Everyday Genetic Engineering - Reflection

Instructor A
I think the genetic engineering lesson was generally a success. I was able to show the students that genetic engineering has an impact on their lives and get them interested in genetics in general by extracting their DNA. The fact that some of the students wanted to take home their DNA made me think they were excited about the activity.

The “Genetics is Right” warm-up definitely got their attention. The students immediately perked-up and began to participate. It was recommended that if done again I could include some of the food the students frequently eat such as different types of chips. The students really enjoyed the “game” format of the activity, so I might think about incorporating this format into future lessons.

Doing the DNA extraction experiment as a whole class seemed to work okay. At times it was difficult to get everyone’s attention, but I did not feel comfortable just letting them do it by themselves. I think that explaining to them how to use the pipette helped, but perhaps we could have a cup of water available for them to practice using the pipette. Just about all of the students performed the experiment successfully and were able to see their DNA. This indicated to me that the whole class, step-by-step approach was effective. Many of the students did not like the idea of “spitting” in class, I think because spitting is kind of personal and they didn’t like doing it in front of their peers.

I think I could have done a better job of wrapping-up the activity. Some of the students finished the questions faster than others and it’s always difficult to keep those who have finished quiet. With better discipline by the teacher, it would have been easier to get everyone back together at the end. Also, I wanted the students to work on the last few questions independently.

As for changes I would make, next time I would make sure to get graduated pipettes so that the students would be able to measure the solutions appropriately. This would also reinforce their measurement abilities. It might also be possible to incorporate the making of the solutions (salt water, soap solution), giving them practice in measuring.

Although I tried to emphasize writing in this activity, the students were frustrated with the writing and indicated in the feedback that they did not like all the writing this activity required. Some of the students almost refused to put their thoughts, knowledge, etc. down on paper. Also, they did not want to think about a question, especially a question about something we hadn’t just talked about. Some of the questions required them to reflect on content covered earlier in the class (weeks or months earlier) and many of them had difficulty with these questions. I think the students just need more integration of the content areas, reinforcing previously learned concepts. I know these issues are not unique to my lesson, but perhaps in my next lesson I will incorporate an assessment piece that does not require them to write (although they need the writing practice), but would allow them to express themselves in some other form (not sure what that might be?).

Another option would be to make this into a two day activity, where during the second day the students use the computer lab and actually write their own lab report. Using my recommendations, their books, the internet, or other resources they could produce something
using their own words. I’m not sure if this would result in a better product since the students seem to have a lot of difficulty writing, but allowing them more time and resources may help.

**Instructor B**

The opener used for this activity involved a skit based upon “The Price is Right” with Bob Barker and there is no doubt in my mind that this set up the class for a great lesson. This allowed the class to be involved all together and to learn about what they thought they believed genetic engineering meant and what it really meant. Also using items which all the students know and have most likely used/eaten at some point really gave it a sense of why this would affect them and their lives as well, so this was also a great addition to the lesson.

The overall flow of the lesson was about as great as you can plan it I thought. Bethany kept the classes moving through the lesson so that no groups ran out of time at the end. I think that once again this lesson showed just how much easier classrooms could run on days like this where there is an activity going on if there would be more then one teacher in the classroom. After the first bell in Tom Hart’s room we each kind of had a good idea of where to assist in the room so that if at anytime anyone had a question we could be right there with a quick response. This also allowed some more time for each of us as teachers to ask some more investigational type questions to get the students to think more about what they are working on. Sometimes even a great lesson can be made even better by the right placement of certain questions throughout the exercise.

The students, overall, had some great feedback for the activity with the largest dislike being that they had to work with their own spit. I was thinking of ways to get around this and the one suggestion I could come up with is to have clean wipes or time for the students to wash their hands after they have gone through this section. In my mind though, I think that this was really made out to be a larger dislike then it really was because there were some people in every class expressing this very vocally and when the feedback forms came around this was the one thing that could stick in people’s minds that were unsure of anything else they disliked. This element, the spitting, should remain in the lesson though in my mind because it makes it more a “this is what MY DNA looks like” rather then the more general “this is what DNA looks.” Proof of this is that about 5-10 of the students actually took their test tubes home with them to show their parents what their own DNA looked like. As a teacher, I think that impacting a student enough that they wish to share what they did that day with their family is a huge remark to the lesson and the work that the teacher prepared.

The handout used for this lesson was very well organized and designed in a manner that we should actually try and have the students use it again to see if they get more comfortable with it and give a more complete write-up. Then maybe after enough of these we could see if the students could come up with a final product on their own just by using these others as examples to work from. The format of this handout was great in that it simulated an actually laboratory write-up with all the same components (hypothesis, observations, conclusion, etc.). The earlier the students get used to this, the easier this will come for them in a college laboratory. I also believe that the students did like the extra credit question option and it was here that we really did get some incredible responses which showed the potential for some of these students.