EVOLUTION OF THE UNDERGRADUATE MANAGEMENT SCIENCE COURSE

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ABSTRACT

In 2003, AACSB International approved a new set of standards for accreditation of business programs that include a requirement for coverage of statistical data analysis and management science. We discuss trends for OR/MS in undergraduate business curricula since the standards revision, including student and faculty perception of its relevance and increased use of Excel-based tools in other business disciplines.

Background

The Management Science (MS) course has seen a decline in popularity in business schools across the nation. In some cases, it was eliminated from the undergraduate business curriculum after AACSB dropped it as a required course in 1991 [3]. In an attempt to stave off extinction, MS professors incorporated Excel-based solution and analysis into their courses and reduced coverage of mathematical techniques such as the simplex method. This seemed to be a natural extension since Excel is widely used throughout the business world for processing quantitative data and developing analytical solutions. Fortunately, incorporation of spreadsheets into MS increased both the relevance and the popularity of the introductory MS course in business core curricula (see references in [2]).

When we first started using Excel in the undergraduate quantitative analysis course at our institution in the mid-1990s, it was the only course where business students were exposed to spreadsheets and learned basic spreadsheet modeling skills. Since then our business statistics courses has adopted Excel but coverage is restricted primarily to descriptive statistics, chart constructions, and probability calculations. Upstream faculty in finance, economics, and accounting has come to rely on these Excel skills in their students. Over the years, we have routinely heard back from students who used these skills in a variety of class projects and summer internships.

In April of 2003, the AACSB approved a new set of standards for accreditation of business programs. While there are no requirements in the current guidelines for any specific courses in the business core curriculum, "statistical data analysis and management science" was added to the required list of management-specific knowledge and skills areas [1]. This presented MS with a second opportunity to demonstrate its value and impact on organizational decision-making.

Current situation

In the last couple of years, we have noticed an increase of "pockets" of Excel-based analysis in a variety of lower-level business courses such as introductory accounting. In some respects, we are no longer viewed as the primary course where students learn spreadsheet skills. This is despite the fact that we teach a variety of Excel-based tools such as data tables, Solver, random-number generation, and regression. It appears that somewhere along the way we slid back to being the "quant" class again with some question as to whether we are relevant!

Our response is two-pronged: educate faculty from other business disciplines about the undergraduate MS course (and why it should continue to be required of all business majors) and evolve the course naturally

so that we are once again the course where students are learning essential spreadsheet and analytical skills not necessarily taught elsewhere (but used by other business disciplines).

One of our tasks is to update the language describing the learning objectives for the course. It was written in a form that is useful (and understandable) for the faculty teaching the course, detailing specific MS techniques and concepts as well as defining the scope of coverage. We are taking a meta-perspective of the course and restructuring the objectives into two levels – a set of broad objectives in business-friendly language and a second in-depth set of details in terms of topics covered. We have observed the increased popularity of "business analytics" in recent years and our investigation of this subject area has revealed a significant overlap with topics in our MS course. This has contributed to our acknowledgment of the need to frame the learning objectives for the MS course in terms of the business problems being addressed.

Our second task is to investigate where and how exactly the modeling skills taught in the MS course are used in upper-level business courses. It has been about seven years since we originally did this and, at that time, we asked the faculty in the College of Business for their "wish list". Needless to say, the list was long and it would have taken 2 semester-long courses to accommodate everyone's requests. In addition, there seems to have been a miscommunication in that we expected upper-level faculty would use the skill level the students received from our class and build on it while, in many cases, the faculty expected a higher-than-realistic skill set from a sophomore-level course. Compounding that was the fact there was potentially several semesters lag between our MS course and subsequent courses where the skills are utilized.

In our presentation, we will report on progress-to-date for these two tasks and discuss general trends for MS in undergraduate business curricula.

REFERENCES

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