A Framework for Teaching the Undergraduate Data Analytics Course

TREO Talk Paper

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Abstract

The explosive growth of data analytics has led to a large demand for analytical skills which is outstripping the supply of this skillset. Future growth in data analytics is expected to be enormous. Forbes reports that big data and business analytics software worldwide revenues will grow from nearly $122B in 2015 to more than $187B in 2019, an increase of over 50% over the five-year forecast period (Columbus, 2016). This increased demand for business professionals who understand data analytics itself leads to a complementary increase in demand for business school graduates who can use data analytics tools and apply data analytics in various situations (Turel & Kapoor, 2016). However, despite recent growth, academic programs in data analytics are far from meeting the increasing demand (LeClair, 2016).

Business schools across the world are responding to this challenge by offering graduate and undergraduate programs in data analytics. There is a growing body of literature covering the graduate level programs, but very little literature covers the undergraduate courses. The introduction to data analytics is the first course students usually take in order to understand the basics of this exploding field. The aim of this education paper is to contribute to the literature in the undergraduate data analytics curriculum and to help those teaching this course to undergraduate students with ideas. Specifically, I cover the basic topics, themes, and universal issues in teaching the undergraduate introduction to data analytics course. An over-arching framework was created after examining different introduction to data analytics courses at three different AACSB accredited schools.

This over-arching framework breaks down analytics into two major divisions – producer of data and consumer of data. Within the producer of data division, the course topics include gathering, cleaning, and analyzing data. Within the consumer of data division, the course topics include data visualizations and audience-focused reporting. Within each of these sub-divisions different technologies are discussed. For example, the pros and cons of cloud computing using Amazon Web Services and Microsoft's Azure are discussed. Other technologies that are discussed include R, Python, Tableau, and Pentaho to name a few.

In addition to the major divisions, other issues regarding teaching the introduction to data analytics course are discussed. These topics include selecting a textbook, teaching to a diverse set of student's technical skills, and balancing the right amount breadth versus depth of the course topics. These topics are examined at each of the three schools. This pedagogy study also includes a robust literature review, a summary of issues encountered by professors teaching this course, and lessons learned after several years of fine-tuning this course.

References

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LeClair, D. (2016). Big Data's Big Future in Business Education. in AACSB Blog.

Turel, O., & Kapoor, B. (2016). A Business Analytics Maturity Perspective on the Gap between Business Schools and Presumed Industry Needs. *Communications of the Association for Information Systems,* 39(6), 96-109.