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Creating Effective Group Work
Tips, Tricks and Resources

Group Selection

Although there is currently no consensus in the literature about a single best way put students into effective groups, below are some ideas that you might consider in forming your groups:

1) Random selection: This might be a good idea for a short-term group—a group for one activity or one class period. It also helps with smaller classes where the students know each other too well and may need some extra incentive not to get off track and chat with their friends. Some good ways to get students into a random group would be

   a) Playing cards—you have an easy way to get people into groups of four or less if you alter the deck to have less than 4 of each type

   b) Let Canvas (ELMS) do it for you (http://guides.instructure.com/m/4152/l/55491-how-do-i-automatically-assign-students-to-groups)—it's truly random and allows for groups to have online space to work as well, but doesn't take into account students who may not be coming to class

   c) Candy—count out different types of candy and each group must have one type of candy. For instance, you might have twenty students that you want to put into groups of four, so you would count out five Hershey Kisses, five Starbursts, five Twixs, and 5 KitKats and then put them in a bag. Students would randomly choose a piece of candy on the way in to class. They then organize into groups so there are no duplicated types of candy. It's easy and most people like the free candy. The only down side is for big classes, that's a lot of candy to buy.

2) Characteristics: In this method, you would group students based on a defined characteristic such as GPA, number of courses in major they've taken, commuter or lives on campus, computer skills, personality type (as classified by a Myers-Briggs test) (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4469017/),or leadership type (http://teamwork.umn.edu/stepone). One researcher put her students in semester-long teams based on a self-assigned positive descriptor (such as kind, organized, creative, etc.). She classified students based on guilds and had students discuss what are positive and negative characteristics of each type of guild before forming groups based on those guilds. For more information see Wright and Boggs, 2002. There are reasons why you might was similar groups (all seniors, all commuters, etc.) and reasons why you might want more diverse groups (mixed GPA, mixed majors, etc.). Consider letting your students know what principles you used for putting them into groups and why. It helps them understand their group dynamics and makes the process more transparent.

3) Group Size: There are reasons to keep groups small so that each student must contribute to the group such as with groups of two or three. On the other hand, groups of 4-6 are good

for larger, multi-part projects. Groups greater than six tend to get too big and unwieldy. Even numbered groups can be nice since it requires groups to form a consensus rather than relying on one person to "break" the tie each time.

Group project or task

Task difficulty

Tasks assigned to group work must be complex enough to require the participation of all the group members. If a task, problem, or project is simple enough to be completed by one or two of the members of the group, one or two group members **will** complete the task for the whole group. Whether this is a short (lasting one class period) or longer (lasting multiple class periods) tasks or assignments should be complex enough in scope or difficulty to be achievable but requiring most if not all of the group members to participate.

Task assignment

In addition to complexity, you should consider task assignment as well. For longer projects or tasks, you may consider creating different roles within a group and either assign students or have students decide among themselves what their role will be. To avoid issues of certain subgroups of students being put into roles more often than others, such as women being note-takers or males as project leaders, consider assigning the roles for each group or rotating the roles if that fits the nature of the course and task.

Social Loafing

One common problem of group work is called social loafing—where one member of a group or team contributes little to no work while the other members of the group completes the project. The phenomenon occurs in many different settings and not just in team-based learning.

Individual Assessment

One common strategy to deal with this phenomenon is to incorporate both individual as well as group assessments as part of the assessment for the group work. This may mean turning in their own citations, or section of the paper, or other portion of the deliverable in addition to the final group submission. Individual assessments also help to clearly define contributions for all group members.

Peer/self-evaluation

A second strategy is to have peers evaluate their own contributions and the contributions of the peer (peer and self-evaluations). This allows for the faculty members to see where multiple members of the group may all indicate one person isn't contributing to the group project. Consider making the peer/self-evaluation an explicit part of how the final grade is determined either as a certain number of points

allotted to group contributions or maybe having groups assign what percentage of total points should go to each group member based on how much work her or she put in. Another option is to have a group log for every meeting to record who has been doing what specific tasks or responsibilities in the group and have that log serve as an evaluation at the end of the project for assigning group points. Keep in mind, if there are grade-based consequences to not contributing to the group (as defined by a student's peers or his/herself), you need to make sure that students know how they're being evaluated, and that there will be this evaluation at the end of the project or semester. Additionally, grades or points for group contributions need to be consistent and clear from the beginning to all the students in the class.

Voting off the island
One alternative used by of colleague at St. Mary's College of Maryland, is periodically see if group members want to "vote someone off the island." Loosely based off reality TV, the idea is that a unanimous vote of the group to vote someone out of a group would result in that group needing to do the same work with fewer people and the "loafer" would need to do the entire project on his or her own (or with someone else who has also been voted out of their group).

All of these strategies incorporate some accountability to the individual to contribute to the group either in the materials to turn in or in peer and self-evaluation. In addition, students need to know about these evaluation mechanisms from the beginning so it will guide their behavior in the group.

Conflict resolution

When there is conflict within a group, there is always the question for faculty about when to step in and resolve the problem either with group discussions or divide the group. The best advice is to avoid the conflict to start with, which is outlined below, and then some guidelines about dealing with existing conflict.

Preventing Conflict
One way of preventing group conflict is to be sure roles and responsibilities within a group are clear. Conflict is less a problem for short, low-stakes groups for one activity or one class period, but for semester-long teams, this is an issue to consider. One strategy is to have students assigned into pre-defined roles in the group with clear guidelines and products. Another option is to have a group contract at the beginning of the project or semester. This contract allows for students to come to consensus on what is "equal" in terms of work, when people will turn in their portion of the work and even what grade the group is trying for. Many times in trying to make diverse groups, we have students who may have very different grade expectations and consequently work expectations that can cause problems in the group. Getting that out of the way at the beginning helps everyone know what he or she need to do to contribute to the group upfront.

Dealing with Conflict

There isn't a clear guide on the single best way to intervene in a problematic group dynamic. In general, the quicker a group conflict is detected, the easier it is to address. So, consider formative feedback forms on the group to you and possibly to the other members of the group. These can be very quick and easy checkpoints for determining how groups are going and if they're on track for their project. You can also build in constructive feedback among group members for longer projects mid-way or at certain check points along the way—this allows a structure to inform group contributions without impacting grade and in a non-adversarial way. As with any type of peer feedback, it's always a good idea to give students a model of what constructive feedback should look like.

Some faculty make resolving conflict an explicit part of learning about teams, and spend class time addressing conflict resolution. Other faculty address problems when they become apparent in class or by student request. Conflict resolution is a much larger topic on its own, but should you find any behavior distressing to you or your students, you should address the issue by talking to the student directly, contacting the Counseling Center (301.314.7651) for disturbing behavior, and/or breaking up groups and adjusting the project. You can also contact the TLTC (tltc@umd.edu 301.405.9356) just to talk about your student groups and we can work through a solution to the conflict with you.

Assessing group work

There are many ways to assess student work. Some of the more effect group work incorporates both individual and group assessment. Individual assessment in addition to group assessment discourages social loafing, alleviates concerns about workload, and makes the process more transparent to students. This can be done in any number of ways, but usually relies on breaking larger projects down to smaller pieces with one or multiple deadlines, and assigning it to a person or role in a group. Many faculty want to emphasize process over product in their project. To do so, consider having multiple checkpoints in larger projects and grading for effort over product. You could also have students keep logs of all of their group-meetings, with information about contributions of each member that would be part of the individual assessment portion of a project (See Wright and Boggs under Resources below).

Student Resistance

Many students find group work time-consuming and resist the idea of working in teams. Be clear at the beginning of the semester and through the team-based project about why you are using teams. Talk to your students about how the skills that they develop in these teams will be useful for them in their future careers. There is a great study and book about this from the National Academies Press, *Education for Life and Work* (http://go.umd.edu/education-for-life-work), which talks about what skills will be helpful in the workplace and relate back to some of the skill that they learn in teams. There is a group-work survival guide put out by the University of Minnesota that is a humorous way of helping students conceptualize and organize group work (http://teamwork.umn.edu/). Also, keep in mind that just because

students resist a technique or concept, it doesn't mean they won't learn something valuable from it. Sometimes working through a conflict in a group is a good sign of student investment in the group and a good way to develop conflict resolution skills for their future jobs.

Equity in Group Work

Many of the same structures that make group work more effective for students, are the same structures that can make it more equitable. Here are a few that can help:

1. Don't let students choose their own groups. Instead choose student groups based on a criterion that is important to your class or to the group dynamic. Be transparent to your class as to how and why they are grouped.

2. Assign group roles and/or rotate group roles so that no one person is always the leader, note taker, or communicator.

3. Make sure each person's role in the group is clear—either by student-assigned or teacher-assigned roles.

4. Make sure there are both individual and group assessments built into larger projects.

5. Just as with the rest of your classroom, if you create diverse groups of students, don't create a situation where one person has to speak for an entire group or class of people such as for all women or all Asian-Americans, etc.

6. Consider formative feedback on group contributions to and within groups. For formative feedback within groups, consider screening for appropriateness and as a way for looking for group dynamic problems earlier rather than later in the semester.

Resources:
Creating teams, and assessing process and project
Wright and Boggs. Learning Cell Biology as a Team: A Project-Based Approach to Upper-Division Cell Biology. Cell Biol Educ. 2002 Winter; 1: 145–153. doi: 10.1187/cbe.02-03-0006 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC149487/

Social Loafing and other resources
Michaelsen, L. K., Knight, A. Bauman, & Fink, L. Dee. (2004). *Team-based learning : a transformative use of small groups in college teaching.* Pg. 52-58.1st pbk. ed. Sterling, VA: Stylus Pub.

Overview of group work: http://www.crlt.umich.edu/tstrategies/tsgwcl

https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/alternatives-lecturing/group-work/implementing-group-work-classroom

A student-based survival guide for group work from the University of Minnesota: http://teamwork.umn.edu/

Team-based learning resource pages at Vanderbilt with examples of peer evaluations: http://cft.vanderbilt.edu/guides-sub-pages/team-based-learning/

Dealing with controversial or "hot" moments
Warren, Lee, "Managing hot moments in the classroom." Derek Bok Center for Teaching and Learning, Harvard University
http://isites.harvard.edu/fs/html/icb.topic58474/hotmoments.html