Using Data Analytics to demonstrate the impact of Access and Participation projects

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INTRODUCTION

Increased equality of opportunity for all students remains the focus for HE providers at present. Therefore, the importance of finding innovative ways to increase and support student success is crucial. An increasingly popular way to improve student success is through the use of data analytics. Data analytics (or leaning analytics within the Higer Education sector) can be defined as "the use, assessment, elicitation and analysis of static and dynamic information about learners and learning environments, for the near real time modelling, prediction and optimisation of learning process, and learning environments, as well as decision-making"

To enhance the success of our students, the University of East London utilises the learning analytics platform, CIVITAS. CIVITAS combines diverse institutional data sources (SITS, MOODLE etc.) and applies predictive and historic models, to demonstrate predicted retention and successful completion outcomes of our students. With this platform, UEL can identify at risk students and develop targeted interventions to increase retention and overall success.

Critics suggest that the use of learning analytics may not be effective as there is no demonstration of a comprehensive model. Therefore, practitioners who are not experienced with learning analytics are unable to action insights generated from learning analytics. Despite this, we show that working in partnership with access and participation (AP) project leads can enhance the effectiveness of CIVITAS. Additionally, we demonstrate the positive impact of access and participation projects on student continuation. We have used the following AP projects: Kortext and Student Volunteering

METHODOLOGY

Kortext

Data Generation

Gathered relevant data from Kortext and project leads, including student usage patterns, engagement metrics, and reading habits.

Tracking

Monitored and filtered key indicators such as frequency of Kortext access and 'number of Kortext Items interacted'.

Analysis

Civitas Administrative Analytics derived predictive patterns to assess potential continuation rates. This involved the application of predictive models on gathered student engagement metrics from Kortext.

Action

Predictive insights of continuation rates are shown based on student engagement with Kortext. Interventions and personalised strategies are devised by the institution and project leads for students predicted to have lower continuation rates.

Volunteering

Data Generation

Compiled data from the institutional database and project leads, including student demographics, course details, and metrics related to participation in the Volunteering initiative.

Tracking

Monitored indicators such as frequency of volunteering events attended, duration of engagement, and feedback metrics.

Analysis

Using Civitas Initiative Analysis tools, assessed the actual impact of the volunteering initiative on student continuation rates across diverse groups.

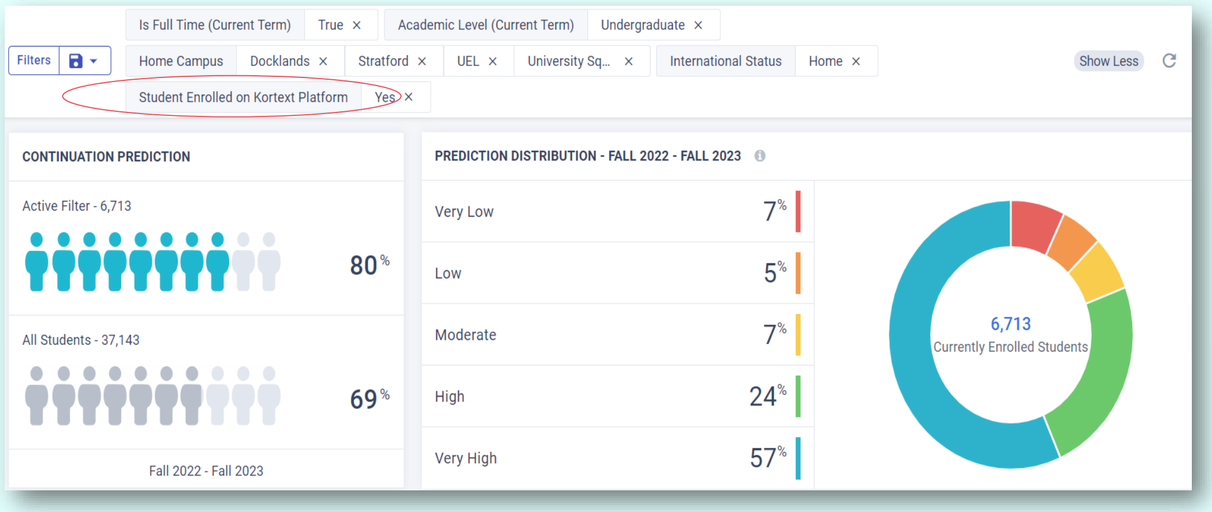
Action

Identified key areas where volunteering made a significant impact on continuation rates. Tailored future strategies and initiatives based on the insights derived, ensuring greater student engagement and continuation.

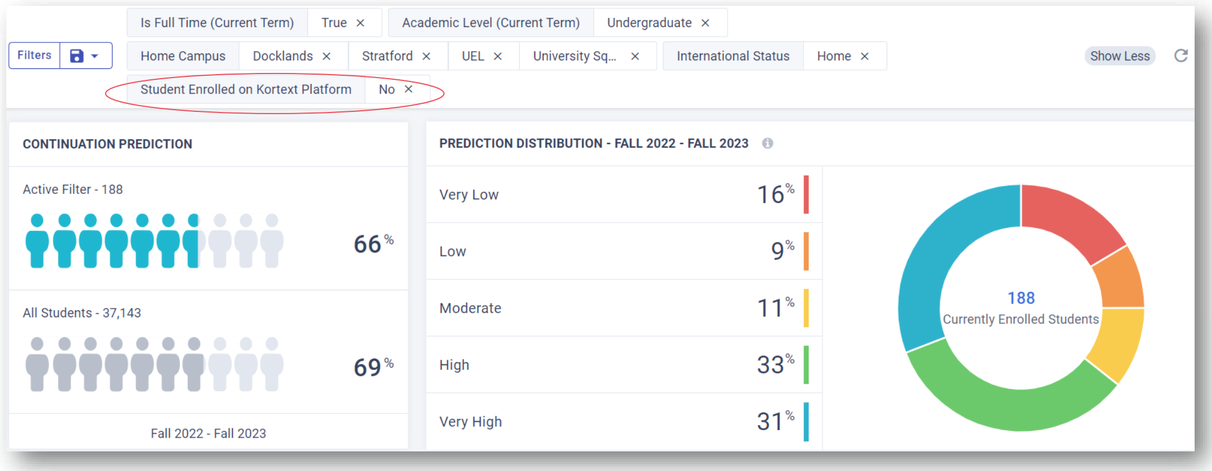
RESULTS - Kortext

Out of the 6,713 students enrolled in Kortext, their continuation prediction stands at **80%**, notably higher than the benchmark rate of 69% for all students.

In contrast, the 188 students not enrolled in Kortext have a continuation prediction of 66%, slightly below the general benchmark of 69%.



RESULTS – Kortext (Cont.)



RESULTS - Volunteering

The Volunteering project (2021-22) was shown to contribute to a continuation increase rate of **8.6%**.

Volunteering enhances continuation rates across various student groups.

Undergraduates benefit more with a continuation lift of 12.79%, while postgraduates show a lift of 4.60%.

Year One students (identified as students with 0 terms completed) have an 8.34% lift, highlighting the benefits of early exposure to volunteering.

Full-time students benefit notably with a 10.26% lift, in contrast to their part-time counterparts at 5.61%

STUDENT GROUP	ANALYZED PARTICIPANTS	P-VALUE	CONTINUATION LIFT
Overall	**927**	**< 0.01**	**8.58% +/- 3.1%**
Academic Level: Postgraduate	477	0.05	4.60% +/- 4.5%
Academic Level: Undergraduate	450	< 0.01	12.79% +/- 4.3%
Completed Terms: 0 Terms	553	< 0.01	8.34% +/- 4.3%
Completed Terms: 1-3 Terms	368	< 0.01	9.18% +/- 4.5%
Full-time vs. Part-time: Full-time	590	< 0.01	10.26% +/- 4.5%
Full-time vs. Part-time: Part-time	335	< 0.01	5.61% +/- 3.2%
Gender: Female	480	< 0.01	8.37% +/- 4.3%
Gender: Male	444	< 0.01	8.91% +/- 4.5%
Prediction Percentile: Bottom Quartile	⚠ 35	< 0.01	43.10% +/- 22.1%
Prediction Percentile: Second Quartile	⚠ 132	< 0.01	16.50% +/- 10.9%
Not statistically significant ~~Prediction Percentile: Third Quartile~~	227	0.07	7.21% +/- 7.9%
Prediction Percentile: Top Quartile	530	< 0.01	4.94% +/- 2.8%

Both genders reflect a near-equal benefit: male students show an 8.91% lift, while females are at 8.37%.

The bottom quartile of students, least likely to continue, experience a significant 43.10% lift, but caution is due to the small sample size of 35. The second quartile also sees a pronounced lift at 16.50%, while the third quartile doesn't exhibit significant change. The top quartile observes a modest yet significant lift.

Discussion

This piece has successfully shown that the use of learning analytics platform, CIVITAS, can demonstrate an increase in continuation when students engage in an AP project. As discussed, students engaging in Kortext are shown to have a potential increase in their continuation rate, whilst students who previously engaged in student volunteering were shown to have their continuation rates lifted.

Whilst there are multiple factors involved in improving continuation rates, learning analytics can optimise student's learning environment and personal characteristics. Historically, the AP remit has focused on vulnerable student groups based on their demographic data alone. With the use of CIVITAS, the institution can make use of additional data indicators such as course progress, learning environment, Moodle engagement alongside demographic data.

It is important to consider that the impact of learning analytics is dependent on the remedial action and partnership working across the institution. Within the institution, practitioners can present some apprehension when using CIVITAS. For example, practitioners are often dealing with competing priorities and thus there exists a complex balance of delivering within their service area, whilst managing the student's personal experiences along with limited training in the learning analytics area. Critical to the successful use of CIVITAS is timeliness within partnership working. It is important to identify and address barriers that practitioners may experience when using CIVITAS.

Conclusion

To conclude, learning analytics is becoming increasingly popular particularly with the advancements of data warehousing, data modelling and programming. Furthermore, the impact of COVID-19 has strengthened the need for learning analytics and has developed opportunities for interventions. Thus, using data/learning analytics alongside frontline work can cultivate a meaningful data driven culture whilst supporting students most at-risk.

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