

COMPILATION: grading labs

Date: Thu, 15 Nov 2001

From: Robert Bogenrief <RBogenrief@STLUCIE.K12.FL.US>

As a new modeling physics teacher, I have been grading labs by selecting one of the group labs to grade as representative of the group. The students perceive this as unfair. I have told them that they are expected to work together and help one another in coming to a common understanding, but they should all be able to express this common understanding in their own words. They are given time in class to review each other's work before it is submitted. Some students see the validity of this point of view. Thanks for your help.

Date: Fri, 16 Nov 2001

From: Mark Hughes <MJHughes@HUGHESMARK.COM>

Re: Grading labs -- I posted a rubric for my students to let them know what I expect to see in a laboratory and how much each section is worth. It speeds up grading for me, and leaves no question as to what sections they should include and what should be in each section. There is little to be argued with a posted rubric. If you wish to grade just a single lab, try having them submit a group report. It will still allow the cooperative learning to take place, but should remove the perception of unfairness in your laboratories.

Date: Sat, 17 Nov 2001

From: mitchell johnson <mitchjohnson@EARTHLINK.NET>

Jamie Vesenka wrote:

"I like Robert's way of grading labs. If the lab is a group effort, then any person in the group should be able to explain the results - make it clear to the students that their weaker colleagues may need to become more involved and fluent with the appropriate models to describe what is going on for grading purposes."

I have them turn in one body of the lab which they all share the same grade, but individually turn in the personal conclusion part of the scoring rubric.

Date: Sat, 17 Nov 2001

From: Bob Baker <bob.baker@WORLDNET.ATT.NET>

Concerning grading labs, I like students to work cooperatively in groups but when it comes to grading I grade individual work. Therefore, on a lab, all students collect data together, analyze the data on the computer together, but submit their own individual lab report. I grade the labs during the whiteboarding presentation as students ask each other questions. To save time on grading, I focus on one element of each lab such as appropriate units, appropriate mathematical representation, appropriate procedure etc. and use a quick glance to make sure other elements of the lab write-up are present.

Date: Sun, 18 Nov 2001

From: Kim Freudenberg <gatorfreud@HOTMAIL.COM>

I wanted to respond to the lab grading discussion; I also grade labs as a group for 3 reasons; it's "real world" to have to share someone else's "grade", it makes all students work harder, and it takes too long to grade them all (I have about 140 students); I give each student a grading rubric while writing their conclusion, and I also give them some class time to check each other's work and make sure all parts of the lab are complete.

I grade a portion of every report (ex: someone's pre-lab info, someone's graphs, 1/2 of two people's conclusions) and combine for the group grade. When I do this, I find the scores very similar to each individual grade, had I graded them separately. For the first few labs, I ask each group when they turn in the reports if they are happy with their group's performance, and they also have a section in their report to evaluate their group's performance in every lab.

Date: Mon, 10 Dec 2001

From: Robert Bogenrief <RBogenrief@STLUCIE.K12.FL.US>

I am thankful for the many comments to my questions about ... "grading one lab out of a group."

There is a statement in the materials I have on the modeling cycle that I would like clarified. It is found at http://modeling.la.asu.edu/modeling/mod_cycle.htm on page 3 of "Modeling Cycle":

While each student must prepare and submit a lab notebook, most of the work is done in class in their cooperative study groups. Grading is done by selecting one report at random from each group and selecting different members of the group to defend different aspects of the report. This induces students, during the preparation of reports by the groups, to ensure that every member of the group understands all aspects of the model that they have developed, thus instilling a sense of shared responsibility for the knowledge. This concludes Stage I.

1. Was the original intent in this approach that the defense be done orally? It sounds like it was since the students must refer to the same report.

2. How does this approach relate to using the Physics Laboratory Write-up Checklist and Writing the Physics Lab Report? Both of these come on the materials provided during the training this past summer. The method described by Kim Freudenberg, dated 18 Nov 2001(found in next day's listserve) seems to be closest to what is described above. She, however, grades different aspects from different reports.

3. What evidence is there that this approach best advances the goals of modeling physics?

I started grading one out of a group because that was the method that was presented in my training. The method made sense as a way of putting students in a situation where they had to help one another understand all parts of the model. I turned to the list serve for help when many students still perceived the approach as unfair despite my best efforts to give a rationale for the approach. Many good and helpful suggestions were made, but it was surprising and dismaying to find that the respondents used such a variety of ways to grade labs. It raises the question why a certain approach is presented in the materials as the way to do modeling physics when there are so many differences among its practitioners.

Date: Wed, 12 Dec 2001

From: Larry Dukerich <dukerich@ASU.EDU>

In response to Robert Bogenreif ,

I feel the need to emphasize that we need to distinguish between the basic tenets of Modeling, of which there are very few, and recommendations made by workshop leaders and participants during the discussions that always arise about best practice. When I first ran a Modeling workshop (Summer 95), Cooperative Learning had not yet fallen out of favor in my school district. One key aspect of Cooperative Learning is Positive Interdependence (the other is Individual Accountability). My colleagues and I found that by grading one lab report out of a group, we forced the group to review one another's work prior to turning in the reports and they essentially caught many of the errors I would have had to mark off for when students did reports in isolation. Making the students responsible (in part) for their teammates helped to cultivate a sense of community in the classroom that we valued.

Here are some other advantages to employing such a system:

1. I was able to get reports back to students much more rapidly, so the feedback was more meaningful.
2. When I could take the time to do this work in class (while the rest were working on a worksheet), the students in a group and I could have a brief conversation in which much more information could be exchanged than by writing comments on the report.
3. I believe that grading 100+ copies of the same report is a mind-numbing experience - probably responsible for killing more brain cells than alcohol.

Of course there were problems. Students who flat out abused the system or let their teammates down could be banished from the group until they corrected the error of their ways and asked to be re-admitted. In such cases, I would simply select the next group member's report to grade.

However, the powers that be in my school district issued the edict: Thou Shalt Not Use Group Grades, so I'm back to grading individual reports. The lab report checklist helps to make the process a bit less painful, but I still find it difficult to:

- a) read the reports and make meaningful comments,
- b) get them done in a timely manner, and
- c) have a life.

I think that the point needs to be made again and again is that "There is no silver bullet." As good as Modeling Instruction is, it does not solve every problem in the classroom. Practicing teachers have to find strategies that best fit their style of teaching and don't get them in trouble. What works for one person at one point in time may not (will not) work for everyone. That's why the discussions are so interesting.