



TAILORING HELP

Knowing students' backgrounds helps so we can offer them better advice, and stretch and support them accordingly.



ASSOCIATE PROFESSOR LEE YEW HAUR, head of SUSS' business analytics programme, on how the data is used.

Professor Koh Hian Chye (left), head of the Institutional Research and Analytics Unit at SUSS, and Professor Cheong Hee Kiat, SUSS president. ST PHOTO: TIMOTHY DAVID

SUSS using data analytics to cater to student needs

School hopes to use data on past results to improve future performance

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Varsities have always collected information about students, from their grades to the courses they take.

Such data was hardly used in the past. But today, universities are looking at how to study such data, to tailor learning to students' needs – a field known as learning and predictive analytics.

It is a growing trend among universities in countries like the United States. Here, universities are trying out analytics in some way.

The Singapore University of Social Sciences (SUSS), in particular, has gone into it in a big way to help its students learn better.

From analysing why they fail to seeing if past results matter, the university, which caters mainly to adult learners, hopes to make use of data to understand their behaviour and improve their performance.

Since the university set up a Business Intelligence and Analytics Unit in 2016, it has analysed 8,826 students and 3,976 graduates, and gathered enough information to dish out advice backed by data to students.

For instance, a fifth of its adult learners – who are juggling work and school – risk failing their first year in school.

They hope this finding will make students think twice about trying to rush through their studies and

Using tech tools to boost learning outcomes

Analytics is gaining traction in the higher education sector, as more universities turn to technology tools to make sense of the data they have.

Since 2016, the Singapore Management University (SMU) has used predictive analytics – which extracts information to find patterns and form predictions – to customise learning for students.

Faculty members access a system that generates a “success index” based on each student's current performance mapped to historical data. The system, which allows staff to tell if students are on track or at risk, also takes into account students' learning behaviour such as how involved they are in discussions and their assessment scores.

Professor Lim Kian Guan, SMU's vice-provost (undergraduate matters), said SMU is also working with partners to provide digital tools that can respond to students in real time by providing recommendations based on their abilities and learning needs. For instance, students can be di-

rected to focus on the topics they are weak in, based on quiz scores.

He added that NTU will make use of artificial intelligence and more sophisticated data analytics tools to customise students' learning experiences. For example, NTU's Lee Kong Chian School of Medicine and tech giant IBM are working on a virtual tutor for medical students.

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A spokesman for the Singapore Institute of Technology said it has plans to carry out predictive analytics, as part of efforts to make use of technology to improve students' learning experiences. The National University of Singapore has also started some projects to see how analytics can help learning outcomes.

Prof Kam Chan Hin, deputy provost (education) of Nanyang Technological University (NTU), said analytics have helped faculty and instructors address students' needs and misconceptions more quickly as well as identify and assist weaker students earlier.

He added that NTU will make use of artificial intelligence and more sophisticated data analytics tools to customise students' learning experiences. For example, NTU's Lee Kong Chian School of Medicine and tech giant IBM are working on a virtual tutor for medical students.

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said it wants to better understand its students, who come from a variety of backgrounds.

“The likelihood of their success will vary quite a bit,” he said, adding that SUSS hopes to give them a leg up and help them graduate.

SUSS has been tracking students' performance and studying habits, like how many courses they take and how many they drop.

Prof Koh said one key finding

was that better prior grades – like polytechnic grade point average or O level results – correlated with better scores in university, but the so-called advantage “evens out after the first one to two years”.

“Polytechnic education provides a foundation for fundamental university courses, but after the first year, everyone would have caught up,” he said.

What stood out, he added, was that O-level scores in English and mathematics were associated with how students did in university – reflecting how important writing, thinking and logical skills are for life.

SUSS has gone a step further by identifying students from its cohort of 700 full-time freshmen who started this month that are considered “moderate to high risk”.

About 4.3 per cent of the cohort were deemed to have a moderate risk of not faring well.

It analysed students' academic track records and how they fared in its selection process, like cognitive tests, essays and interviews, as well as patterns of past cohorts.

The aim is not to be intrusive but to intervene early, and pay more attention to students who need more help, said Prof Koh.

Associate Professor Lee Yew Haur, head of SUSS' business analytics programme, said most of the university's students are working adults. They take the maximum four courses per semester but usually cannot handle the workload because of other commitments.

“Knowing students' backgrounds helps so we can offer them better advice, and stretch and support them accordingly,” he said.

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