group formation, participation and accountability.

Further Reading

Mark Maier, KimMarie McGoldrick, Scott Simkins, Cooperative Learning and Disciple-Based Pedagogical Innovations: Taking Advantage of Complementarities, In Cooper, James. Ed. *Small group learning in higher education: Research and practice*. Stillwater, OK: New Forums Press, 2011.

Kagan, S. (1994) *Cooperative learning*. San Juan Capistrano, CA: Resources for Teachers, Inc

Millis, B. J. (2010). *Cooperative learning in higher education: Across the disciplines, across the academy*. Sterling, VA: Stylus Press.

“Cooperative Learning” at the Science Education Resource Center: <http://serc.carleton.edu/econ/cooperative>

Constructive and Destructive Group Behaviors

Each group will have its own feel and personality based on the people in the group. This exercise helps clarify, both to you and your participants, the strengths and weaknesses each member contributes to the group.

Activity (10 minutes): Each participant chooses his most constructive and destructive group behavior from the following lists. Each participant then shares the choice with the larger group and explains why she chose those behaviors. The facilitator may also wish to write down each participant's strengths and weaknesses so individual participants can be called on when a certain behavior is needed or needs to be curbed.

Constructive Group Behaviors

- Cooperating:* Expresses interest in the views and perspectives of other group members and is willing to adapt for the good of the group.
- Clarifying:* Makes issues clear for the group by listening, summarizing and focusing discussions.
- Inspiring:* Enlivens the group, encourages participation and progress.
- Harmonizing:* Encourages group cohesion and collaboration. For example, uses humor as a relief after a particularly difficult discussion.
- Risk Taking:* Is willing to risk possible personal loss or embarrassment for the group or project success.
- Process Checking:* Questions the group on process issues such as agenda, time frames, discussion topics, decision methods, use of information, etc.

Destructive Group Behaviors

- Dominating:* Takes much of meeting time expressing self views and opinions. Tries to take control by use of power, time, etc.
- Rushing:* Encourages the group to move on before task is complete. Gets "tired" of listening to others and working as a group.
- Withdrawing:* Removes self from discussions or decision-making. Refuses to participate.
- Discounting:* Disregards or minimizes group or individual ideas or suggestions. Severe discounting behavior includes insults, which are often jokes.
- Digressing:* Rambles, tells stories, and takes group away from primary purpose.
- Blocking:* Impedes group progress by obstructing all ideas and suggestions. "That will never work because..."

Adapted from Brunt (1993). Facilitation Skills for Quality Improvement. *Quality Enhancement Strategies*. 1008 Fish Hatchery Road, Madison, WI 53715