

Activity

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My Experience with School

Educator: Kathy Chen, Chair and Professor, Materials Engineering

Context: Out of class; First-year introduction to materials

Keywords: first-year experience, individual-reflection, future in engineering, learning styles

Student Activity Time: 1-2 hours outside of class

Students reflected on their past experience in school in connection to their future in college and as an engineering professional.

Introducing the Reflection Activity

In the first assignment in an introduction to a materials course, first-year students reflected about their attitudes about school and behaviors in school. In this self-reflection, the educator asked students to do a series of connected reflection activities. The purpose of the self-reflection was for students to pause and think back on what they have done in the past and their thoughts related to their future, particularly in engineering at Cal Poly.

In this reflection—“my experiences with school”—the educator asked students to write about their previous experiences with school, their perceptions of themselves as a learner, what they’ve enjoyed and struggled with in school, and any out of school factors that might impact their learning. To reflect on these topics, students participated in a series of reflection activities (i.e., first take a pre-survey, then take an academic assessment, and then write a reflection on their experience with school and answer questions they may have about materials engineering at Cal Poly). In the first part of the reflection, the self-assessment included questions that targeted students’ behaviors and beliefs that they may want to change in order to achieve more of their potential in college and life. The results of the self-assessment provided students with an opportunity to take an inventory of their potential strengths and weaknesses. After completing the academic assessment, students reflected on their previous experiences with school, perceptions of self as a learner, what they enjoyed and struggled with, and any out of school factors that may be impacting their learning. Next, students responded to questions about the Materials Engineering Program at Cal Poly. These reflections were graded as pass/fail; if students submitted the assignment and put a good faith effort into it, they received credit. In one or two cases, the educator followed-up with individual students about their reflections.

In terms of outcomes, the reflection activity provided an opportunity for students to engage in thinking about something they may not have thought about before—attitudes, behaviors, and perception of self as a learner. They may also have engaged in processing, thinking about, and connecting engineering to their personal lives. This reflection activity may have set the stage for students to realize their potential to take control of their own learning. The reflection provided the educator with an opportunity to get to know the

students, and furthermore provided her with important information that made it possible to shape the course in such a way that was dynamic and adaptive to students' individual and collective needs.

Recreating the Reflection Activity

	Description
1	Engage the students in a discussion about reflection and the purpose of this reflection.
2	Assign students to write about who they are in response to the reflection prompts (no word limit for their reflection).
3	Grade reflection assignment using a credit/no credit grading approach.
4	Thank students for participating in the reflection and debrief with students about the reflection.
5	Tailor in-class examples and activities around what is heard in the reflections. Based on what is heard in the reflections, provide students with resources.

In the Words of the Educator: Tips and Tricks

Think about and understand the objective of the reflection activity. In asking students to reflect, make sure you are clear on the objective of the reflection activity—what do you want students to get out of engaging in the reflection activity? Understanding the objective of the reflection activity can result in genuine care about how the answers to the reflection can inform and improve the class experience for students.

Acknowledge the reflections. Make sure to act on, acknowledge, respond to, or address the reflections in some way, so that students feel like their reflections are being heard.

Purposely craft the prompts to align with objectives. In providing students questions to respond to, make sure the questions align with the objectives of the reflection activity.

Think about the grading approach. Be aware that the grading approach can significantly impact how authentic the reflections are and how involved students become in the reflections. Avoid awarding points for each question because technically there is no “right answer” to a reflection, rather use a more holistic credit/not credit approach to grading—did they do the reflection assignment and do their answers look like they spent time and effort reflecting.

Be aware that students may question the importance of such an activity. Especially, first year students may want to immediately dig into real engineering work, so make sure to take time to emphasize the value and importance of this activity—both for each individual student, as well as for you as the educator.

Engage in reflection yourself. I believe it is important for each of us, as educators, to be open to answering these questions ourselves, and in doing so, to be transparent with students about our answers. By engaging in this activity, it can emphasize that communication is not just one-way, but an on-going dialectic conversation. Furthermore, if the students see the educator engaging in reflection, it can build a model for students to follow and a trusting relationship.

What was the inspiration for the reflection activity? Years ago, I read an interesting article online for k-12 education about checking in with students and providing them a space to do a self-assessment. This approach to teaching resonated with me and my teaching philosophy—caring, adaptive, checking in, etc. Initially it was an opportunity for me to get to know my students, but as I have continued to use the activity I see the potential value it has for students. I have been using this reflection activity with students for quite a while now and have continued to be pleased with it.