Chapter 7: Undergraduate Discipline Spotlight

Every year the Assessment Almanac features the assessment practices of one chosen undergraduate department. This year the assessment methods of the Statistics department will be highlighted. Currently, Statistics is a department, but is not a major available to students, thus many of the typical university assessment practices are not applicable. However, since Basic Statistics is a required class for all students, and because it has become an incredibly popular minor and an important part of Truman as a whole, it is important to spotlight the assessment efforts that the Statistics department is currently making.

The department has clear student learning objectives. The primary learning objective is for students to be able to make data-driven decisions. The department would like to better its students' critical thinking skills, and for students to be better consumers of information. At the end of any statistics course, students should better be able to understand what reliable data looks like, and they should be able to generate reliable information based on data.

The Statistics department uses is a set of common questions on all STAT 190 final exams. While each professor writes their own questions, there are always four multiple choice questions over one topic that varies from semester to semester targeting a specific learning objective. The department then views these sets of multiple choice questions to see what percentage of students choose each answer. Around 80 to 90 percent of students tend to choose the correct answers. When a certain amount of students tend to get certain questions wrong, the department takes note of which field these questions fall under and makes sure that the next semester professors are making an extra effort to emphasize these areas.

In recent years there have been a number of new teaching methods and approaches introduced in individual course sections. Some faculty members would like to see the innovative methods added to the current curriculum and measure students' attitudes in response to the change. In Fall 2015, they are implementing a post-test, to gauge students' attitudes about the traditional material course. This will establish a baseline, and next semester they plan to have both a pre- and post-test to evaluate how the new methods influence students' attitudes.

The Center for Applied Statistics and Evaluation (CASE) is an important endeavor. While CASE is not technically part of the Statistics department, all Statistics faculty are involved in running it. CASE helps clients to analyze data and helps clients to answer any questions they may have regarding their specific data. Students are very involved both as providers and consumers of CASE service. Under the supervision of a faculty member, they will propose what kinds of questions to ask concerning the data and how to answer these questions. Students will further learn to implement, analyze, and write a report on the data. Through CASE, students are able to see a project from the beginning to the end. They will even be able to see the changes made based on the report they create. CASE also lets them work with and for the community which enhances their communication skills. In a way, CASE is like an undergraduate research experience, in that students are given the opportunity to learn the whole spectrum of statistics and sometimes these students can learn more here than in class through experience or through literature reviews. Some students go on to become senior consultants, an important leadership role which allows them to do more independent work. Work with CASE really helps to strengthen the resumé of any Statistics minor.

The Statistics program makes use of university wide data mostly for enrollment purposes. Enrollment data, which they keep track of in graphs, helps them decide STAT 190 classes and 300 level classes to hold by keeping track of how quickly or slowly each class has taken to fill in the past. The department also keeps track of how many first-year, sophomores, juniors, and seniors are taking the STAT 190 course because their goal is to not have too many seniors in this course in any given year. The faculty themselves actually play a large role in collecting this sort of data for the university, especially in regards to assessment.

Finally, faculty in the Statistics department also play a large role in the collection of university-wide assessment. CASE (and the relevant Stats faculty) often help analyze data from assessment instruments like the Truman Portfolio. Faculty have also been representatives to the Provost's Advisory Committee on Assessment in the recent past.