Chapter 7
Teaching Data Analytics Using Natural Law as Integrative Framework

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ABSTRACT

Teaching and learning the multidisciplinary field of data analytics requires comfort with multiple domains of knowledge, each with its own assumptions, concepts, and skills. Ideally, such teaching will use an overarching framework that transcends and includes all the reference fields. Natural law provides such an all-encompassing framework for a stress-free and sustainable path to continuous learning. Teaching from natural law helps enhance the student's capacity for comprehension and integration of diverse knowledge and skills. This chapter presents seven key natural law principles, along with examples of their applications in teaching data analytics. It also presents V-theory of transcendence as way to connect with natural law within one's own consciousness.

INTRODUCTION

Data Analytics is the art and science of extracting novel and useful patterns from data to help make the business better. It is a multi-disciplinary field that includes integration of knowledge and skills from multiple reference fields such as business management, sociology, mathematics, statistics, and computer science, which all contribute to Data Analytics. Data Scientist was called the 'sexiest' job of this decade (Davenport & Patil, 2012). There is a great demand for Data Analytics education,

DOI: 10.4018/978-1-7998-5514-9.ch007

with a 6-fold increase in Data Analytics course offerings among AACSB-affiliated schools between 2011-16 (Mills, Chudoba, and Olsen 2016). Data Analytics requires the knowledge of scientific tools and techniques to gather, cleanse, organize, analyze, mine, and visualize data. Further, effective teaching of Data Analytics should align with the cognitive and behavioral styles of students (Saundage, et al. 2016). More schools are viewing offering data analytics courses as a potentially disruptive program to leapfrog the competition (Wymbs, 2016). Pedersen, Nygaard and Pedersen (2010) also recognize the integration challenge and call for a necessary transition from input-based to output-based curricula and help develop the right competencies among students. Carugati et al (2014) similarly recognize that teaching executives can be a very challenging task because of their previous experiences, variation in their previous education, and multiplicity of motivations for pursuing a continuous education. McBride and Hackney (2003) call out the need for developing integrative principles for teaching Information Systems, and suggest principles, such as to:

- Establish a series of generic frameworks or patterns in your teaching that can be applied to changing technologies and business practices. Derive these bottom-up from observing practice and top-down, drawing on theories across disciplines;
- Educate your students in critical thinking. Always apply critical thinking to the selection of topics and sources;
- Always seek to provide a learning environment where the student comes to her own -understanding and generates her ownership of principles and practices for herself.

We completely agree that generic frameworks must transcend and support changing technologies and reference disciplines to be able to answer this challenge. Such generic frameworks should be strong and broad enough to accommodate Data Analytics and other disciplines that the future Data Analyst is expected to learn to stay effective in her work. The integrative framework should be broader than the exponentially growing Data Analytics field. We agree that critical thinking is a useful way to free oneself from any particular beliefs and practices from reference disciplines, that may prove limiting for interdisciplinary work. We also agree that students should become active learners and take full ownership of their own principles and practices. Providing a generative learning environment will involve developing the creative capacity of the students.