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Main article

Infusing data analytics into the accounting curriculum: A framework and insights from faculty☆

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ABSTRACT

Understanding how to use data to formulate and solve business problems provides an opportunity for the accounting professional to become a forward thinking strategic partner in the organization. The challenge for accountants is to develop the skills needed to extract value from data through advanced analytics. The challenge for accounting academic departments is determining the data analytic skills and tools that are relevant to the accounting profession and how and when to incorporate those topics into an already full curriculum. This is especially true for accounting programs that have separate AACSB accreditation, given that Accreditation Standard A7 requires universities with separate accounting accreditation to include content and learning objectives associated with data analytics and information technology skills. To address the challenges, we propose three data analytic implementation methods: a focused approach, integrated approach, and a hybrid approach. We present the results of a broad exploratory survey of accounting faculty regarding which data analytic skills and tools should be taught and how, when and where these topics should be provided to accounting students. We find support for a hybrid approach; whereby accounting programs include both a stand-alone course emphasizing data analytic competencies and accounting courses with data analytic competencies ingrained. We conclude with a discussion of the support for and limitations of each of our proposed implementation methods.

1. Introduction

Few would argue that data analytics is a “hot topic” in both business and academia. Davenport and Kim (2013) define data analytics as the “extensive and systematic use of data, statistical and quantitative analysis, exploratory and predictive analysis, and fact-based management to drive business decisions and actions” (p. 3). Routinely, businesses collect and use data to make decisions regarding consumer product offerings, advertising, and performance. It is no surprise that there is an increasing need for graduates who have data analysis skills, which has led to a call for more data analysis instruction in business degree programs. This paper presents the results from a survey of accounting faculty regarding data analytics instruction in the accounting curriculum. Demands from both the business community and the Association to Advance Collegiate Schools of Business (AACSB) have created an urgency for academics to integrate data analytics instruction into an already full curriculum. This is especially true for accounting programs that have separate AACSB accreditation, given that Accreditation Standard A7: Information Technology Skills and Knowledge for

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Accounting Graduates requires universities with separate accounting accreditation to include content and learning objectives associated with data analytics and information technology skills in its curriculum. Specifically, the standard states:

> Consistent with mission, expected outcomes, and supporting strategies, accounting degree programs include learning experiences that develop skills and knowledge related to the integration of information technology in accounting and business. Included in these learning experiences is the development of skills and knowledge related to data creation, data sharing, data analytics, data mining, data reporting, and storage within and across organizations.
>
> AACSB, 2013

Many AACSB-accredited universities with separate accounting accreditation are making the transition from previous AACSB standards to the updated 2013 standards, which require faculty to implement data analytics into the accounting curriculum.[1] The opportunities for using data to make decisions are not specifically identified or defined in the A7 standard, leaving many unanswered questions regarding the needed or necessary skill sets that graduates must embody. Confusion as to what exactly data analytics is, how data analytics can apply to accounting, what courses can or should include data analytics, and what skills and tools should be taught are just a few of the issues facing accounting departments that have a plethora of options to infuse data analytic instruction into the curriculum.

The primary goal of this study is to provide guidance and information regarding implementation of data analytics instruction into the accounting curriculum. Our survey was designed to be both descriptive and prescriptive. Specifically, we developed questions to provide insight into how accounting faculty are approaching data analytics instruction and to elicit faculty opinions regarding what, how, where, and when data analytics should be taught. In addition to our recommendation alignment with the program's mission, we offer three approaches that accounting programs may consider when evaluating the implementation of data analytics: focused approach, integrated approach, or a combination of the two approaches (hybrid approach). In a focused approach the foundation of data analytics skills is provided in a stand-alone course. An integrated approach infuses data analytic content into existing accounting courses. A hybrid approach includes both a stand-alone data course and accounting courses with specific data analytic skills infused. Ultimately, we provide insight regarding the pros and cons of a focused approach, integrated approach, and hybrid approach to implementing data analytics into the accounting curriculum.

This paper contributes to academic accounting education literature by providing insights regarding how data analytics could be implemented into the accounting curriculum. Such information will help accounting program administration by providing a synthesis of the profession's view of needed data analytics skills and accounting faculty's perceptions regarding incorporation of those skills in the accounting curriculum.

We find support for a hybrid approach to implementing data analytic competencies into the accounting curriculum. Faculty respondents to our survey indicate both the need for a stand-alone course dedicated to data analytic skills and tools and integration of data analytic competencies in existing accounting courses. Further, the majority of faculty report that data analytic competencies should be included in accounting information systems and audit and assurance courses. When considering the specific data analytic skills and tools that are of primary importance to accounting curriculum, faculty consider developing students' mindset as the most important. Moreover, faculty indicate that Excel is the most important software tool for providing data analytics instruction. Faculty respondents to our survey specify methods that should be used to provide data analytic instruction include case studies and hands-on projects are methods of providing instruction that should be used. Finally, faculty indicate that data analytics instruction should be taught in upper-level or graduate coursework.

The remainder of the paper is organized as follows. First, we describe the focused, integrated and hybrid approaches; second, we examine literature from academic and practice journals to develop four research questions; third, we describe our survey methodology used to elicit faculty's perceptions; fourth we present the results of our survey. Fifth, we conclude with discussion, recommendations and conclusions.

2. Background and proposed methods

Accounting graduates must have the skill set needed to extract value from big data through advanced analytics (PwC, 2015). The challenge for accounting academics is determining what specific skills are necessary and how to incorporate instruction of these skills into the accounting curriculum. Academic pedagogical literature provides guidance for accounting programs regarding best practices for accounting curricula. For example, Lawson's et al. (2014) competency integration model for accounting curricula proposes an emphasis in three areas: foundational competencies, broad management competencies, and accounting competencies. It has been used to support an integrative approach to incorporating Big Data, technology, and information systems into accounting curricula (Sledgianowski, Gomaa, & Tan, 2017). However, pedagogical literature regarding implementation of other topics (i.e. ethical-decision making) into the accounting curriculum suggests that either a stand-alone course or content integration into existing courses is acceptable (Blanthorne, Kovar, & Fisher, 2007). We extend this approach and frame our research questions to provide guidance on a focused approach, integrative approach, or hybrid approach to incorporating data analytics into the accounting curriculum.

When considering methodology for adopting data analytics into the curriculum, administrators should consider their

[1] It is also important to note that although the A7 standard has created a sense of urgency in accounting programs that are separately accredited by the AACSB, the importance of incorporating more data analytics into the accounting curriculum has been largely driven by market demands for greater expertise. Therefore, the need for more data-literate accounting graduates is applicable to all accounting programs regardless of accreditation requirements.