

Predictive Analytics at NUI Galway

This institutional approach...

...is based in NUI Galway.

...was developed in-house.

...focuses on an algorithm developed to predictively identify students at risk of non-completion.

...aligns with the institution's student.



NUI Galway
OÉ Gaillimh

Identified Need

Like all institutions, NUI Galway wished to improve its retention rates. While a student success strategy (now approved) was under development, the need for an evidence-based means of identifying students at risk of non-completion was also identified. Prior to the development of this initiative, the availability of such data and the approach to gathering and collating it were less than uniform across the institution. Gathering and combining data from multiple sources was usually done manually, with a high associated resource burden. This also meant that, by the time the data had been gathered, acting on it in a timely and impactful way that would benefit students was challenging.

Solution

A data analytics project was already underway in the institution. This was dovetailed with the new student success strategy to ensure the fitness-for-purpose of any technical developments. The project team worked with a subgroup of the University's Working Group on Retention to develop an algorithm, based on a range of factors, that could predictively identify students at risk of non-completion. This fitted well within the larger data analytics project and it was clear that, although it would take some time to embed the use of the algorithm in day-to-day operations, it would potentially enhance the capabilities of the institution to support students who were experiencing difficulty. The system is currently being piloted in two colleges of the University.



Enablers and Challenges

Developing the algorithm as part of a supported and structured data analytics project was a key enabler, as was the inclusion of a very experienced analytics consultant in the project team. Having a supportive project board, an enthusiastic project team and an engaged group of end users was also critical. Challenges included the unavailability of certain data fields due to time constraints, and scheduling the number of meetings required to discuss all operational aspects. This initial approach is not a sophisticated machine-learning initiative and it is anticipated that accessing the relevant expertise to bring it forward will also be a challenge.

Advice

The advice of the project team is to work very closely with institutional users to ensure a fit-for-purpose development. As development can be expensive, institutions that are just starting out are advised to look to similar institutions that are already active to get an informed understanding of what works and what does not. Where resources allow, the team recommend investigating the potential of a machine-learning approach or a commercial package as the inclusion of artificial intelligence can greatly enhance the power and value of an analytics solution. Finally, the team would advise bringing in expert guidance from outside the institution if the resources to do so are available.

Further Information

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