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THE EFFECTIVENESS OF LEARNING ANALYTICS FOR IDENTIFYING AT-RISK STUDENTS IN HIGHER EDUCATION – SUMMARY

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Introduction

The UK higher education sector is increasingly facing up the challenges of reducing disparities of attainment between socially disadvantaged students and their more advantaged peers. Pressures from the Office for Students' Access and Participation plans will only place more pressure on institutions to develop clear and effective strategies for improving student outcomes.

One of the challenges faced by all institutions is how to effectively target support or interventions at the students that require it most. Foster & Siddle (2019) explore the effectiveness of using learning analytics to identify students in need and contrast it with using student background, specifically widening participation status. The paper discusses the accuracy of this approach and, perhaps more importantly, the efficiency of using learning analytics compared to the strategy of targeting support based on student background.

'No-Engagement' Alerts

NTU uses Solutionpath's StREAM learning analytics resource (known in the University as the NTU Student Dashboard).

The Dashboard uses data from seven NTU systems (VLE, attendance, library use etc.) to generate a daily engagement rating for each student (High to Very Low), the ratings are presented in an online Dashboard and are accessible to students and relevant NTU staff. Importantly, the engagement score is based only on academic activity, it does not use background characteristics such as socio-economic status or gender. The Dashboard also generates 'no-engagement' alerts for students with no engagement against any of the seven data systems for 14 days during term-time. The alert is sent to the student's tutors and they are requested to make contact with the students unless they know of a reason not to. The bar for the alert is set purposefully high as the institution seeks to balance the need to contact students at risk of early departure, but also avoid spamming tutors and retaining students' autonomy.

The Study

Researchers at NTU tested the relationship between the 'non-engagement' alerts and the student outcomes for two cohorts of first-year undergraduate students (2014-15 and 2015-16) analysing the outcomes of over 15,000 students.

The researchers analysed the association between generating one or more alert and two 'at risk' measures:

• Progression to the next year of study

• Achieving the equivalent of a 2:1 or better grade

The team then compared the efficiency of using these alerts to identify students at risk of poorer outcomes with the efficiency of using demographic data, using widening participation status as a case study example. In order to investigate the efficacy

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of learning analytics for addressing differential student outcomes for disadvantaged groups, the team also analysed the likelihood of students with widening participation status generating alerts compared with their non-widening participation counterparts.

Findings

The team successfully demonstrated that learning analytics is an effective methodology for identifying students 'at risk'. The 'no engagement' alerts successfully identified students who were both at risk of non-progression and achieving lower grades.

- Students who generate more alerts are less likely to progress to the second year
- Students who generate more alerts are less likely to achieve better grades
- For example, only 8% of students who generated one or more alert and progressed to the second year achieved a 2:1 or better grade (2015-16)

Students from a widening participation background were more likely to generate a 'no-engagement' alert. The odds of students with widening participation status generating an alert were on average 43% higher.

The 'no-engagement' alerts are much more efficient than targeting students than using their background characteristics. In 2015-16, there were 1,715 students from a widening participation background in the first year; 397 of whom withdrew. In the same year, 605 no-engagement alerts were generated, and 384 no-engagement alert students withdrew. For every student successfully identified as being at risk using background, four would have been wrongly identified. This is both wasteful in terms of resources needed to act on the data but, perhaps more importantly, also potentially extremely demotivating to the students involved.

Conclusions

This study further reinforces what is widely understood across the sector: students from socio-economically disadvantaged backgrounds are less likely to progress and achieve the highest grades. The findings suggest that, for whatever reason, these students are less engaged whilst at university.

However, just targeting students because of their background may be counterproductive. In this study, over ¾ of widening participation students progressed to the second year. Whilst there is no dispute that targeting additional resources to help them overcome barriers such as acculturation or help them access financial support or other professional services may be beneficial, using background is inefficient and risks patronising or demotivating students who are coping perfectly well. Using learning analytics is a far more effective way to target support to those students who need it.

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The article shows that no-engagement alerts generated by Solutionpath's StREAM tool are both effective at identifying at-risk students and more efficient at doing so than targeting based on demographics.

The paper can be accessed via DOI: 10.1080/02602938.2019.1682118 if, for whatever reason you are unable to access the paper this way, the authors have agreed to share a small number of their personal copies with us. Please contact hello@solutionpath.co.uk