Book Review of Niall Sclater's *Learning Analytics Explained* (2017, Routledge)
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The field of learning analytics in higher education becomes more and more complex with each passing day – just like the algorithms many employ in an effort to identify and analyze data that can help optimize students' learning. There have been webinars, articles, white papers, and books written in an effort to parse out what learning analytics is and is not, how it does and does not work, or what should or should not be considered when deploying and employing tools. The authors and presenters of these works have done well in their efforts, but often leave the uninitiated or uninformed reader with more questions and confusion than answers or sense-making. Niall Sclater's *Learning Analytics Explained* does not create this confusion, but instead provides a breath of fresh air for the literature in this field.

Sclater wrote this volume episodically; while the book contains 25 separate chapters, none is longer than 17 pages, and most hover around 10-12 pages in length. This makes the various concepts discussed digestible to even the uninformed reader, yet insightful enough for the person who has made learning analytics their life's work. Furthermore, each chapter is punctuated by case studies illustrating the practices that have made learning analytics successful and the perils that have created issues for some institutions. This approach – putting seemingly promising, concerning, and foundational practices together in one space – creates a necessary addition to the field of learning analytics. Often, many learning analytics projects are developed and deployed without broad consultation with stakeholders or other existing projects, almost as if each project somehow contained highly secretive data or processes. Sclater, whether knowingly or not, deftly demonstrates the need to consider multiple perspectives and programs when moving initiatives forward, and does so in a way that any institution of higher education anywhere in the world can benefit from the analyses. At the same time that he denotes what made various efforts successful, he also shines a light on areas that could be improved upon, need further consideration, or simply did not work at all.

The book begins with a brief introduction of learning analytics, placing the term in a context, and, as chapter 1 is titled, describes the evolution of the field. Section II, Applications, dives into four specific realms of learning analytics: early warning systems, course recommending systems, adaptive learning approaches, and ways to use analytics to influence curriculum design. Further, Section II, in particular chapter 6 – Curriculum Design, underscores the need for the application of pedagogical theory to learning analytics, which is important, because, after all, learning analytics are about learning (Gašević, Dawson, & Siemens, 2015). In a field that has evolved around the theory associated with the *techniques* employed, it is nice to see a comprehensive volume like this acknowledge the need for the use of learning theory as well.

Section III dovetails nicely with Section II, and focuses on the logistics associated with the adoption, application, and ongoing use of learning analytics. Here, Sclater starts with a brief conversation about data, and the varying types of data that can be or are employed in these initiatives. He then moves into the realm of metrics and predictive modeling, explaining how various data points can be used to predict an outcome and to demonstrate that various benchmarks or milestones have been achieved. The remaining three chapters in this section are devoted to the ways in which the data and subsequently predicted outcomes can be presented to users. Specifically, Sclater explores the emerging realm of data visualization, how feedback can and should be provided, and what student-facing systems can entail. Here, the relationship between data and those they represent becomes clear as an argument for using learning analytics to drive specific behaviors is made.

While the first three sections of the book are interesting and provide readers with a solid foundation for participating in conversations about learning analytics on their campuses, Sections IV and V are where the real discussion on learning analytics begins. Sclater moves the reader from a realm of what learning analytics *is* and begins to explore its anatomy, examining *how* accomplishments and findings have been achieved. Furthermore, he strays into realms not often discussed in the literature:

the need for standards and interoperability in the field. The paucity of research in this area is demonstrated by the fact that the vast majority of the citations here are attributed to Cooper and his colleagues. The inclusion of standards alongside of various technologies in the field and the architecture behind them is, in my mind, a step forward for the field. Organizations like IMS Global and the Predictive Analytics Reporting (PAR) Framework have been working toward this end for several years, and have made some headway; having their work highlighted here, as well as related to the ways in which learning analytics is evolving, can only benefit the field at large.

In Section V, concepts such as readiness and planning are presented in ways that demonstrate both their utility and importance for institutions looking to implement an analytics solution. The last three chapters in this section, though, are among the longest and most important in the book, as they focus on the ethical use of learning analytics, the need for transparency, the challenge of consent for use of data, and the overarching concept of privacy and data protection. Because these three chapters provide a depth of analysis of these areas, the reader is left with very specific concerns to consider as they examine their own current or potential use of learning analytics. While solutions to these concerns are not provided, the discussion allows for readers to have informed conversations about how these areas can be addressed in the context of their individual institutions. The global approach, especially with regard to the discussion surrounding consent for obtaining and using data, also reminds the reader that while issues may be universal, the laws governing a given institution mean multiple perspectives are necessary when trying to understand an issue.

The final section of the book takes a look to the future. Section VI provides insight into three analytics techniques that are beginning to emerge from pilot or institution-based projects but have not yet experienced wide promulgation or use. While Sclater highlights discourse analytics, social network analysis, and sentient and emotional analytics, he also notes that the field is both trying to determine what to call them as well as how they directly relate back to learning. In doing so, he reminds us that

while new forms of data may emerge and new techniques for examining said data may be developed, it

is imperative that we consider how the data and techniques relate to improving the learning experience.

Perhaps the most appreciated aspect of this resource, beyond its concrete examples, lucid and

understandable discussions, and well-researched foundation, is the view of the experts provided at the

end of each of the six sections. These experts are highly-recognized authors, researchers, and

practitioners in the fields that comprise analytics, and represent a truly global view as to how learning

analytics and its related disciplines can, should, and do work in the world today. While the research is

interesting, and the chapters containing specific content are highly compelling, the experts' views on

how systems are deployed, for example, provide insight and depth that a synthesis of the literature

simply cannot. The nuance Sclater is able to tease out from those being interviewed lends a level of

humanity to a concept – learning analytics – that can often be reduced to a tool, product, or algorithm.

To wit, Dr. Brent Rientes, a Reader in the Institute of Educational Technology at The Open University,

UK, notes quite bluntly, "it's not data or technologies, it's people" (p. 243).

Sclater does many things well with this book. It is well-referenced, taking into account literally

hundreds of articles, books, and conference proceedings, relying on both the seminal works of the field

as well as more recent takes on the needs for learning analytics implementation. It is well laid-out. The

volume is divided into six parts, and while each section builds on the previous, the sections could also be

examined on their own without leaving the reader feeling out of place. It is highly accessible. Sclater

takes care to link concepts together where previous authors have not or where terminology is often

used interchangeably. For example, in chapter 9 Sclater boils linear regression, logistic regression, and

naïve Bayes methods of prediction down to just a few paragraphs each while retaining the basic tenets

of each technique.

If anything is lacking in this volume, it's the fact that there is no epilogue or afterword from

Sclater himself. His painstaking approach to documenting highly pertinent components of learning

analytics is readily noticed, and the inclusion of experts and thought-leaders in the field (a group Sclater should be considered a member of) provides additional insight. However, I finished the book wanting more synthesis. True, Sclater directly points readers to earlier and later chapters when discussing various concepts, and this is helpful – but a synopsis of the salient points and their relationship to a given section's chapters or the overall volume would have been useful. Further, while the experts' thoughts are nicely curated for each section, a high-level review of what Sclater appreciated or felt was lacking could have provided just a bit more insight into the growing and evolving nature of the field.

Timothy McKay, a professor at the University of Michigan and one of the twenty experts interviewed for this book, notes in a separate essay that "we have to take advantage of the information age in which we find ourselves and dissolve the walls between research and practice in education" (McKay, 2016, p. 7). In *Learning Analytics Explained*, Sclater does just this, bringing together multiple perspectives on the field in ways that demonstrates how the research contributes to pedagogy, and how pedagogy put into practice adds to the depth of research that can be done. Faculty, administrators, students, and the casual reader interested in the application of learning analytics will find this book insightful, and, furthermore, highly useful as they look to better understand the field, deploy an initiative on their campus, or tweak existing efforts to improve outcomes.

References

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