FROM THE EDITOR

Flatlands & Frontiers

"Escaping this flatland is the essential task of envisioning information – for all the interesting worlds (physical, biologi-cal, imaginary, human) that we seek to understand are inevitably and happily multivariate in nature. Not flatlands."

Edward R. Tufte, *Envisioning Information,* 1990

*T*he world of higher education is multivariate. It is a multidimensional and complex realm we seek to further understand. And yet, the world portrayed in our assessments often focuses on a single dimension. They are flatlands. These reproductions are crafted using data, rubrics, psychometrics, standards, and "cycles." However, while we were yet producing portraits of the higher education landscape, a new data type emerged that was not one-dimensional. Someone named it with an adjective – big.

The publication of this issue makes no claim that big data or learning analytics are a panacea for the multivariate world of higher education. Persons should not pretend that big data will solve what policy analysts call "wicked problems," those utterly complex educational and social ills. Rather, this issue seeks to begin a collective debate about the extent to which big data and learning analytics might play a role in higher education assessment. As such, the works in this issue commence with the essential tasks necessary for interrogating an emerging body of knowledge: they examine assumptions, operationalize terms, suggest new metrics, compare educational sectors, consider implications for policy, and scrutinize professional ethics. I have previously argued in this column that in order to move beyond the flatlands of assessment the disciplines must be converged within the assessment discourse. This special issue is no different - it seeks to converge the learning analytics and assessment literatures.

The pieces in this issue have been arranged to provide a natural progression on the topic for the reader. The volume opens with an article by Candace Thille et al. that provides a definition of big data and examines how assessment processes with large-scale data will be different from those without it. Emphasizing a "wicked" problem in a complex system, Leah Macfadyen, Shane Dawson, Abelardo Pardo & Dragan Gašević offer a policy framework for navigating the tension between assessment-for-accountability and assessment-for-learning. Matters pertaining to various analytics are then given attention beginning with Una-May O'Reilly & Kalyan Veeramachaneni who describe an agenda for developing technology that enables MOOC analytics. Ryan Baker & Albert Corbett then consider how an emphasis on robust learning might advance the focus of assessments from single to multiple domains. Following this, Maarten de Laat & Fleur Prinsen introduce social learning analytics as an instrument in formative assessment practices. The final two articles offer innovative systems presently being used in organizations to strengthen student success through persistence and retention. In the first, Tristan Denley highlights how closing the information gap impacts the educational achievement gap for low income and minority students. Mark Milliron, Laura Malcolm & David Kil use insight and action analytics to produce predictive flow models of student progression and completion across three diverse organizations.

Book reviews for this volume were strategically chosen to provide readers with a sample of present works on big data. Aiden & Michel's accessible work based on the Google Ngram Viewer, *Uncharted: Big data as a lens on human culture* is reviewed by Carolyn Penstein Rose. Fabio Rojas then engages Lane's *Building a Smarter University: Big data, innovation, and analytics*, suggesting this may be an important volume for university administrators. Finally, drawing parallels from the K-12 sector, Karly Sarita Ford reviews Piety's book *Assessing the Educational Data Movement*. The end of the issue asks readers to give consideration to the myriad subjects of big data. Here, Mitchell Stevens poignantly ask us to consider the legal, political and ethical questions of big data collection. He highlights the heroic efforts of the scholars and scientists at the Asilomar Convention, which yielded six principles to inform the navigation of this uncertain terrain.

While the flatlands offer a rich and fertile soil, I am not content simply looking afar at the majesty of the mountains. The teacher that resides deep within me wants to use learning analytics to venture beyond the plains, to scale the summit of the multivariate. I want to reside on the frontier of the discipline, knowing that I will not meet my fate in the infinite cycle of assessment. As you engage the pages herein, give consideration as to how the frontiers of the discipline may continually be explored.[1]

Regards,

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[1] The framing of this column was influenced by the scholarship of Edward R. Tufte (1990) and Emma Uprichard (2014).