

Tamisha J. Lee
Instructional Technology Practicum
Reflection on Implementation
December 5, 2002

Intro:

Peter Kim, Rob Durham and I collaborated on a lesson we taught to a Lafayette High School Elective Engineering course of Juniors and Seniors. The class had 23 students, 21 were males and 2 were females. The classroom was fairly informal with a high level of student engagement (possibly due to the course being an elective). We found the students to be self-directed and engaged overall. Physical and emotional maturity levels were diverse. Curiously enough, the students who appeared less physically mature seemed to be more emotionally mature, or maybe they were just quieter. The football players in the course (and there were several) tried to hide their interest under a veneer of cool. I overheard several comments about being guinea pig students for us to practice on which made me laugh. I think we walked in hoping to wow the students with our polish and knowledge. They saw right through us!

Steve Tatum, the instructor, had finished a unit on buildings and had begun a unit on simple mechanical devices. This lesson was created in cooperation with Steve with these goals in mind. Steve was abundantly cooperative and open to whatever we proposed. He offered some guidelines but was not wedded to his own ideas and receptive to ideas we suggested.

Objectives or Understanding Goals:

After our introduction, Peter gave a short lecture on Leonardo da Vinci and his contributions to simple mechanics and physics. Then students were directed to a website I created which then pointed them to several activities on a da Vinci site. Students then paired with a partner and sent off to explore a chosen e-tutorial on different mechanical elements and machines. The students were given a worksheet to draw the various components that enabled their machine to function. Given the Leonardo review and the set of virtual tutorials, we wanted the students to be able to identify the mechanical elements that cause common machines to function. The lecture, the Leonardo activities, the tutorials and the worksheet were completed on the first day. The second day, pairs were to present their findings and teach the class about the elements that made up their

machine. Following several presentations, classroom discussions identified other uses for that particular component.

Materials:

- Website (<http://tjleex.people.wm.edu/engineer.html>) which contained the activities;
- Worksheet (attached)
- Computers with Internet access
- LCD Projector

Assessment:

To demonstrate understanding, each student was required to complete a worksheet (attached) breaking down the complex machines into their simpler component parts. The worksheet asked students to draw three elements and describe how those elements work within the larger, more complex machine. The final drawing was of the larger, more complex machine and explain how it functioned. An extra credit question asked students to apply their knowledge and think about other applications where this component might be used.

Student pairs were also assessed on their presentation of their tutorials. By being able to coherently explain how their machine functions to the rest of the class demonstrated a deeper level of understanding.

Observations, Findings, Reflections:

I think this lesson went amazingly smoothly and without much incident. Improvements would be centered on timing. The second day was a bit long and by the end of the block, we were all a bit bored of hearing the presentations. An hour and a half of presentations is enough to make anyone a bit antsy. Early on in the day, it became clear that the presentations would run a bit short and we would be left with 20 minutes of unscheduled time. Thankfully, Steve jumped in, veteran teacher that he is, and fostered lengthier classroom discussion and instruction on how the various mechanical elements

were used in different ways that we run across every day. That application portion was beyond my limited social science abilities.

Steve was pleased with the outcome and believed he would use the lesson again in the future, which speaks well of it, I think. He noted that students were on task for the most part during the first day. Also on that first day, some students were done more quickly than others, but overall, timing fell within an acceptable range. No one did not have time to finish up. I was a bit worried that the lesson was a bit too simple for the students. Being a dyed-in-the-wool humanities nut, understanding what is an appropriate level of difficulty for a high school engineering class was a challenge for me.