Succeeding against the odds

Carol Calvert, Andrew Norton, Juliet Coleman & Rachel Hilliam

The Open University

Introduction

The University has two active predictive analytics models and this project combines the use of outputs from both models. The intention is to identify **successful** students who had **low predictions** of success at various points both within module and for module pass and return. The students will be asked about key factors in their success. This project is therefore a combination of quantitative and qualitative work. The project would rely heavily on using AL's to talk with students.

The two modules involved in the project are MU123, which is the Introduction Maths module, and S217 is a second level Physics module (From Classical to Quantum)

Background

The predictive probabilities for 14 J students on MU123 were compared to the actual outcomes. A number of students with low predicted probabilities of success, and who were apparently succeeding, were identified. The VOICE record for the student was investigated and it seemed that in some cases there was some evidence of a successful intervention from the University- see student 2's story. In most others there was nothing in VOICE, as in Student 3's story, but it was quite feasible to identify students who had a background which suggested a low probability of success.

Student's 2 story:Probability predicted at start of MU123 of reaching 100% fee point: (P=0.43)

Reason for low probability: The high number of times the student failed to engage with modules and he is studying 120 credits in year

Student: Has NO disability flag, is in the 21-24 age band, male and is working towards the Q62 B.Sc (Computing)

Current[2] TMA scores : MU123 93, 76, 58 ,80

TM129: 77, 84

TU100 : 78, 90, 78, 78, 92

The data story: The student was new in 2012 J when they **reserved on** TU100 and B123 and the University cancelled the reservation. In 2013 the University cancelled the reservations on TU100 B and on B120 2013 D whilst the student cancelled their reservations on MU123 13J and TU100 13J. In 2014 the student **reserved** on MU123 and TM129 for the B presentation which the student then cancelled and the University cancelled the student reservation on TU100 B.

The student starts MU123, TM129 and Tu100 in 2014J

The VOICE story: details back to 2012 indicate possible financial issues and we have helped.

Student 3: Probability predicted at start of MU123 13J that they pass MU123 (P=0.46)

Reason for low probability : Number of previous fails on accountancy modules

Student has no disability flag, is in 25-29 age band with less than 2 A levels and is working towards Q31

Current TMA scores (passed Mu123 in 13J) M140 in 14j : 88, 82 67, -

MST124 15B: 86,

MST125 15B : 64

The data story The student was new in 2009 and took a number of accounting modules which they failed. The **reserved** on MU123 13B but the University cancelled this and the student started on MU123 in 13j and passed. They subsequently took M140 and are currently studying MST124 and MSt125

The VOICE story: Cannot see anything obvious

Questions of Interest

Q1: What can the University learn from students who have succeeded despite low predicted probabilities of success based on OU analyse, the Information Office data and, for S217, previous study of mathematics

Q2: Are some groups of students consistently more likely to be able to overcome the obstacles that have previously prevented their success on OU modules

Q3: Are there different factors for Maths Level 1 to Science level 2

Methodology

- Identification of students, in October 2014J who had predicted low probabilities of module pass and return, but who have done so.
  -Interview a sample of these students about why they felt they succeeded and whether the University had undertaken any actions that contributed to their success;

- Identification of students, in October 2015J who have predicted low probabilities of module pass and return, at module start.
- Progress of the students will be monitored. Those who consistently showed "recovery" will be identified and asked about key interventions that had contributed to their success;
- Any lessons from the 14J work to be considered for offering to 15J students
- Patterns of consistent mis match between observed patterns and the predictive analytics data identified.

eSTEeM
The OU centre for STEM pedagogy