

Theme 2: The Shifting Context of Higher Education

Learning Analytics: The Emperor's New Clothes?

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The term 'Learning Analytics' has evolved in the HE sector over the last 10 years, with the most cited definition in literature being that established by academics attending the first international conference on Learning Analytics and Knowledge in 2011:

"The measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimising learning and the environments in which it occurs" (Siemens, 2011).

In the UK, the term has been used very broadly to describe initiatives ranging from supporting institutional Key Performance Indicators (KPIs) to initiating personalised student interventions to support academic success.

Learning Analytics is currently very topical within the UK sector, particularly in the context of wider debates about the measurement of learning gain in Higher Education and the way in which an informed use of student learning data can contribute to this. There is significant investment in Learning Analytics projects within institutions and by Jisc, which is sponsoring a £1m project to support institutions, including the University of Exeter, to analyse, understand and use their learner data. The principal drivers for the current and continuing development of Learning Analytics are:

- a vast increase in the amount of student learning and engagement data collected and available for analysis;
- academic interest in data mining to understand patterns in data and thereby to predict learner behaviour and possibly intervene to influence outcomes;
- the need for HE management to develop metrics to demonstrate institutional performance;
- the commercialisation of Learning Analytics, with many companies attempting to capitalise on the interest in big data and its commercial potential.

Following promising findings in the US and Australia, Learning Analytics is gaining traction in the UK HE. The major reasons for adoption of Learning Analytics to date have been to:

- improve retention;
- provide better feedback to students;
- capture attendance data;
- enhance teaching and learning.

However, despite the apparent 'success' of Learning Analytics, in reality there is little evidence to support the hype. Recent research at the University of Exeter (Sønderlund and Smith, 2017) has revealed that the current evidence base to support investment in Learning Analytics is unclear, particularly in relation to the effectiveness of interventions based on predictive models. The authors also recommend that further research is required to build a solid evidence base for investment in Learning Analytics. The University of Exeter is attempting to address this issue by funding an internal research project which aims, within its own specific institutional context, to measure student engagement and to identify predictors of student success. By analysing the various student learning activity datasets that are routinely stored across the University, the project expects to deliver a better understanding of student behaviour with regard to teaching and course participation. It is early days yet, but initial findings are suggesting that demographic data may be a significant factor. If this is the case, then the opportunity to influence outcomes will be severely limited. Even if retention rates can be improved by the use of Learning Analytics, the question of whether an

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institution should attempt to retain students who are at risk of failing should be seriously examined.

Software vendors are anticipating the commercial potential of offering Learning Analytics solutions to institutions which want to develop a quick-win solution and show a fast return on investment by improving student retention. The value of a large investment should be carefully considered given the lack of clear evidence of the effectiveness of prediction-based interventions, the dangers of using a 'one-size-fits-all' solution and the question of what value a Learning Analytics software product may offer over and above a data warehouse and reporting system.

Even when all the issues above have been resolved, the impact of Learning Analytics on the students themselves must not be underestimated. For every student who perceives learning analytics as a positive motivator, there may be another who feels de-motivated by the data presented. Some students will feel threatened by the presentation of their data in a dashboard which includes predictions and cohort comparisons. 'Hard to reach' students may well be the focus of a Learning Analytics project and special consideration will be needed to ensure that they do not become even more 'hard to reach' and de-motivated, by being exposed to a visual representation of their progress if it does not paint a positive picture. As well as these ethical concerns, there are also Data Protection challenges to address, especially as data analysis will almost certainly involve the use of sensitive personal data. New General Data Protection Regulation (GDPR) legislation, which will apply in the UK from 25 May 2018, puts particular emphasis on 'profiling', i.e. automated data-processing and decision-making based upon it. This will have significant impact on the use of predictive modelling.

Despite all the challenges faced by Learning Analytics, the potential advantages of exposing students' data to them and their tutors are many. Using data to diagnose trends before they become serious issues will give tutors a valuable decision-support tool which will allow them to support all students, regardless of social class, background or demographics. Carefully designed, evidence-based intervention processes will allow tutors and student support services staff to target extra support to those who need it most. Students will also be empowered to monitor their own academic performance.

All of the challenges faced above can be overcome, and the potential of Learning Analytics can be realised by any institution which approaches a Learning Analytics project with a senior management team willing to support the project strategically and financially, to have a clear vision of the outcome of the project, to listen to all concerns, to develop appropriate processes and policies and to make strategic decisions to ensure project success. The emperor will then indeed be seen to have a very splendid set of new clothes!

Reference list

Siemens, G. (2011) [1st International Conference on Learning Analytics and Knowledge](#), Banff, Alberta, February 27–March 1, 2011, as cited in: George Siemens and Phil Long, 'Penetrating the Fog: Analytics in Learning and Education.' *EDUCAUSE Review*, 46 (5). Available at: <http://er.educause.edu/articles/2011/9/penetrating-the-fog-analytics-in-learning-and-education> (Accessed: 30 March 2017).

Sønderlund, A.L. and Smith, J. R. (2017) 'Evaluation and effectiveness of ALA Interventions: A systematic review.' University of Exeter. Submitted to *Computers and Education*.

¹ JISC (2017) Effective Learning Analytics; Helping further and higher education organisations to analyse and understand their data. Retrieved at: <https://www.jisc.ac.uk/rd/projects/effective-learning-analytics> (Accessed 30 March 2017).