

# Reflecting on Senior Capstone

**Educator:** Peter Schuster, Professor, Mechanical Engineering

**Context:** Out of class; Senior Design Mechanical Engineering

**Keywords:** capstone/cornerstone, design projects

**Student Activity Time:** 1 hour

*Throughout a senior capstone project, students reflected on their experience.*

## Introducing the Reflection Activity

In a year-long senior design course, students worked on industry proposed problems. Students engaged in six different reflection activities throughout the course (this field guide entry focuses on the first and second reflection assignments). While each of these reflection assignments was guided by specific prompts, they all included the question: “What was it about this experience or event that got my attention?” The purpose of these reflections was for students to look back on their senior design experience, learn from it, and make any necessary adjustments for finishing their project.

Before the first reflection assignment, the educator spent time talking to students about the value and purpose of reflection. In the first month of the senior design course, students spent time with their industry partner trying to understand the design problem they were addressing. After this period, students wrote a project proposal that included a reflection component. The goal of this reflection assignment was for students to think about their role on the project team and their role in the project. At the end of the project proposal students had the opportunity to reflect on their proposal using these questions/statements:

1. What kind of designer are you?
2. Reflect on how you view yourself as a designer.
3. Include comments on what skills you currently possess and on any additional you would like to develop.

The second reflection in this six reflection series engaged students in thinking about their interactions with their sponsor, client, or end user so far in the project. Students reflected on their interactions by responding to these questions/statements:

1. What were your assumptions about the sponsor, client, or end user before you met them and how have they changed through your interactions?
2. Please also comment on the amount of time, frequency and through what mode your interactions have taken place (i.e. face to face, phone, Skype).
3. Finally, please comment on how interactions with the sponsor could be improved.

After students submitted their reflections, the educator graded the reflections using a credit/no credit approach.

In terms of outcomes, after reflecting on their identity as a designer, students may have better understood who they were as a designer, their skills, and their role on the project team. They may also identify specific skills that they would like to enhance through their work on the project. After reflecting on their interactions with their sponsor, client, or end user, they may better understand these interactions and how to communicate with such stakeholders in the future.

#### Recreating the Reflection Activity

	Description
1	Talk with students about the value of reflection.
2	Engage students in reflecting on (1) what kind of designer they are and (2) their interaction with project stakeholders.
3	Grade the reflections using a credit/no credit approach.

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

*Talk to students about the purpose of reflection.* The first time I implemented this reflection activity, most students had no idea what to do—the assignment fell flat. The second time I implemented this reflection activity, I spent about 20 minutes sharing with students the value of reflection, why reflection mattered, and the purpose of reflection. The second time, students engaged more meaningfully in the reflection activity.

*Why did you implement this reflection activity?* Before I had taught the senior project class, I had never thought of doing a reflection in my teaching. It wasn't until I was gathering up the material that had been previously developed that I saw these reflection activities. I thought, that's interesting; I should give that a try. That's why I tried it with students the first quarter. Then the next time I realized I had to do a little bit more than just throwing it at them. I think I've improved my approach, but the reason that I did it, is I think it's important to think about how what you're doing affects what you'll be doing later on. There are two reasons that I never did that before in a classroom: one, I didn't think students would take it seriously, and two, I kind of assumed that if they were going to do it, they were going to do it anyway (there was no reason to make it formal). But, what I've realized since then is that this is a skill and just because it happens to come naturally to me, that doesn't mean it would come naturally to anyone else. So like any other skill it needs to be practiced. That's not why I did it initially, but I'm coming around to that being a good reason to do it.