CASES, EXCEL, TABLEAU: DATA ANALYTICS FOR BUSINESS UNDERGRADUATES

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ADAPTING TO BUSINESS ANALYTICS

Although the processes defined as business analytics – "solutions used to build analysis models and simulations to create scenarios, understand realities and predict future states" according to industry research firm Gartner Group (n.d.) – have been practiced for many years, the term business analytics has recently increased in uptake. Among a sample of universities teaching business in the United States, only about 1% offered a major or concentration with the word "analytics" in 2011, but over 60% had such a program by 2020 (Mills et al., 2022). In line with the trend, the Eller College of Management at the University of Arizona has kept quantitative offerings for students up to date. All undergraduate students in business majors must take three quantitative courses, business calculus in the mathematics department and two courses offered by faculty in the business college.

During implementation and redefinition from 2017 to today, course staff have learned lessons and developed new ideas. Most ideas apply to the second course offered by the business college, which was retitled "Analytical Methods in Business" with an instructor-developed set of course notes (Hunter & McClintock, 2019). Efforts continue, particularly around allocation of topics between the first and second courses.

LESSONS AND IDEAS

As a short summary of key ideas:

- Employers asked that students apply Microsoft Excel to realistic data sets, as prior assignments had clean small-sample data. New assignments were developed with larger, messier data. Preparation commands including XLOOKUP and pivot tables are now demonstrated.
- Visualization tool Tableau became part of some assignments; students have guided creation of views, dashboards, and stories.
- The second course now ends with a group project including multivariate regression, Tableau story development, and video presentation. Time series models were removed to make space.
- Written interpretations of regression coefficients, hypothesis tests, and other results are mandatory parts of assignments. Showing Excel and numeric answers are no longer sufficient.
- Approximately 1100 students take the undergraduate courses each year. Consistent grading is a large challenge. Without a major program from which to draw students, finding trained and motivated graders is a huge challenge. There are helpful ideas, nevertheless.
- Although officially Windows is the supported operating system, about 60% of students have MacOS computers. Tableau has Desktop, Public, and web-based versions. Versions across operating systems can generally be supported, although not in all situations.
- Students have different priorities and frequently choose to use unpermitted assistance on assignments. The instructors catch and sanction 3% to 5% of students per semester. There are ideas to make checking for collusion either, along with ways to deal with violators.

REFERENCES
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