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### Introduction to the Special Issue: The Education Science of Delivering Analytics Education

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## Editorial

# Introduction to the Special Issue: The Education Science of Delivering Analytics Education


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INFORMS is the prominent organization of analytics professionals and academics and publisher of multiple highly rated journals. *INFORMS Transactions on Education (ITE)* is the INFORMS journal focused on advancing and disseminating approaches, cases, and research that lead to instructional success. *ITE*'s mission is to become the flagship journal of education science related to the core domains of INFORMS: management science, operations research, operations management, and analytics. This special issue highlights a broadening in the scope of the journal from mainly providing instructor resources (cases and games) to a more research-oriented journal that publishes research articles related to education and learning.

This special issue consists of four original research articles.

In "Teaching Systems Thinking in Higher Education," Elsawah, Ho, and Ryan show that systems thinking skills can be promoted effectively through the delivery of a combination of systems thinking methods and concepts. Their results are based on quantitative as well as qualitative analysis of data gathered for two assessment activities in a core master and postgraduate course on systems thinking.

Getchell and Pachamanova propose a general framework for integrating writing skills with discipline-specific learning in "Writing to Learn: A Framework for Structuring Writing Assignments to Support Analytics Course Learning Goals." Besides improved learning, the application of the framework to a particular data science course also suggests an additional positive

effect in student engagement and group work contributions.

In "Academic Motivation in Introductory Business Analytics Courses: A Bayesian Approach," Vaziri, Vaziri, Novoa, and Torabi study the relationship between students' academic motivation and their performance in two introductory business analytics courses. The motivation is assessed through the MUSIC model that consists of five components: empowerment, usefulness, success, interest, and caring. Performance is measured by the students' effort, final grade, course rating, and instructor rating. In both courses, it was found that the interest of students and success positively impact the course rating. For instructor rating, the interest of students and caring are important factors, whereas success has little or no impact.

Finally, in "Interactive Computing for Accelerated Learning in Computation and Data Science," Alderson shows the added value of interactive computing exercises through web browser-based Jupyter notebooks for accelerated learning in computing and data science. Quantitative evidence of improvement in learning outcomes is provided in three forms: student course evaluations, a direct survey, and unsolicited feedback from senior students and recent graduates.

I would like to thank the authors as well as reviewers for all their efforts in contributing to this special issue. I hope that the shared insights will lead to better analytics teaching practice and that the studies provide inspiration to researchers worldwide for new research-focused contributions to *INFORMS Transactions on Education*.