

STUDENT RETENTION & SUCCESS 2017

UNSW: USING PSYCHOMETRICS TO PERSONALISE
TEACHING AND SUPPORT





Statistics show that university attrition rates are at their highest level since 2004, with 17% of students not making it past the first year.

Increasing success and retention is critical for the higher education sector, with the total cost of first-year attrition estimated at more than AUD\$1 billion per year, but this is about so much more than attrition – it's also about ensuring students achieve to their full potential.

Ahead of the 2017 [Student Retention and Success Summit](#) we chat to Mark King, Director of Educational Delivery Services at the University of New South Wales (UNSW). Mark discusses how UNSW is encouraging student effectiveness by using psychometric analysis and cognitive interactivity to personalise the student experience.



PERSONALISING LEARNING

CATERING TO NEW WAYS OF LEARNING

“At UNSW student retention isn't a critical issue, we tend to focus on attainment - so allowing students that come in at various levels of ability to attain higher levels and actually succeed.

We're now no longer talking about learning and teaching at UNSW, instead we're focusing on education as a broader construct. The personalisation of learning, it's not new, we've been talking about it for a couple of decades now; but in the last five to seven years it has really picked up steam.

As a psychologist and cognitive ethnographer and Director of Educational Delivery Services, I study learning and interactivity at the shorter timescales; the millisecond and hundredths of milliseconds using eye-tracking methodologies and observational techniques. This data helps to inform our educational evaluation and our redesign of educational resources and activities as well as the ways we engage students in both face-to-face and online environments.

If we want to personalise learning, I believe that we must know much



PERSONALISING LEARNING

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more about the person. This means we need to know deep-level demographics about our students, not just the cursory ones like gender and age. We need to understand students' performance attributes and competencies, and combined with specific curricular attributes, we need to understand learning and cognition from very different perspectives. In our view, cognition is embodied, situated, extended and distributed. We need to engage a number of different persons within the individual learner; the problem-solving person, the positioning person, the feeling person, the negotiating cultural identities person, and the learning person.

A lot of times we think about student experience only within the dimensionality of academics, but if we're talking about whole-person development, as we should be in order to ensure success, we need to extend the academic dimension out to include personal and social, administrative, geographic; all kinds of other dimensionalities that makes up an individual human being in order to truly personalise their learning experience."

RESTRUCTURING TEACHING

OPTIMISING THE STUDENT EXPERIENCE

“At UNSW we’re restructuring education through a number of different initiatives. The Inspired Learning Initiative, which is a business case my team wrote last year, is a \$55.5 million strategic grant over five years that will allow us to redesign up to 1,000 courses to bring in the modern learning sciences and educational design principles.

We’re also using a learning design model that we developed at the University of Hong Kong called RASE – Resources, Activity, Support, Evaluation to go about the personalisation of learning.

With regards to individualising students through psychometrics and optimising them into student teams, we’ve begun a pilot that includes personality inventories and team role preference with other variable such as workplace emotional intelligence, cultural values, intercultural communications competencies, among others, to understand how our students engage with each other and with educational resources and technologies of learning.



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Through these pilot programmes we have begun restructuring education by optimising student groups and in-class dynamics - essentially we use algorithms to optimise the student experience. Taking first year physics for example, most of the time, we would allow the students to self-select into their groups - but that can be suboptimal. We need to use our demographic and performance-attributes data to allocate students into teams which maximises their connectivity to their cohort or diversify the teams to perform difficult and complex tasks better.

As you move into second and third year, it might be about maximising diversity principles where you even out the skill sets across the cohort of students within groups, so you make the assessments fairer, by having students work with students with complimentary skills and abilities; students they wouldn't necessarily select themselves.

Overall it's about the psychometric assessment of students and the reporting back to students of how they're developing as human beings beyond the academic realm."





RESTRUCTURING TEACHING

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“In ensuring student success we need to tap into the social dimensionality of this new generation of learners that we discovered in the millennials, but which is exponentially greater in the Gen Zs. Millennials and Gen Z learners learn in very different ways, they socialise in very different ways. We therefore need to integrate the way that they learn and socialise into the way that we do our teaching.

In higher education we generally only think about learning in larger time scales – a two hour lecture, a week or even a semester, but millennials learn differently and we need to tailor our teaching to them through new ways of learning based on different timescales. By moving into shorter timescales we can move students who are in destabilised environments into more stabilised environments, through enhanced educational resources and support.

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For example, by allowing multiple forms of information consumption – whether that be a lecture, a video, a text-based version or a podcast, we allow for different trajectories and different pathways of learning that cater to the entire student body's preferred methods of learning and educational resource consumption.

That however is only not the dimensionality of students; we also need to look at the performance, satisfaction and viability of the teachers, casual teachers and the tutors that are on the programme. Enhancing education across multiple timescales for them also is just as important in encouraging overall student effectiveness, and, on a broader scale, institutional reputation.

Through these new initiatives and psychometric and cognitive analysis we really want to understand learning much better. We want to enhance education and learning across different timescales and we want to move from the simple metric of student satisfaction into a more complex metric of student effectiveness, which includes their performance and their satisfaction.”



STUDENT RETENTION & SUCCESS

To hear more from Mark about how UNSW is restructuring teaching through psychometric analysis which is optimising the student experience and encouraging student effectiveness join us at [Student Retention and Success 2017](#).

The event, held in Melbourne on the 30th – 31st May, brings together over 20 industry experts from universities across the country and provides an ideal networking and thought sharing environment.

To secure your ticket to the event and for special early bird prices simply fill in the [form](#) and send to registration@iqpc.com.au.

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