Repositório ISCTE-IUL

The Past, Present and Future of Learning Analytics

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ABSTRACT

Learning Analytics (LA) is a recent research field, in which Business Intelligence and Analytics techniques are applied to learners and their contexts, with the purpose of acquiring a greater insight about the entire learning process (including outcomes). In this talk, we explore the LA landscape, delving into the definitions, techniques, challenges, and lessons learned.

CCS CONCEPTS

• **Information systems → Information systems applications**; *Decision support systems*; Data analytics

KEYWORDS

Learning analytics; Business Intelligence; Data Management; Higher Education

1 LEARNING ANALYTICS

The Society for Learning Analytics Research (SOLAR) defines LA as "the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs" [1]. LA is a recent research field, in which Business Intelligence and Analytics are applied to gain insight into the learning process. In this talk, we apply a generic Analytics framework (adapted from [2]) to contextualize the past, present and future of LA. Specifically, we address the types of questions that LA research can answer and the different impact and value that can be delivered to LA stakeholders (i.e., students, teachers, and educational institutions). These questions can be addressed by several Business Intelligence and Analytics techniques focusing on the What?, How?, Why?, with a time-based analysis (past, present and future). Based on a comprehensive analysis of the literature and of key LA projects developed in different countries, we provide an overview of the evolution and current state of LA research. A collection of lessons learned and most common techniques used are discussed, useful to new researchers entering this field. Finally, we provide a look into the future, with a view of challenges that need to be dealt with, including privacy and ethics of LA. Mostly triggered by new data sources and Big Data applications, current data management challenges impact our society as well as teaching and learning in Higher Education.

REFERENCES

[1] SOLAR. 2011. Open Learning Analytics: an integrated & modularized platform. http://solaresearch.org
[2] T. Davenport, J. Harris, and R. Morison F. Analytics at work: smarter decisions, better results. 2010. Harvard Business Press, USA.