This document provides an overview of four crucial aspects of guiding your students to become effective collaborative learners:

1. Forming collaborative learning groups
2. Setting clear expectations for group roles and interactions
3. Crafting collaborative learning activities
4. Creating opportunities for self-reflection and formative peer feedback

**COLLABORATION** is two or more students working together and sharing the workload equitably as they progress toward shared learning objectives. People who are generally educated work collaboratively with others on both small and large projects. Effective collaborators are *interdependent, interactive, accountable, and reflective*. That is, they work interdependently within a group, interact productively with group members, demonstrate accountability for their own contributions to the work of the group, and reflect on the success of the group, including their own contributions and the contributions of others.

Students who have learned collaboration will be able to:

- **Contribute to the development of shared goals within the group**
  - accept, articulate, and promote the agreed-upon goals of the group; help the group assign useful and productive roles for each group member

- **Contribute their own knowledge and expertise to the group**
  - take on the role or roles the group needs, developing new expertise as needed; encourage others in the group to contribute and develop as needed; and promote harmony and fairness within the group

- **Participate actively and responsibly in all group activities**
  - work effectively between group meetings, completing assigned tasks on time; identify and address conflict within the group

- **Honestly assess their own contributions and the contributions of others**
  - recognize roles and strategies that are and are not working; understand ways in which group performance could improve; honestly assess own contributions and the contributions of others

As defined here, collaboration is not simply putting students into groups or conducting group discussion within a single class period. The collaboration goal calls for structured learning activities that involve students actively, occur over a significant part of the semester, and provide for feedback from peers and instructors.
1. Forming collaborative learning groups

While not hard and fast rules, the following practices can contribute to effective collaborative learning experiences:

• Depending on the size of the class and the tasks, groups of 3-6 students work well.

• Assigning students to groups either randomly or based on student characteristics such as major is preferable to allowing students to form their own groups. Having students select a numbered card out of a hat on the first day of class is an easy random selection approach.

• Keeping students together for at least several weeks (preferably for an entire semester) allows students to build strong relationships and build trust, quite possibly resulting in better quality projects. Conflicts arising in the group must be resolved rather than ignored.

• Working in collaborative learning groups early in the semester helps set the expectations of continued collaboration throughout the semester. For example, students are able to practice collaborative skills on lower-stakes assignments before tackling a large group project.

2. Setting clear expectations for group roles and interactions

Clear expectations
Talk to students about why you are assigning collaborative work. Students might have previous negative experiences with group work and it helps to explain the why and how up front. This type of learning is challenging, takes hard work on the part of all involved, and requires students to develop skills over time and through trial and error. One approach to fostering shared expectations of positive interdependence is to discuss with students what they would do if a member of their team was coming to class unprepared.

Assigning roles
Rotating through explicit roles allow students to practice skills throughout the semester. In a classroom with tables, table tents with roles/responsibilities can be provided. Examples of roles include:

• Manager - a leadership position, moves the group through task, encouraging participation from all group members
• Recorder - takes notes to be turned in at the end of class, a form or template can help students keep their work organized
• Reporter - orally presents outcomes/ideas to class when required
• Summarizer - verbalizes findings/questions/outcomes to ensure understanding within group
• Technician - wields the calculator, prepares graphs
• Researcher - finds information online, by asking other groups or the instructor
• Elaborator - seeks connections between task and course goals/previous content
Help students get to know each other
Have students share basic information about themselves with their group. The first meeting or two can be used to have students document the benefits and challenges of collaborative learning, using the discussion outcomes to form the basis of an class-wide or individual group expectations contract document. Such a contract or expectation statement can then be used as the basis of formative feedback prompts provided later in the semester. Starting the semester with a relatively low-stakes collaborative assignment can help break the ice and allow students to build trust within their groups.

3. Crafting collaborative learning activities

To summarize the cycle of crafting effective learning activities, it is important to (a) assign meaningful, challenging tasks, (b) provide crystal clear instructions, (c) set a time limit, (d) monitor progress, (e) build in individual and/or group accountability, and (f) provide students with feedback and closure. To provide a bit more details, here is a design checklist for creating classroom activities or assignments that involve collaboration:

☐ What is the goal of the collaborative activity? Here are a few examples:
  • solving a problem
  • analyzing a case study
  • practicing a skill - demonstrated by instructor or from pre-class readings
  • generating a common list of questions about class material, either for a exam or class discussion
  • sharing and documenting prior knowledge of a topic in preparation for a mini-lecture
☐ Is the assignment or task more challenging than one expected of individual students? How will the task benefit from a group effort?
☐ Will each group have the same task? A common task can increase team accountability and allow for productive debate regarding task outcomes.
☐ Will the assignment involve class time or will student groups be expected to meet outside of class? How will the time and effort expectations be made clear?
☐ How will the instructor monitor progress during the collaborative learning activity?
☐ How will individuals be held accountable for their learning?
☐ How will the group be held accountable for achieving desired outcomes?
☐ What pre-class work will be required of students?
☐ What will groups submit at the end of a collaborative class period? Duplicate-page notebooks are an effective tool to allow instructors to collect student work while allowing students to maintain their own copies of the work or have them take a photo of their work.
4. Creating opportunities for self-reflection and formative peer feedback

Provide students with multiple opportunities to evaluate their teamwork efforts and the contributions of group members. Whether graded or not, peer feedback can help students focus on the aspects of collaboration that they need to develop further. Whether reflecting on the group efforts, their peers, or their own efforts, providing a form or rubric can reinforce collaboration expectations.

Group, Peer, and Self Assessment examples:


At the end of the semester, consider asking students to reflect on the collaborative learning experiences in the form of advice to future students. Examples of insightful comments that could be shared with students in subsequent semesters include:

- Get started right away - the manager must take command
- Admit when you don’t understand
- Get together outside of class
- Have everyone in the group say what we think
- Remind each other about deadlines; encourage each other
- Designate someone to bring their textbook
- Split up tasks; involve everyone

Collaborative learning is pedagogical approach with a great deal of scholarly evidence to support its use. Communicating expectations and helping students develop collaborative skills can be done primarily through the design of collaborative assignments, allowing students to focus primarily on course content. Establishing clear expectations for collaborative learning and providing opportunities for reflection require advance planning but not a great deal of class time.

Additional resources can be found on the last page of this document. If you have time to browse only one source for further information about collaborative learning, please visit Teed, R., et al. Cooperative Learning: A Starting Point module:

[http://serc.carleton.edu/introgeo/cooperative/index.html](http://serc.carleton.edu/introgeo/cooperative/index.html)
Additional Resources about Collaboration

Articles

http://www.tandfonline.com/doi/abs/10.1080/08832320009599960

http://www.jstor.org/stable/1313166


Nakayama, K. Active Learning Groups in Organic Chemistry, Merlot Elixr Case Story.

http://owww.brookes.ac.uk/services/ocsld/group_work/turnin_student_groups_into_effective_teams.pdf

Qualters, D. M. 2006. Acquiring Skills in Working with Others as Member of a Team. *POD-IDEA Center Learning Notes*.

Books


