

# Reflecting on Effective Teamwork

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**Context:** Out of class; Senior design for Environmental Engineering majors

**Keywords:** capstone/cornerstone, teams

**Student Activity Time:** 10-15 minutes in-class

*Students reflected on their experience debating an ethical issue.*

## Introducing the Reflection Activity

In a senior design course for Environmental Engineering majors, students engaged in a design project in teams. Throughout the semester, students reflected on their current and prior experiences working in teams. The purpose of these reflection activities was to help students learn from prior team experiences, productively engage in teams for their senior design project, and then learn from their experience in the senior design project.

At the start of the course, the educator introduced students to the senior design projects and to the fact that they would be working in groups on these projects. In this introduction, the educator talked about strategies for effectively and efficiently working in groups and strategies for effective team interactions. After this discussion, students were asked to reflect on their prior experiences working in groups, how they dealt with those group experiences, and what they would change for the future. Additionally, students read the article “Coping with hitchhikers and couch potatoes on teams” by Barbara Oakley<sup>1</sup>. Students individually wrote a reflection about the article including how it related to their prior experiences and how they may engage for the future as a part of their first technical memo. In the middle of the semester, as part of their second technical memo, students reflected on their current group experience as a way to learn from and make any necessary changes to the current group experiences. Finally, as a way to reflect on the entire experience, at the end of the semester in the final report, students wrote about their experience in their group (i.e. what they learned about working in teams, offering advice for the future).

After students submitted each of these reflections, the educator graded them using a credit/no credit approach. If students submitted the reflections and put a good faith effort into the reflection, they received full credit.

In terms of outcomes, after students engaged in these reflection activities there was potential for them to improve their future team experiences. Students may be more proactive in dealing with team issues after learning effective strategies for positive teamwork and coping with interpersonal issues, then engaging in reflection

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<sup>1</sup> Oakley, B. (2003). Coping with hitchhikers and couch potatoes on teams.

regarding what went well, what did not, and what they could change to make future interactions more positive. Also, there was potential for students to have better experiences working in teams because they developed new team strategies and learned to adjust while working in a team.

#### Recreating the Reflection Activity

	Description
1	Introduce students to the group design problems and assign teams using your preferred method. CATME <sup>2</sup> Software ( <a href="http://info.catme.org">info.catme.org</a> ) was used by this instructor.
2	Discuss with students strategies for effectively and efficiently working in groups.
3	Engage students in various reflection activities about their experiences working in teams.
4	Grade the reflections using a credit/no credit approach.
5	Debrief students on any issues arising from the reflections.

#### In the words of the Educator: Tips and Inspiration

*Provide students the support they need.* Overall, the activity is fairly straightforward, but you need to ensure that students do it. You can do this by making it a priority during class time and in class assignments.

*Explain the purpose of reflection.* Explain more about what reflection is to the students and emphasize the practice of looking forward in order to alter future behavior.

*Share reflections with any co-educators.* If you are co-teaching the course, it is important that all educators read the reflections.

*What was the inspiration for the reflection activity?* I wanted to address the fact that students often wait until an issue manifests in their group project and affects their grades before working to correct it. Second, I saw some students being taken advantage of by taking on more work, or by some students receiving a lower grade because a team member did not do their part. Finally, I wanted to make a positive change for students—something that would benefit them for their future.

<sup>2</sup> Layton, R. A., Loughry, M. L., Obland, M. W., & Ricco, G. D. (2010). Design and validation of a web-based system for assigning members to teams using instructor-specified criteria. *Advances in Engineering Education*, 2 (1), 1-28.