Description

The “Global Temperature Change in the 21st Century” was used in the majors introductory non-lab biology course. The purpose of this course was to introduce potential biology majors to the process of science and to understand that all the science information they read in their textbooks comes from people doing work and analyzing information. The class met for 90 minutes twice a week. I used the module near the beginning of the semester, week 4, and it was their first experience using Excel in my course. The module was done in class to help them with Excel and with class discussions of the results interspersed throughout the module. I modified the module slightly in terms of the information they were given.

Instructor Notes

The module took two 90 minute class periods and I included a take-home summative assignment at the end.

The students were given the introduction of the material on our course management website to read before coming to class. They needed to read through the material and answer the two questions at the end of the introduction to start thinking about how they would represent the data. When we met in class we talked about the four scenarios and climate forecasting. For about 15-20 minutes. I loaded the student excel data file to our course management site so they could download the file to their laptops and begin work. I split the students into pairs to work on one latitude per pair. There were seven pairs so they did seven latitudes and I did one additional latitude. We all opened the file together and I went through how the information was laid out. I showed them how to make a scatterplot in excel. Then in pairs they needed to make eight graphs for each latitude, four for the summer scenarios and four for the winter scenarios. It took close to 45 minutes for them to make four of the graphs with the regression lines. There were A LOT of questions, remember this was their first time with excel. In the future I will show them how to make the graph but also give them a handout so they have something to refer to. At the end of the first class most pairs had completed four of the eight graphs so I told them to complete the remaining four graphs before next class period.

In the second class period most students had not completed the last four graphs because they were still struggling, so I gave them time to work on the graphs. Once graphing was completed (~25 minutes) the students needed to write their R2 and slope values on the board. In groups they discussed anything they noticed about the data (differences by season, latitude, model scenario) for 10 minutes and then reported to the class. We did not have as much time to talk about this in class as I would have liked since we spend additional time on graphing. Next time I will assign a grade to completing the graphs before the second class period. The students copied down the R2 and slope values and emailed me their graphs so I could collate them into a file for the whole class to use for their assignment. I then assigned the writing assignment associated with the module. I made a few modifications to the assignment for clarity. The assignment was due one week later.