1. SLO: REFLECTIVE PRACTICE

Class: SED 695B
Professor: Norm Herr
Assignment: Advanced Laboratory Curriculum Development

The Advanced Laboratory Curriculum Development project provided an opportunity to critically assess my subject knowledge, my pedagogical content knowledge, and my pedagogical skills. The project consisted of five major activities: (1) a science demonstration, (2) a longitudinal study, (3) the development of a science kit, (4) a curriculum plan for a field trip, and (5) an activity for a discrepant event. Although all of the activities required that I examine my subject knowledge the field trip activity presented me with the opportunity to explore an area (both in knowledge and location) with which I was unfamiliar. I chose the Japanese Gardens and Tillman Water Reclamation Plant. Here I was able to explore a variety of botanical exhibits as well as the aesthetics of Japanese gardening. The Tillman Water Reclamation Plant introduced to me the water ecology of the San Fernando Valley and how these issues can be addressed in an eco-friendly manner.

The Discrepant Event activity allowed me to examine my pedagogical content knowledge. By focusing on and understanding student misconceptions and then addressing them by means of a discrepant event I learned that this is a particularly effective pedagogical device. The discrepant event I chose was the demonstration of an endothermic reactions. Students know that these reactions take place, but they rarely if ever, have the opportunity to visualize one. Hence, they begin to think that most
reactions are exothermic. The discrepant event was an excellent pedagogical device to employ to address this misconception.

The science demonstration, longitudinal study, and the development of a science kit all provided opportunities to develop my pedagogical skills. The Leyden Jar demonstration required that I explain and demonstrate the principle of the separation of charge, capacitance, electromagnetic induction, and the flow of electrons (discharge); each one of these principles could be readily demonstrated by the Leyden jar. The Longitudinal study required that I reflect on what would be the best pedagogical approach to facilitate the visualization of a reaction over time (kinetics). The development of the Science Kit was provided as a practical and cost effective activity that I can do in my class, but demanded that I consider the pedagogical requirements of the topic being addressed (solubility rules and the formation of precipitates).

All of the activities this project addressed I have begun to use in my science classes. And because Dr. Herr had us develop them into web resources they are accessible to my students so they can refer to them prior to doing the activity which allows them to reflect ahead of time on the activities we’ll be doing in class.