

Business intelligence systems help id potential drop outs

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Data triggers feed into an automated wellness system to spot students at risk

The University of New England is a front runner in a trend emerging in Australian universities to use business intelligence systems to identify which students are at risk of dropping out. These systems allow administrators to intervene early to maintain both student engagement and fee based income streams.

According to Professor Robert Brooks, associate dean, undergraduates, in the business and economics faculty at Monash University, there is a rising tide of tertiary institutions turning to BI systems to provide the evidence base for targeted student intervention. Monash for example has a system that allows it to drill down through vast data reservoirs to monitor individual student performance.

“We are hoping to work out how to better target initiatives around improving the student experience,” said Prof Brooks, adding that, “For the university there’s the ability to get a greater efficiency, and be more focussed about the strategies we might try. It’s a more systematic and evidence based analytical approach.”

In traditional education settings it can be relatively easy to spot a student who is disengaged - they don’t turn up for lectures, when they do attend class they sit off to one side and stare out the window. They turn in essays late or not at all.

When students are learning online however ennui can be harder to spot. At UNE for example 80 per cent of the 18,000 students are distance learners, only occasionally travelling to campus.

As the assistant director for student services at UNE, Rhonda Leece is on the frontline when it comes to making sure students stay on track. Each day she receives a report from what the university refers to as its “automated wellness system” which identifies students at risk.

There are 34 data triggers which feed into that automated wellness system, two of which are student generated. On the university’s student portal , students are encouraged to use the e-Motion system which allows them to select which emoticon best reflects their mood (happy, neutral, unhappy, for example) and send in a short Twitter style message of up to 140 characters.

The words used in the messages feed into a word cloud, called the Vibe, which shows how the student body is feeling at a particular time. When the cloud shows ‘stressed’ as one of the common feelings, perhaps at exam time, the student support team will update its blog with study tips or relaxation sheets said Leece.

The data from this student initiated reporting are fed into UNE’s Student Relationship Management (SRM) system. While the SRM has broader value in the university, and is the platform for round the clock student self-service, it also provides the data for the business intelligence application which is refreshed on a daily basis.

Patrick Tobin, UNE’s SRM project director, says that the RightNow software (which is sold as a cloud based service) was first used at the university in 2005. “But it sat there doing very little - it was a failed implementation actually. We got hold of it in 2007 and have been using it properly since May 2008.”

According to RightNow CEO Greg Gianforte, over 50 per cent of Australia's universities now use its tools, with Monash, Canberra and Griffith being other local users besides UNE.

In UNE's case the SRM manages the data and workflow associated with all student-university interactions and also links directly to the university's student information system, Callista.

Since October 2009 data from the SRM along with a range of other university computer systems has been fed each night into the university's central data warehouse which is then analysed by a Cognos business intelligence system to provide Rhonda Leece and her team with daily reports.

According to James Cooper, the data warehouse architect who has been largely responsible for building UNE's BI system, "We have identified triggers for example student having a tendency to hand in work late or getting lower grades or asking for extensions. We put all those triggers together and then that delivers a score to the student support team."

An alert identifying the 200 students thought to be most at risk is then sent to Leece and her team. An automatic email is sent to the identified students, offering them additional support if they would like it.

If the student responds with a yes, then a case manager is assigned and the student is offered a range of support services.

The reports are sent to the support unit as emails with pdfs featuring the student's contact details and what Cooper referred to as a 'spark line' which plots student trends, and reveals whether they are gradually less happy, suddenly much less happy or becoming happier.

Summary reports are also sent to heads of schools each week or month with an ad hoc reporting package available for heads of schools.

Developing the current business intelligence system has taken four years, and UNE has been supported by Sydney based specialist Altis Consulting. Besides forging the links with the SRM system (which was also being developed during the same period but by a separate team) Cooper had to construct a data warehouse that could then be mined for insights.

The automated wellness reports are just one of the insights provided by the BI system. Other reports available to university administrators include course and unit demand based on the number of searches on UNE's website; the number of course applicants; offers made to students; the number of students accepting the offers and enrolling; and student load. Each indicator includes alerts to highlight potential issues such as unusual demand for particular courses, higher than anticipated numbers of applicants or falling enrolments.

Particular sensitivity was required in terms of the way the student wellness data was handled. According to Cooper; "We want it to be helpful rather than a Big Brother approach. We don't want students feeling they are being watched - but we want to keep the numbers high and the students happy."

According to Leece it's all about; "Attempting to identify before students disengage that things might be a bit rocky for them.

“What we have found is we are significantly impacting on their intentions to withdraw,” she said.

For universities the stakes are high.

“Universities have looked at attrition retrospectively - this allows us to know day by day. For the university it’s all about retention, income, student satisfaction and word of mouth recommendation,” said Leece.

But she argued that there are even more important outcomes for the individual students who through early intervention are able become successful, independent learners.