

Plant Tour Reflection

Educator: Karen Bangs, Lecturer, Industrial and Manufacturing Engineering

Context: Out of class and in-class; Process improvement fundamentals

Keywords: connecting learning, career planning

Student Activity Time: 1-2 hours outside of class; 15 minutes in-class

At the end of a plant tour, students reflected on their experience.

Introducing the Reflection Activity

As part of the lab portion of an industrial and manufacturing engineering course, engineering undergraduate students, typically 2nd year with a few 1st year and 3rd years, participated in a plant tour. The purpose of the plant tour was to expose students to industry and engage them in thinking about how to transfer their classroom learning to their future in engineering. After the plant tour, students engaged in a reflective writing exercise in order to synthesize what they learned on the plant tour and relate it to the course learning objectives. The purpose of the reflection was to enhance the plant tour, help students gain more from the tour, and help students connect their classroom learning to industry.

Before the plant tour, the educator introduced the activity, goals of the activity, and the reflection component to the students (and the instructions for the reflection activity were also posted on the course learning management system). The educator also talked about things the students should do and think about while on the tour (e.g., ask questions, participate). After the plant tour, outside of class students reflected on their experience in a written reflection by responding to questions like these:

1. Identify where tools that were talked about in class were used at the plant.
2. What did you like about the plant tour? What did you not like about the plant tour?
3. Would you like to work for this company? Why or why not?

After students submitted their individual reflections, in-class students informally talked in groups about their experience in the tour, highlighting any important pieces (e.g., what they saw on the tour, how it could be applied to their class project). Students learned more from the plant tour by writing individual reflections, but there was potential for their learning to be augmented by hearing different perspectives from their peers. The educator graded the reflections using a complete/incomplete grading approach. If students answered all the questions and put a good faith effort into the reflection, then they received credit. After the reflections were graded, the educator engaged students in a discussion about themes and any highlights—this debrief provided an opportunity to wrap-up the plant tour.

In terms of outcomes, the educator anticipated that the reflection activity would support students in integrating their course knowledge and applying it to industry.

From the reflection activity, it is possible that students might connect what they saw in the plan tour to their own class project. More broadly, there is the potential that students see the bigger picture about solving problems—knowing which tools are the “right” tools for the job.

Recreating the Reflection Activity

	Description
1	Schedule a relevant plant tour.
2	Share with students the activity, goals of the activity, and the reflection component to the students.
3	Have students write a reflection about the plant tour.
4	Engage students in small group discussions about their reflection.
5	Grade the reflection, using a credit/no credit grading approach.
6	Debrief the assignment after it has been graded.

In the Words of the Educator: Tips and Inspiration

Treat education as a partnership. I believe that in supporting reflection it is important to treat education as a partnership. In doing so, as an educator it is important to create a safe environment.

Read about reflection. Read about reflections first, so that the reflection activity can be more complete. This background knowledge could help you as you prepare the reflection assignment, which could lead to students getting more out of it.

Provide students with structure reflection questions. I think it is important to have more structured questions. I’ve often thought, what if I don’t give them any questions, I just tell them to write about their experience. In this scenario, I think it can be challenging for them to engage in such an open activity. For example, I think especially the maturity level is an important factor; the sophomores having the more structure to step through the activity can help them go deeper with it.

What was the inspiration for the reflection activity? In my teaching, I am trying to engage students in thinking deeply about the content—I don’t want them do something related to the course and not have to somehow think about it, and I didn’t know how to have them think about the plant tour without them having to do an assignment. When I thought about the types of the assignments that they could do, these assignments weren’t interesting and not what I wanted students to get out of it. So, it seemed like reflection fit the best.