

Reflecting on Teamwork After a First-Year Service-Learning Project

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Context: Out of class; Freshman Orientation to Mechanical Engineering

Keywords: first-year experience, service learning, teams, written reflection

Student Activity Time: 1-2 hours outside of class

Students reflected on their individual experience working in a group service-learning project.

Introducing the Reflection Activity

First-year mechanical engineering students, who took a two-quarter orientation to mechanical engineering course, engaged in a series of “learning by doing” activities. After many of these class activities, students completed written reflections of their experience in these activities. The purpose of these reflection activities was for students to think about the question: “what was it about this experience that got my attention and how does it connect to who I am and my future?”

In one class activity, students participated in a group service-learning project in which they deployed an engineering outreach experience for a defined age group. Through this service-learning project, students engaged in the design process. While the reflection component could have focused on any aspect of the service-learning project, this reflection activity asked to individually reflect on their engineering team experience through answering a series of questions:

1. How well is the team functioning, specifically what is working well and what is not?
2. How could the team function better, specifically what can you do to support these changes?
3. Through this team project, what have you discovered about yourself and how you interact with you peers?

Additionally, students were encouraged to reflect on their current assumptions about themselves, classmates, their institution, and the community in which they live. When this reflection activity was assigned to students, the educator discussed with them the important role reflection plays in service-learning projects—helping students understand the project, connecting the experience to future goals, engaging students in deeper learning about the service-learning project, etc. After students submitted the reflection assignment, the educator graded the assignment using a credit/no credit grading approach, as well as gave minimal individual feedback.

In terms of outcomes, this activity provided students with an opportunity to think deeply about a team experience and potentially develop a deeper understanding of themselves, and specifically their role in teams. Additionally, when students engaged in reflecting on their experience in the service-learning project, they could have

thought differently or deeper about their learning in the project. More specifically, the purpose was for students to think broadly about their academic experience and chosen profession with the ultimate goal of helping students better understand if mechanical engineering was the correct fit for them.

Recreating the Reflection Activity

	Description
1	Develop and facilitate a service-learning project for students.
2	Discuss the importance of reflecting on the service-learning project.
3	Assign the reflection activity.
4	Read, assign, and give feedback to the reflection assignment.
5	Debrief the reflection assignment with students.

In the Words of the Educator: Tips and Inspiration

Try a reflection activity that uses alternative tools than writing. In working with students, I have historically assigned reflections in the form of writing. While I have had success with written reflections, I see great potential in alternative forms of reflection. I encourage educators, including myself, to think outside the box for different forms of reflections (e.g., videos, audio, portfolios, art). These different forms of reflection may have the potential to encourage students to think in new ways.

Provide students with feedback on the assignment. After reading the reflection assignments and assigning credit, take a few minutes in class to thank the students for sharing and debrief what you saw in the reflections. In this discussion, emphasize the importance of teamwork, not only in their academic careers, but in their professional careers, too.

Create a safe environment for the reflection activity to take place. Before students reflect on their service-learning project, discuss with them the importance of reflecting. In creating a safe environment for the reflection, grade the assignment using a credit/no credit system (i.e., if students actively engage in the assignment, they receive credit).

Be aware that engineering students do not like to write. In my experience, engineering students do not like to write, and many of them claim to have gone into engineering because they don't like to write. It's almost like you have to coax them into writing by explaining to them the importance of writing in both academia and professional engineering.

What was the inspiration for the reflection activity? In order for there to be the potential for students to gain the most from their participation in the service-learning project, I knew that the project needed to include a reflection component. Focusing the reflection on the teamwork component was important because I knew that students needed more participation in teamwork projects, and the opportunity to reflect on that.