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Book Review

Developing Effective Educational Experiences Through Learning Analytics

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Developing Effective Educational Experiences through Learning Analytics
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Students' educational experience is important, as demonstrated in recent studies (e.g. Reames, Sheetz, Englesbe & Waits, 2016; Rodríguez, Riaza & Gómez, 2017; Wright, Jacobs, Ressler & Jung, 2016). The field of learning analytics is critical to assist understanding of students' learning experiences in higher education. The 12 chapters of this book focus on the development of students' educational experiences through learning analytics, written by different authors from the fields of educational data mining and learning analytics. Some of the chapters include a case study. Much of the content that appears in this well-structured and well-written book deals with the impact and experiences that universities and institutions may encounter through the design, adoption, implementation, and measurement of learning analytics strategies.

In Chapter 1, the authors indicate that learning analytics tools could provide an approach of presenting data that builds students' fluency with information technologies. The related methods and technologies are introduced in this chapter for educators, teachers, and researchers. Chapter 2 followsd as a comprehensive introduction and discussion of re-sampling methods, such as Propensity Score Matching (PSM) and Synthetic Minority Over-sampling Technique (SMOTE). This chapter also covers the statistical improvement in sensitivity and accuracy by using new algorithmic approaches. Chapters 3 and 4 present case studies from Australia and the United Kingdom, which may provide references for decision-makers and teachers when adopting and implementing learning analytics strategy and visualization approaches in higher education.

Chapter 5 focuses on learning analytics serving as a tool, with which data that can be gathered from different access points and provide information about how learners are interacting with course content, learning systems and peers. Chapter 6 provides a revised learning strategies section for the

Motivated Strategies for Learning Questionnaire (MSLQ) for assessing and measuring the learning strategies used in a computer-skill learning environment. This revised instrument contains five subscales and can be used to assess learning computer skills in online learning environments. Chapter 7 argues that higher education has the duty to use learning analytics, and also indicates that students should be encouraged to be actively involved in the activities that facilitate their learning. A case study describing the application of learning analytics as a means of measuring a changing pedagogical paradigm is presented in Chapter 8. Instead of the traditional concept and position of the 'academic as a domain expert', an innovative and interesting position of the 'academic as a Learning to Learn expert' is discussed in this chapter, while learning analytics is used to demonstrate the significantly enhanced academic results and achievements.

In Chapter 9, the author from Eynesbury Institute of Business and Technology (EIBT) introduces how EIBT bridges the gap between the technical and educational domains through application and integration of analytic tools, with learning management systems which could provide a vast set of accessible data. The importance of a proper survey design method is described in Chapter 10, while the author mentions a survey design process adapted from Spector (1992) to yield critical insights about training design, participants and trainer interactions, and participants' perceived value of attending a training course. In addition, the author of this chapter provides the necessary insights to replicate the steps and processes, and implement a post-course survey for training leaders. Both Chapters 11 and 12 are conceptual articles. The eleventh chapter aims to help administrators and decision makers of higher education institutions (HEIs) understand how learning analytics and related tools have been used and can be applied for improvements in the field of education. Teachers and faculty can analyze students' learning outcomes to design or modify more appropriate interventions and teaching styles for students. In Chapter 12, the author provides the theoretical and practical overview, from the perspective of global higher education, of learning analytics. It is argued in this chapter that using learning analytics in HEIs has the potential to enhance educational performance and reach strategic goals in the global competition age.

Previous publications in learning analytics may help with identifying learners at risk of dropping out of a course, understanding the information flows in learners' social interactions, and identifying cognitive, metacognitive, and affective situations in discourse and other information about learners' activities in or interaction with educational technologies (Gašević, Siemens, & Rosé, 2017). For example, learning analytics techniques could be applied to identify clusters and distinguish learners' profiles based on their help-seeking behaviours (Corrin, de Barba & Bakharia, 2017). However, the field of learning analytics is still in its energetic youth, and there are many questions and room for further research and development (Gašević, Siemens, & Rosé, 2017). This book, *Developing Effective Educational Experiences through Learning Analytics*, could serve as the basis, as it provides the essential knowledge and research directions for educators, researchers, and decision-makers universities and institutions. Finally, if the Editor and the authors of this book would like to prepare a second edition, it is suggested that a step-by-step approach to adopt and learn learning analytics would be very helpful for those novices who want to learn it. This would enrich the mention of this concept in Chapter 9.

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