

## Statistics Project—Evaluation Evaluation

Students are frequently asked to evaluate their instructors. This project looks at evaluating the evaluation instrument.

Part of the evaluation of instructors at Southwestern College is a survey of students called the Student Evaluation (SE). The SE consists of 24 statements to which the students are asked to respond with their level of agreement or disagreement. For example "The instructor organizes the class well." Then the student being surveyed answers from one to five with one corresponding to "completely agree" and five being "completely disagree". In the end the instructor and his/her supervisor are presented with a summary of the results and an "Overall Average" (OA). All of the responses are equally weighted in the OA. The OA score is frequently used as the overall grade for the instructor.

One possible objection to the OA is that the questions are equally weighted but there is no evidence to indicate that they are equally important. This project tests the hypothesis that the questions are not equally important.

Design a survey that can be used equally well for students or teachers. The intent of the survey is to detect inequality of importance between questions in the SE. Pick four pairs of SE questions to analyze. Then your short survey can consist of four questions that rate the relative importance between each of the pairs. The analysis for this project should be unambiguous since the null hypothesis, i.e. there is no difference in importance, has a known binomial distribution with  $p = \frac{1}{2}$ . Thus being in the outlier 5% would indicate a "statistical significance" difference in importance. Please be particularly careful with your sampling design. Assume that your results will be presented to the Academic Senate President, the guardian of academic integrity at SWC, and the Faculty Union President, the guardian of instructor rights.

Extra credit:

Procure a copy of the equivalent student evaluation questions from another community college. Use your judgment to pick the most relevant question from the other college's survey that does not have an equivalent question on the SE. Compare the importance of that question with the least important (in your opinion) of the SE questions.

Report Writing Cautions: Be sure you thoroughly describe the experiment/study to the reader. Remember you are writing this report for the general reader not specifically for your teacher. Try to address any objections that the reader might bring up. Your report should be in a prose format. Be sure to use complete sentences, proper grammar, correct spelling, understandable statements, etc. Clarity of your concepts and presentation is important. If your English composition skills are not so good then make sure that someone in your group with good composition skills goes through your document carefully. If you have extensive tables and graphs consider putting them in an appendix.