

Douglass Houghton Workshop, Section 1, Tue 4/18/2017
“Worksheet” To Infinity, And Beyond!

In this, our last class, I'd be grateful if you'd consider some non-math questions. They all come down to:

How can we improve DHSP?

Here are several categories. I hope each group will consider at least one category in depth.

1. **Brochure.** Take a look at the cover letter, brochure, and application that get mailed to DHSP prospects. The questions are:
 - (a) Are the brochure and cover letter honest?
 - (b) Will they give students a good idea whether DHSP is a good choice for them?
 - (c) What student quotes should we use this year? See <http://sites.lsa.umich.edu/dhsp/student-quotes/> and <http://sites.lsa.umich.edu/dhsp/more-quotes/> and <https://dhsp.math.lsa.umich.edu/cgi-bin/cosignd/registry/class.cgi>
 - (d) Can you think of a better essay question for the application, that might help distinguish who is a good fit for DHSP?
 - (e) The public DHSP website is <http://sites.lsa.umich.edu/dhsp/>. It underwent a major redesign not long ago. How could it be improved?
2. **Summer Recruiting.** I meet with a lot of students over the summer—a lot more than actually end up in DHSP. Attached find my talking points. Same questions as above:
 - (a) Are they honest?
 - (b) Will they give students a good idea whether DHSP is a good choice for them?
 - (c) What would be better left out, and what else should I say?
3. **Mechanics of the class.** Here are some things that needed to be decided once. Should the decisions be revisited?
 - (a) *Selecting groups.* In the fall, I dictated groups until everyone had been in a group with everyone else. Then we used a pseudo-random method. Was this a good choice? Would you have liked more or less freedom in picking your groupmates? How could we speed up the process?
 - (b) *Control.* One of the categories on which instructors are rated is how much control they have over the classroom. I never want to have too much control, because I want you to own the experience. Also, I'd always rather listen to you than talk. Is this a good approach? Were there times when you wished I would exert more control?

4. **Review Sheets.** This year we made review sheets before each exam, and they were posted on the web, along with blank sheets.

- (a) How can we improve that system, so that it is more helpful in studying for exams?
- (b) How else can we collectively, as a group, support each other on exams?

5. **Problem choice.** We do a lot of different types of problems in DHSP, and I struggle a lot with finding the right mix. Major categories include:

- (a) Problems which use the techniques of 115/116, but go beyond those classes, and climax in some beautiful result (e.g. bubbles, sound synthesizer, hanging chain).
- (b) Non-calculus math problems (e.g. probability).
- (c) Problems which show how calculus can be applied in science (e.g., populations).
- (d) Puzzles (e.g. cake, record player).
- (e) Old exam problems, and others straight from 115/116.

The question is, was the mix a good one? Can you suggest other categories?

6. **Alternatives to worksheets.** Some things we could do/have done occasionally, for a break from the worksheet routine:

- (a) *Guest speakers.* (Suggest topics.)
- (b) *Exam review.* (Should the review sessions have more structure?)
- (c) *Jeopardy.* (Is once per semester the right amount?)
- (d) *Interactive lecture by me about related topics.* (Boring?)

Did we break the routine not often enough, or too often? Other suggestions?

7. **Mentoring.** We have DHSP alumni in all four years at UM, plus a number of college graduates. I am fortunate to know all of them (except the first year). We used that resource more than ever before this year, with the fall dinner, 8 alumni panels, and 38 interviews. A total of 69(!) alumni participated in at least one of those, and quite a few more volunteered. Questions:

- (a) Did those things work?
- (b) Thoughts on which alumni make good subjects?
- (c) How else could we involve alumni? More to the point, how would you like to be involved next year?
- (d) What if we had small dinners, based around particular majors. For instance, there could be an actuarial dinner and a pre-med dinner. How can we do that so it is useful and not lame?