Student Self-Evaluation Case Study

Group X
Aaron Rendahl, ...

School of Statistics
University of Minnesota

January 23, 2012

Recap of Situation

Want to test if student self-assessment is "as good as" faculty assessment for demonstrating that students have mastered certain skills.

- Both student and faculty grades (A–F) for 60 students in 4 categories
- Optional participation, about 60%
- Six faculty members, each evaluated ten students

Possible Issues with Study

- Students who participated are not a random sample
- Faculty members may be different
- Unclear what "as good as" means

Questions for Client

- How were students chosen?
- How were students assigned to faculty?
- Why treat faculty as "truth"?
- What does "as good as" mean?

Idea for Analysis: 2x2 table

Could use 2x2 tables for the analysis (each category separately), defining some grade as "satisfactory"

- Could test for independence, but that's probably not a good measure of equality
- Instead can compute specificity and sensitivity

Simpler to understand and interpret, but may need more sophistication.

Idea for Analysis: Logistic/Multinomial Model

Could use a logistic or multinomial model

- For each category separately, or together
- Possible random effect for faculty member

Can model lots of information (if it works) but is difficult to understand and interpret.

Ideas for Display

- Could use a 5x5 table showing how the two grades differ
- Could use a version of a parallel plot with line width corresponding to number