Incorporating External Videos

CONTEXT FOR USE: This flipped activity has been used in the first week of classes in both introductory and advanced undergraduate statistics courses. It has also been used after teaching two-sample t-tests within an introductory course.

LEARNING GOALS:
- Emphasize the importance of proper data collection.
- Explain how p-values can often provide misleading results.
- Discuss lurking variables and bias.
- Encourage students to recognize how statistics is relevant to their own lives.

DETAILED DESCRIPTION:
Before class students are asked to watch a video by Steve Wang:
http://www.youtube.com/watch?v=IRHa82vMPhU and answer three “quiz” questions.
1) What were the main points of the presentation?
2) How is this presentation relevant to today’s society?
3) Provide an argument for or against the main points of the presentation. References are helpful, but not required.

At the beginning of class, the instructor randomly selects two students to read their answers to the class. If quizzes are completed online through a course management system the instructor can randomly select two quizzes to read and keep the names anonymous. Students are asked to get into small groups evaluate the two quizzes for 5 – 10 minutes.

INSTRUCTOR NOTES:
In large classes (or when teaching several sections of a course), where quizzes are assigned about every other week, grading can be very time consuming. To address this issue, students are given two quiz scores; a completion score and an evaluation score. A course grader simply gives students 10 points for completing each quiz. If students complete all quizzes, they get a 100% completion score. Each week only a proportion (say 15-20%) of the quizzes may be randomly selected for evaluation. Students typically have one or two of their quizzes evaluated throughout the semester. Their final quiz score is weighted with 50% based upon their completion score and 50% on their evaluation score.

The quizzes randomly selected for evaluation are printed out (without names). These are distributed to small groups of students during class and these groups are asked to discuss and evaluate the printed quizzes.

RESOURCES:
Below are several additional videos that can be incorporated into an introductory course using the same format:
Do Placebos Work?
- http://www.cbsnews.com/video/watch/?id=7399362n&tag=contentBody:storyMediaBox

Amidst The Noise (Controversial Gun Control Data): http://www.youtube.com/watch?v=Ooa98FHuaU0
Hans Rosling: The Best Stats You’ve Ever Seen
http://www.ted.com/talks/hans_rosling_shows_the_best_stats_you_ve-ever_seen.html

Arthur Benjamin: A Formula for Changing Math Education
http://www.ted.com/talks/arthur_benjamin_s_formula_for_changing_math_education.html

Peter Donnelly: How Stats Fool Juries
http://www.ted.com/talks/peter_donnelly_shows_how_stats_fool_juries.html

Esther Duflo: Social Experiments to Fight Poverty
http://www.ted.com/talks/esther_duflo_social_experiments_to_fight_poverty.html

The last quiz assignment asks students to find one or two videos/papers for the instructor to use in future courses.