

Nottingham Trent University (NTU)

A short introduction to the NTU Student Dashboard

Introduction

The [NTU Student Dashboard](#) is a learning analytics resource designed to help students to manage their own learning and enable university staff to better support students. It does so by aggregating data about students' engagement with their studies and presenting it in an easy-to-use format. The Dashboard also generates 'no engagement' alerts and has space for tutors to add notes and make referrals to professional services.

Learning analytics offers advantages over other methods used to detect students at risk of early departure. Traditional methods, such as academic assessments, often generate early warnings too late to be used effectively and methods based on student background risk stereotyping, or even stigmatising, students for characteristics that they are unable to change. By using learning analytics, NTU is able to cost-effectively identify students at risk of early departure throughout the year.

The Dashboard is managed by a team within the Centre for Student and Community Engagement ([CenSCE](#)) and developed with the technology partners [Solutionpath](#). The Dashboard won the award for Outstanding Student Support (THE 2014) and was cited extensively by the judges when NTU won University of the Year (THE, 2017). Since the launch in 2014, there have been almost 2 million student and staff log ins.

The Dashboard is effective at identifying students at risk of early departure. It has also been particularly effective at identifying students from socio-economically disadvantaged backgrounds. Students who use the resource more frequently tend to have higher engagement and are less likely to drop out than those who don't.



Figure 1: View of the NTU Student Dashboard showing day-by-day engagement for a student compared to their cohort. The view also shows a bar chart showing daily engagement over the same time period and a calendar view of the most recent data. This student has mostly 'good' engagement, but it has dropped in the last week shown. The vertical lines show that a tutor has added seven notes to the student record.

How it works

The Dashboard draws data from seven institutional data sources:

- Attendance monitoring
- Card access to buildings
- E-resource log ins (e.g. online books and journals)
- Library Loans
- Virtual learning environment logins
- Virtual learning environment learning room use
- Online coursework submission

The Dashboard algorithm uses these data sources to create one of five daily engagement ratings ('High' – 'Very Low'). This data is presented visually allowing students and their tutors to see each student's daily engagement rating compared with the average of other students on their course. The Dashboard also contains other important information such as entry qualifications, contact details, feedback and detailed information about each of the data sources used.

The Dashboard also generates early warning alerts. If a student has not engaged with any of the data sources in the system for 14 days (10 days for first years), their tutor is sent an automatic alert and is asked to contact the student. This is a high importance alert, students who generate an alert are usually in serious need of further support and at risk of early departure. However, the time period is purposefully long as we are seeking to balance student autonomy, staff workload and risk.

The team have started working with academic schools to generate mid-term reviews. Schools send targeted communications to students with lower engagement encouraging them to make contact with their personal tutors.

Tutors and support staff can also add notes to the system, these are usually a record of discussions with students, but can also include any agreed actions. Tutors can also make referrals to other support services via the Dashboard such as wellbeing, or study support and the system helps smooth the process.

Development & use

The NTU Student Dashboard is one of the first learning analytics resources implemented in the UK. It was built in partnership with the technology company [Solutionpath](#). Following a successful pilot, it was made available for all students in 2014-15. So far, there have been over 1.7 million student logins and 160,000 staff logins to the Dashboard (Sept 2014 - June 2019).

Dashboard impact

Student Feedback

Students have been consulted from the very outset using annual surveys, focus groups and interviews. Students want to know whether they are at risk of dropping out and generally trust the University to use their data responsibly. In the most recent survey (2018/19, n=1,401), three quarters of students reported that they found the Dashboard useful, particularly when their tutors use it during tutorial conversations.

- *"I like how you are able to see information so you can see if you are on track."*
(NTU fashion student)

- *"It shows me my progress and how I'm doing at university instantly."* (NTU business studies student)
- *"I like seeing my attendance, all the course information and who to contact."* (NTU conservation student)

Staff Feedback

The team have gathered feedback from personal tutors. Tutors use the resource to prepare for tutorials, discuss students' engagement with them and make notes and referrals at the end of the tutorial discussion. Forty percent of tutors reported that using the Dashboard in tutorials had led to a positive change in student engagement (n=108, June 2017).

- *"I noticed a drop in the engagement level of one student. I arranged a 1-1 meeting to discuss the various problems the student was experiencing. The student found this support very helpful and their engagement level picked up as a result."* (NTU personal tutor.)
- *"In February, I conducted one-to-one tutorials with students and showed them evidence of their engagement, these students could be seen to engage more from this point."* (NTU personal tutor)
- *"I have shown them the evidence of their lack of engagement on Dashboard so that they can no longer argue / believe that "everything is fine" and it has forced them to re-evaluate their actions resulting in improvements in engagement."* (NTU personal tutor)

The most frequent Dashboard users are those colleagues in Student Support Services who use the Dashboard in a range of ways to understand students' needs. *"The Dashboard is really useful because it allows us to recognise poor engagement which often indicates a much deeper problem."* (Sara Baldwin, head of student support services, interviewed on BBC Radio 4, the World at One, 31st October 2018).

Impact of student use

Those students who use the resource more frequently tend to have higher average engagement than their peers. Around 40% of our students log in at least once a fortnight. They are more likely to have good and high engagement and are more likely to progress to the next year of study with higher grades. Students report that seeing their engagement data in the Dashboard has prompted them to change their behaviour. One student described how she used her Dashboard to reflect on her wellbeing:

- *"Looking at my Dashboard I was able to pinpoint when the anxiety started and to have a system like that it was so much easier to look at your journey as a whole. ... to have something like that is very important and it's almost a necessity now."* (NTU business studies student interviewed on BBC Radio 4 World at One, 31st October 2018)

Engagement as a measure of risk

The data drawn from the Dashboard is effective at identifying those students most at risk of dropping out from their courses. For example, in 2017/18 only 14% of first year students with 'Very Low' average engagement progressed to the second year, 86% left early, failed or repeated the year. In the same year, 94% of first year students with 'High' average engagement progressed. Furthermore, only 23% of those students with 'Very Low' average engagement who progressed achieved a grade equivalent to a 2:1 or better, compared to 73% of those with 'High' average engagement. Although the trends

are less pronounced at the start of the year, low engaged students are more at risk of early departure from the start of the academic year.

Accuracy of the 'no-engagement' alerts

The non-engagement alerts are an indication of a high risk of early departure. In 2016-17, only 21% of students who generated one or more 'no-engagement' alert progressed. In the same year, 87% of first year students who did not generate a 'no-engagement' alert progressed. The University is constantly seeking to find a way to balance the rights of adult students to make their own learning decisions and alerting them to risk. In 2019/20, the University conducted two new pilots, firstly alerts were sent direct to students instead of their personal tutors in three academic schools, secondly the alerting period was dropped to ten days for first year students.

Targeting support to disadvantaged groups

Following an extensive consultation with the Students' Union and diversity experts, NTU designed the Dashboard to only use data generated by students' engagement with their studies. The Dashboard has never included background characteristics (socio-economic status, ethnicity, disability etc.) within its core algorithms. The evidence clearly shows targeting based on student engagement is effective. For example, Foster & Siddle (2019) demonstrated that students from widening participation backgrounds were 43% more likely to generate a 'no-engagement' alert than their peers from more affluent backgrounds. Foster (2019), showed that students with mental health conditions were likely to have lower engagement than their peers and were more likely to generate 'no-engagement' alerts. Rather than assume that all widening participation students require support, the University is able to target support at those students who need it the most.

Further developments

The Dashboard is an effective tool for identifying students who are at risk of early departure. There is good evidence that some students have used it to manage their own learning and that tutors have used it effectively to change student trajectories. However, significant work remains. NTU is currently researching the tutor/student tutorial to understand better which interventions work best and the team is working to better embed the resource into institutional practices and policies.

Contact

Ed Foster, Student Engagement Manager
Centre for Student & Community Engagement
ed.foster@ntu.ac.uk

References

Foster, E., Siddle, R., 2019, The effectiveness of learning analytics for identifying at-risk students in higher education institutions, Assessment & Evaluation in Higher Education, <https://doi.org/10.1080/02602938.2019.1682118>

Foster, E., (2019, 7th August), Can learning analytics warn us early on mental health?, [blogpost], retrieved from <https://wonkhe.com/blogs/can-learning-analytics-warn-us-early-on-mental-health/>