

Teaching and Using Analytics in Management Education

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INTRODUCTION

Management education has entered a seminal period that is being driven by globalization, technology, and demographics. Calls for reform in both content delivery and outcomes continue to grow (Schoemaker, 2008; Kleiman, 2007). As a result, an increasing number of business school educators are now behind the movement to enact significant changes in the way management education, in general, and graduate management education, in particular, is delivered (Bruner, 2011; Danko, 2005). This trend is underscored by the rising number of online management programs among the top business schools (Grzeda, 2009). Additional trends include an increasing demand for fast track and limited residency programs, expanding peer school strategic alliances, and an escalating interest for program customization and flexibility. Naturally, as with any significant transition, there are a wide variety of challenges including risk mitigation, program consistency and faculty adoption.

Management education students, given the current business environment, need to develop technical analysis capabilities and problem solving skills to remain competitive in the globalized marketplace (Kao, 2011; Thomas, 2007). Analytics, which is receiving increased attention throughout industry and government, can be used to enhance management education in the following ways (Coghlan, 2010):

- Provide a conceptual setting for improving student managerial decision-making expertise,
- Assess student performance and identify appropriate additional learning resources, and
- Offer business school administrators the capability to improve operational efficiency and effectiveness.

Analytics is the science of discovering and communicating meaningful patterns in data and developing actionable plans (Cooper, 2012). Organizations of all shades and hues are facing increased challenges associated with the growing availability of large and complex data bases. Many successful companies have already developed a fact-based and data informed decision-making culture based on the Analytics paradigm (Klatt, 2011). The dramatic growth of data collection throughout academia follows the trends in business over the last two decades. Unlike business, however, academia's ability to process information in a timely way continues to lag. This is where the Analytics paradigm can also help. Generally speaking, Analytics can be divided into three broad categories: Descriptive, Predictive and Prescriptive. Descriptive Analytics is all about providing insights into what has already happened (e.g., student drop out rates). Predictive Analytics focuses on generating forecasts about the future (e.g., student enrollment trends and students at risk). Prescriptive Analytics builds on both descriptive and predictive Analytics to help identify solutions to specific problems and decision-making applications. As applied to academe this could include scholarship allocations and capacity sizing.

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The emerging field of visual Analytics is designed to process massive, heterogeneous, and dynamic volumes of information by integrating human judgment using visual representations and interaction techniques (Keim, 2008). Visual analysis software allows the user to not only represent data graphically, but to also interact with a variety of visual representations (Few, 2007). Dashboards, which represent the face of the Analytics paradigm, offer a visualization perspective in reporting results and recommendations. To thrive in the new competitive environment, businesses increasingly need graduates who possess not only excellent academic preparation, effective communication skills, and strong ethical principles, but also experience in addressing the challenges of managing data. This is where visual Analytics can play an important role.

Much education startup energy is going into lacking Analytics into the curriculum. There is a great momentum to use the kinds of tools that have been used well by other industries to improve processes in education (Steve Schoettler, 2012 Schoettler Conference).

The rapid growth of e-learning technologies, particularly mobile learning, has ushered in a new era in learning opportunities in management education. Mobile learning systems (MLS), in particular, offers the student both a customized and an integrated knowledge experience (Menkhoff, 2010). The Analytics paradigm combined with mobile learning provides a platform for both strengthening student decision-making capabilities and improving curriculum delivery. This chapter's primary contribution to the field of Analytics is outlining an approach for teaching and using Analytics in management education and identifying corresponding implementation strategies. This chapter is organized as follows 1) A review of the current trends in Analytics in management education; 2) An assessment of the role of Analytics in curriculum design; and 3) An agenda for future research.

Thirty years from now big university campuses will be relics! (Peter Drucker, 1967)

ANALYTICS IN MANAGEMENT EDUCATION

Analytics, within the context of management education, can be defined as the widespread use of analytical tools and systems to improve student decision-making skills and to enhance business school administrative operations. Identifying the “best” approach for teaching students and training professionals in analytical based decision-making lies at the heart of the Analytics movement. Typically in a graduate management setting upwards of two-thirds of the students do not have a business or scientific undergraduate background. This is where the Analytics paradigm can help. More specifically, Analytics based learning systems can be used to assist in the instruction of Analytics! The pedagogical issue at hand is orientation. The empirical data suggests that the learning focus should be on applying Analytics and not on drilling down into the mathematical structures (Hu, 2012). The learning goal should be to develop general analytic and quantitative problem-solving skills. The curriculum should be designed in such a way as to create an environment where the student becomes comfortable in using a wide variety of decision support tools.

Outsourcing providers have been offering their clients Analytics services for at least 15 years. But today the interest in Analytics is completely unprecedented. Earlier, clients only considered a few specialized functions were appropriate for the ‘quants’; today it’s all functions. Procurement, marketing and financial people– all want to talk about Analytics and how it can improve the performance of their functions. The time of the geek has come (Pankaj Kulshreshtha, Outsource Magazine, 2012).

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