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Big data comes to campus

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BIG data sets showing what students do online may prove as vital to education as genome databases have been to genetics or Europe's Large Hadron Collider to physics, according to learning analytics expert Simon Buckingham Shum.

"Some people think that education is on the verge of becoming a data-driven enterprise (and) also a science," said Dr Buckingham Shum from the UK's Open University.

As ever greater amounts of data about student behaviour were gathered and analysed, research into learning analytics would develop rapidly, he said.

So too would the ability to predict academic success, give students immediate feedback, and modify course content to reflect progress -- or its absence.

Dr Buckingham Shum spoke about learning analytics via the web at a Macquarie University learning and teaching **conference** (http://staff.mq.edu.au/teaching/workshops_programs/expanding_horizons/program/) last month.

He is a leading light in the new **Society for Learning Analytics Research** (<http://www.solaresearch.org/>); SoLAR is staging its **inaugural Australian meeting** (<http://epress.lib.uts.edu.au/conferences/index.php/SoLAR/SSFC12>) next month at the University of Technology, Sydney.

Dr Buckingham Shum told the Macquarie conference that interest in online delivery and learning analytics reflected in part the impossibility of building enough bricks and mortar campuses to meet the demand for higher education.

Data, and not just about student learning, was being amassed at a terrific rate, with possibly 90 per cent of today's digital data having been created in the last two years, he said.

He said mergers and partnerships were bringing together familiar learning management platforms and more novel tools for learning analytics as well as intelligent tutoring and adaptive content systems that respond to a student's progress.

He gave the example of Purdue University in the US, where an online "traffic light" showed students in real time whether or not they were likely to be heading for academic success (a green light) or failure (red), based on a predictive model.

Students responded by changing their learning habits -- and these habits were carried over into courses without such immediate feedback.



Big data Source: The Australian

A paradox of this experiment was that students saw it as evidence that Purdue cared about them as something more than a number, although a number is precisely what they were to the algorithm.

Dr Buckingham Shum said learning analytics could be misread, or distort reality, if the educational context and purpose of measurement were forgotten.

He cited the dictum of Virginia Tech's Gardner Campbell, who said: "The basic question is not what can we measure. The basic question is what does a good education look like".

Hence the need to discover what learning analytics might be able to reveal about deep learning, the appetite for life-long learning and the quality of student engagement, he said.

Typical online measures of student activity were a proxy for engagement but might have little to say about its quality.

A related debate had to do with completion, much measured because it was easily measured and financially important for institutions.

Dr Buckingham Shun said some researchers protested that the fact of completion was not an especially sophisticated proxy for learning because those students who passed managed to do so for many different reasons.

Yet from another point of view, the focus on completion was entirely legitimate because students rightly valued qualifications as a signal of ability in the competitive job market, he said.

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