Group Work and Collaborative Learning: Best Practices

Group work is a component of many Scholarship in Practice course designs. Group work mimics practice in many fields, and serves to support student gains in SP outcome #4. Setting up work in group projects vs. individual projects will allow for a more manageable course design – especially with large enrolment courses.

When designing group projects there are two essential components that must be addressed:

1. The group project must support a positive collaborative learning experience
2. Students must be held accountable for their participation in the team effort.

Essentials of collaborative learning

1. Positive Interdependence
   a. Students must see that their success is dependent on the contributions, inclusion, and success of the other students in the group.
   b. Instructors must create tasks that require the insights and efforts of more than one person

2. Face to Face promotion Interaction
   a. Students must have time and opportunity to exchange ideas orally and discuss the concepts at hand. This can be facilitated by assigning students roles in the team work.

3. Individual and Group Accountability
   a. Students must be accountable both for contributing their share of the work as well as for the group reaching its common goal.
   b. Individual and group accountability is achieved by grading students both on their individual work and on the work of the group, for example, both on an individual laboratory report and on a group-designed and -generated scientific poster presentation.

4. Interpersonal and Small Group Skills
   a. Instructors can aid students in developing these skills by defining and expecting cooperative behaviors. Examples of cooperative skills could include actively listening to all members of the group, actively encouraging all members of the group to verbally participate in discussion, being critical yet supportive of alternative views, maintaining opinions until convincing contrary evidence is provided, and learning how to ask clarifying questions of others.

5. Group Processing
   a. Students must have the opportunity to discuss how the work of the group is going, what has been successful, and what could be improved. Examples of how group processing can be achieved are through explicit conversation by the group or anonymous written responses that are synthesized and returned to the group by the instructor.

Designing the Group Project

- Ensure that the project will benefit from the insights and efforts of more than one student.
- Make the project relevant. In the SP course- designing a project that is authentic to the course discipline will allow students to see the relevance of the work in the context of the discipline.
- Design the project to support student gains in course learning outcomes. If the project is relevant to the course learning goals student will see the relevance of the work to the overall course and will be more likely to participate actively.
- Give appropriate course credit to the work that is done and guide progress of the group work with clear expectations and grading criteria.
Setting up teams

- **Decide how the groups will be formed.** Most instructors prefer structured groups. Determine the strategy that you will use to determine group membership. These may include using a questionnaire where students self-report (students may decline to report some information) responses to questions relevant to the team project. Then teams are structured such that each team has a diversity of expertise. Students may also be assigned team roles such that each team reflects a diverse group of stakeholders that will be instructed to bring the stakeholder perspective to the team work. Wright et al (2002) builds teams after asking students to self-assort into guilds: 1) an administrator guild that organizes team efforts, 2) an artist guild that helps the team think creatively, 3) a communicator guild that facilitates interpersonal interactions among team members, and 4) an expeditor guild that steps in and performs functions as needed. After guilds are established, project teams are formed with individuals who represent each guild.

- **Jigsaw: A strategy to expand the power of group work.** Students are members of two groups: one where they work with a team to become expert in an assigned topic and one group that is made up of a diverse set of “experts” that work together to complete a team project that demands a variety of insights.

- **Be conscious of group size.** In general, groups of four or five members work best. Larger groups decrease each member’s opportunity to participate actively. The less skillful the group members, the smaller the groups should be. The shorter amount of time available, the smaller the groups should be.

- **Keep groups together.** When a group is not working well, avoid breaking it up, even if the group requests it. The addition of the floundering group’s members to ongoing groups may throw off their group process, and the bailed-out troubled group does not learn to cope with its unproductive interactions.

- **Help groups plan how to proceed.** Ask each group to devise a plan of action: who will be doing what and when. Review the groups’ written plans or meet with each group to discuss its plan.

- **Regularly check in with the groups.** If the task spans several weeks, you will want to establish checkpoints with the groups. Ask groups to turn in outlines or drafts or to meet with you.

- **Provide mechanisms for groups to deal with uncooperative members.** Assessment of collaborative learning – Points that contribute to the final course grade

- **Ensure that individual student performance is assessed and that the groups know how their members are doing.**

Assessment of Individual Performance on a Group Project

Examples include assessments by instructors and by peers. Peer assessment hold special value by providing formative information to help individual students improve team performance over time and develop the interpersonal and team skills essential for their future success, and summative data to the instructor that can be used to ensure fairness in grading by incorporating an assessment of each member’s contributions to the success of their teams and make judgments about it.

Some examples of assessments:

From General Microbiology BSCI 223 at UMD:

Students have the opportunity to improve in group work skills over the course of the semester. After each of three group projects team members will complete an evaluation as described below:

**Work completed on group projects is subject to peer review.** For each group project your group will receive a group grade. Each person in the group will complete a peer review form for each group assignment. If your group members indicate that you have contributed 100% to the group effort, you will receive the group grade for that project. If your group members indicate in the peer review that you did not contribute according to the level decided by the group at the initiation of the assignment, you will
receive a percentage of the group grade that reflects your level of participation as reflected in the peer review process.

From business course BMGT 495 at UMD:
Students will have the opportunity to complete peer evaluations 3 times during a semester to identify both high and low contributors and to give low performers an opportunity to correct their behavior. The first 2 peer evaluations are intended to be developmental, helping each team member identify area where he/she needs improvement and to make the necessary corrections. The final peer evaluation will be evaluative in that it will affect each team member's grade. To receive full credit for your teams’ activities during the semester your final peer evaluations must average 4.0 or higher. Any student whose final peer evaluation average is below 4.0 will have their scores reduced as explained below:
- Students who have a 3.5 to 4.0 will receive 85% of the team grade.
- 3.0 – 3.5 will receive 80% of the team grade.
- 2.5 - 3.0 will receive 75% of the team grade.
- With scores below 2.5 students will receive 60% of the team grade.

To avoid misunderstandings, teams should set expectations in the first team meeting, assign roles and duties, and hold each other accountable for performance on a weekly basis. Most team issues can be handled within the team.

From ENES 100 at UMD:
After you form your teams, each team will be required to keep a record of their meetings. This record can either be in the form of a notebook or a web based log (blog). Each log is intended to document the team’s experience. Logs must include the names of the team members present at each meeting, their team role, minutes from the meeting, a list of action items (including who is responsible), and an update of what action items were accomplished from previous meetings (including who did the work).
The logs will provide a record of the team’s progress on the design, manufacturing and testing of the product. This is the team’s documentation of the time and effort spent on the project. Teams must bring their logs to each class and/or update a web-based blog prior to the start of class. Logs will be collected/viewed periodically with little or no forewarning. Note: if the team divides into subgroups, the subgroups should maintain separate notes, to be integrated into the main team log.

Peer Evaluations: No fewer than two peer evaluations will be given during the semester. The peer evaluation forms will be available from the course website. The results will be summarized and/or made available to each individual student. The result of this evaluation, the recommendation of the Teaching Fellow and the Graduate Assistant, the instructor's personal discretion, and information from the team logs will be used to determine the “Individual Contribution to Team” grade

From Cestone et al (2008)
- Students are expected to assign teammates a score based on the extent to which they believe their teammates contributed to the overall team performance. For example, in a six-person team, fifty points are given to each student to divide among five team members (self-excluded), with a minimum possible score of seven, average of ten, and maximum of thirteen. The overall score for an individual is then calculated by summing the scores received from each teammate. Students also have an opportunity to include qualitative comments. This method requires that students make distinctions among peer performances; not everyone can receive a ten.
- Students are given one hundred points and prompted to divide them among team members based on their degree of contributions. All members then get a peer score that is the sum of the points they are awarded by each team member and then this total is multiplied by the their mean readiness assurance test score (or another group score) to come up with an adjusted group score. Students are also prompted to provide qualitative feedback with justification for the number of points that were assigned. Students may assign all one hundred points to each peer; there is no required differentiation of points.

Full credit is earned by all team members who adequately contribute to the team project. The paper contains information about each student’s individual contributions, including which student was the primary author of each section. In addition, the team maintains a project log that details each team meeting, who was in attendance, and what was accomplished. Finally, each team member completes a confidential evaluation of the contributions of all other team members. This information is typed up by the instructor to provide individual feedback. By examining individual evaluations, the project log, the paper, and the individual portion of the presentation, the instructor can accurately evaluate whether each team member deserves full participation credit.

Sources and Resources


Fink, D. (2004). Beyond small groups: Harnessing the extraordinary power of learning teams. In L. Michaelsen, A. Knight, and D. Fink (Eds.), Team-based learning: A transformative use of small groups. Sterling, VA: Stylus Publishing. Fink provides information on the use of small groups, and encouraging the value that the small group provides for students, especially in increasing their learning outcomes.

This article gives an example of how the jigsaw grouping method is used to engage students in a significant course project.


Outlines the five essential elements of effective cooperative learning, provide examples of informal cooperative groups that cultivate learning and specific ways of implementing them.

Wright and Boggs provide project outlines, evaluation criteria for teams and individuals

Websites with useful information on Group Projects
http://www.wcer.wisc.edu/archive/cl1/cl/doingel/jigsaw.htm
http://www.teambasedlearning.org/
http://teaching.berkeley.edu/bgd/collaborative.html
http://serc.carleton.edu/econ/cooperative/index.html