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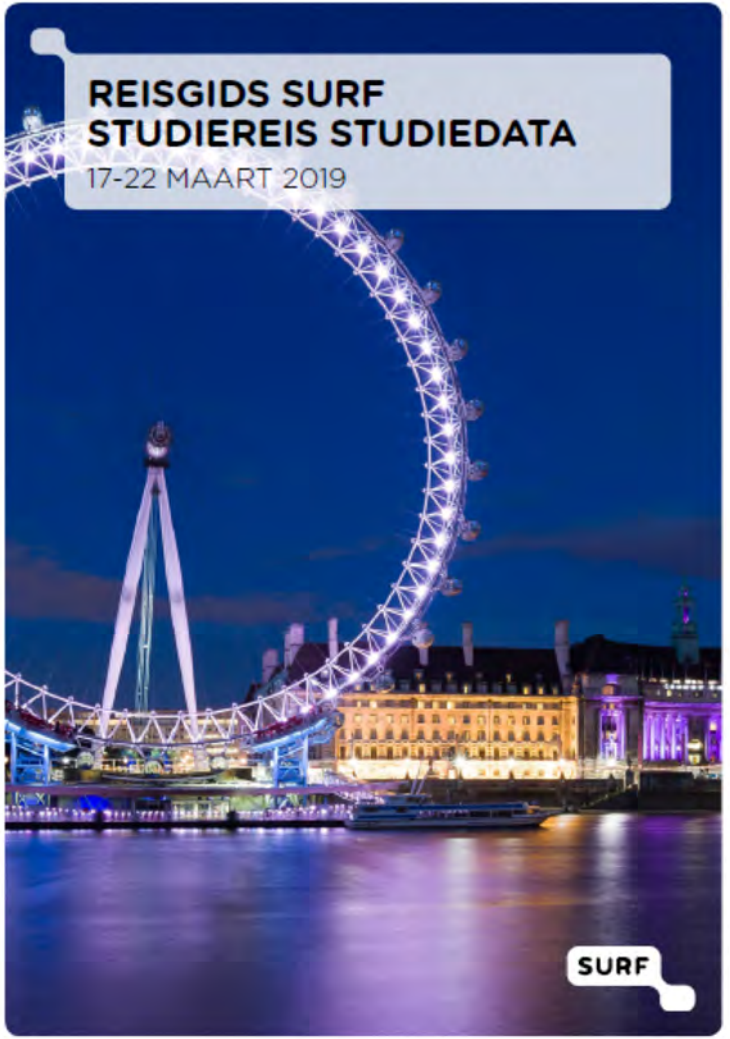


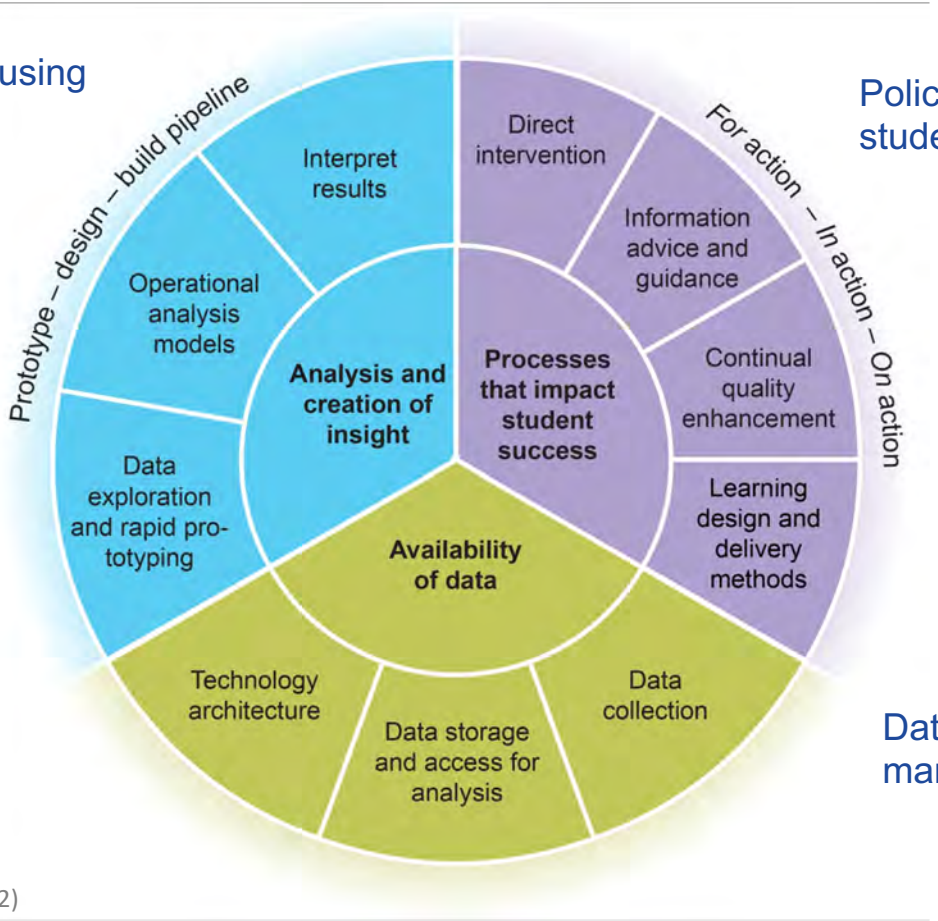
ANALYTICS ENHANCEMENT STRATEGY (2013)

Early alert indicators using predictive analytics

Using operational and experience data

Partnering with researchers

Data visualisation and 'dashboards'



Policy on the ethical use of student data for learning analytics

Analytics for action evaluation framework

Impact of learning design on outcomes

Data warehousing and management

Adapted from Barton and Court (2012)

Text mining and sentiment analysis

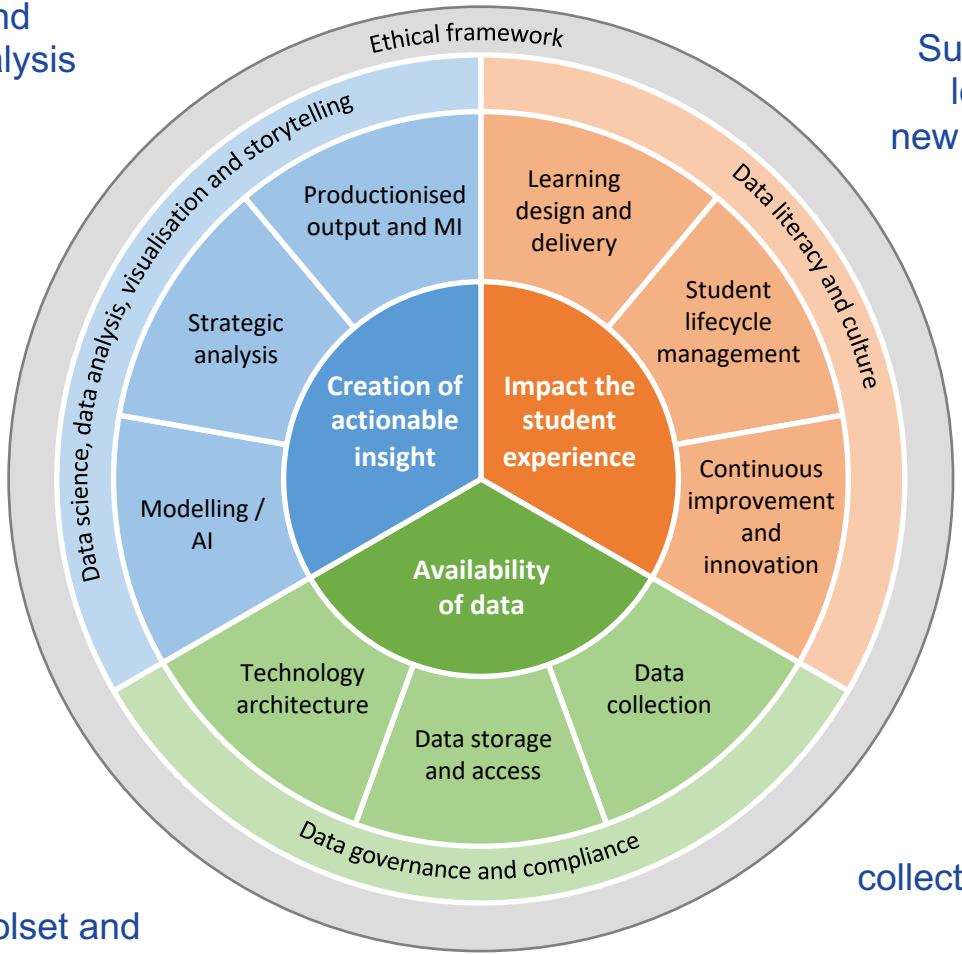
Self-serve vs bespoke insight

Centralising analytics resource

Further applications of advanced analytics

Cloud based analytics platform

New toolset and data architecture

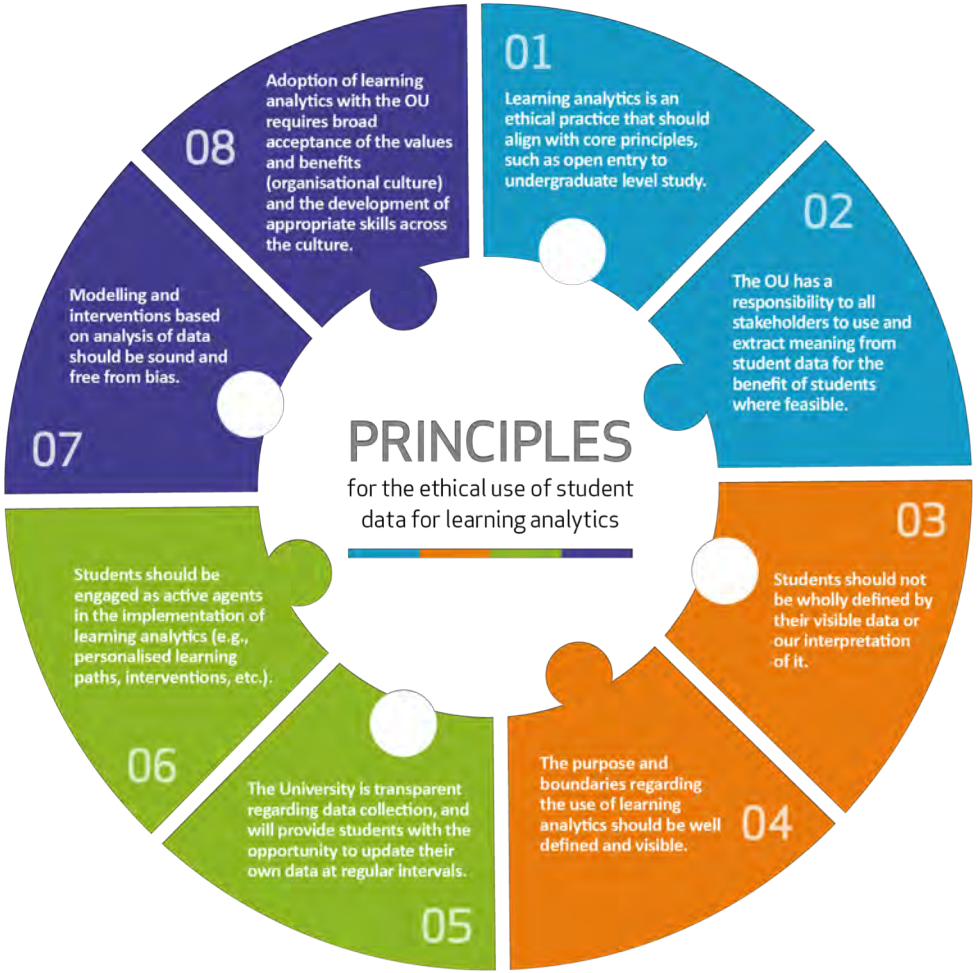


Supporting test and learn approach to new teaching models

CRM analytics and evaluation of interventions

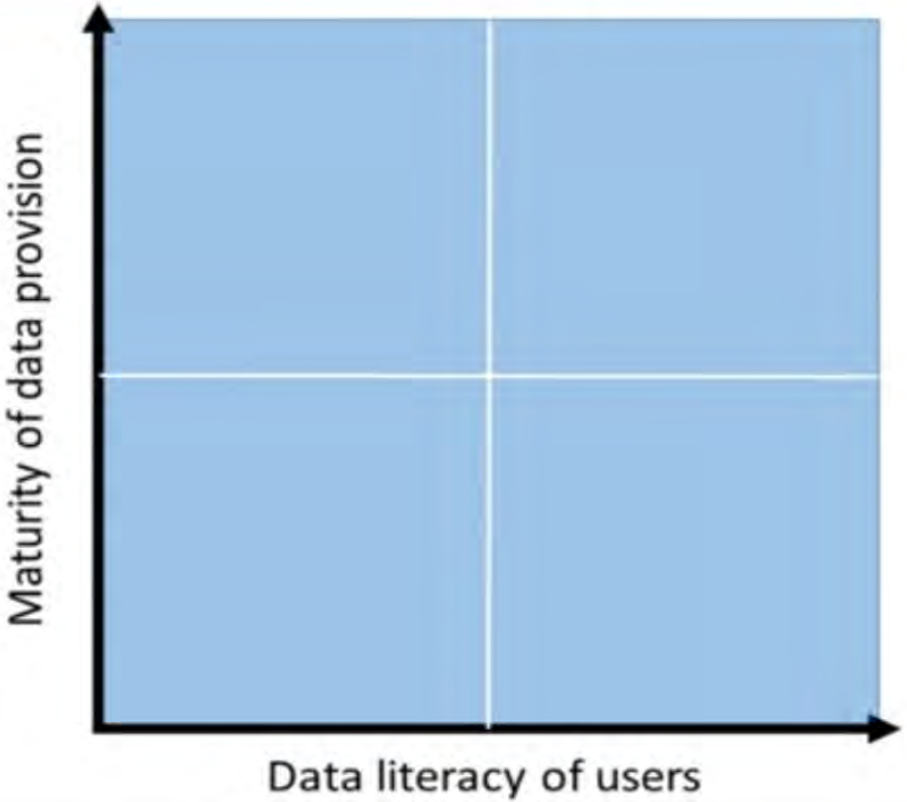
Embedding new QA/QE process and alignment with TEF

New systems for collecting student feedback



http://www.open.ac.uk/students/charter/essential-documents/ethical-use-student-data-learning-analytics-policy

Plot your institution in terms of maturity of data provision and literacy of your users



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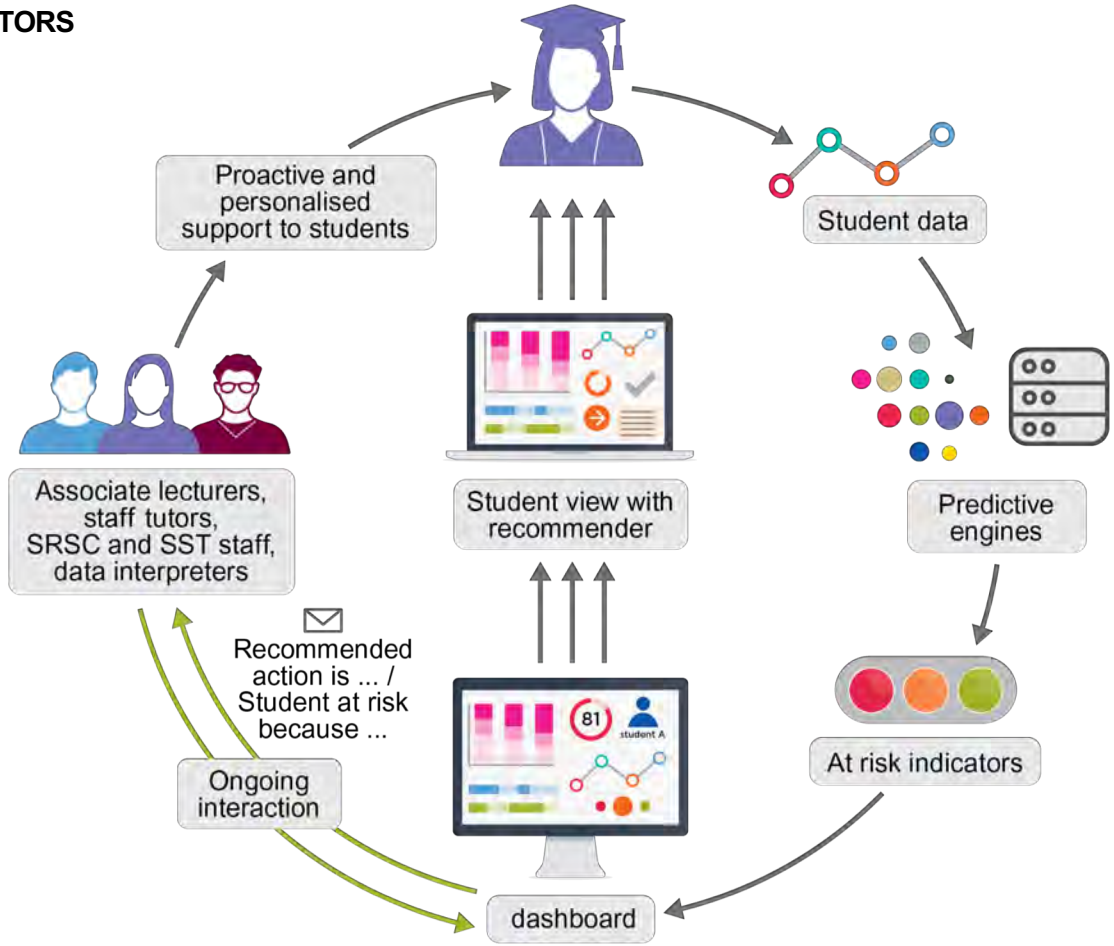
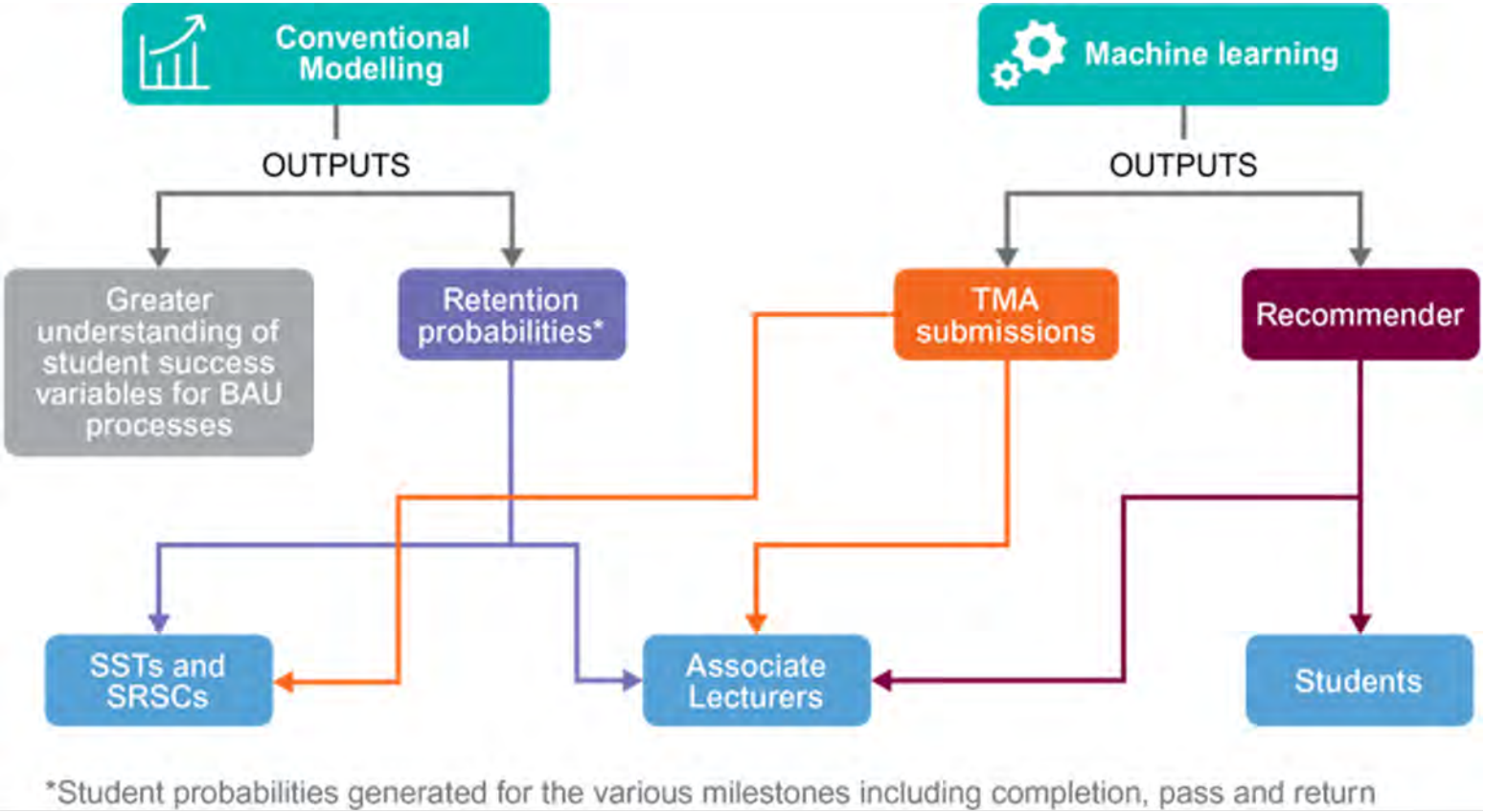
THE VISION

EARLY ALERT INDICATORS



PREDICTIVE ANALYTICS AT THE OPEN UNIVERSITY

Approaches to generating predictions



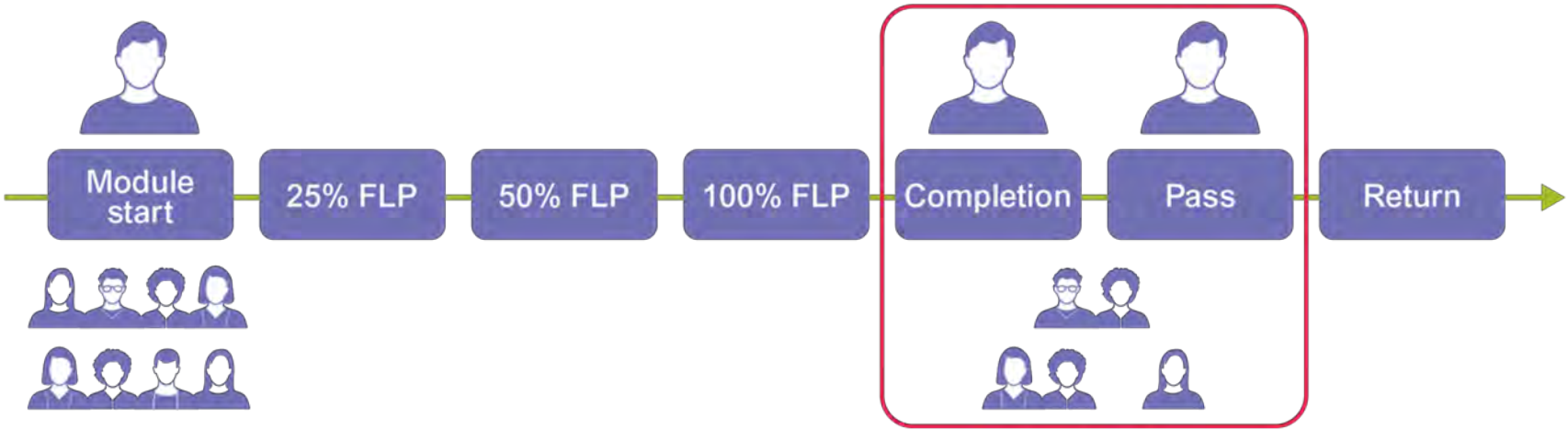
*Student probabilities generated for the various milestones including completion, pass and return

** e.g. Pass rates model generating explanatory factors

STUDENT PROBABILITIES

What are they?

For an individual **undergraduate** student it is the **likelihood** (probability) of them still being present at each milestone?



For a module cohort:

- How **many** students are likely to still be present at each milestone?

Herodotou, C., Rienties, B., Verdin, B., Boroowa, A. (2019). Predictive learning analytics 'at scale': Guidelines to successful implementation in higher education. *Journal of Learning Analytics*.

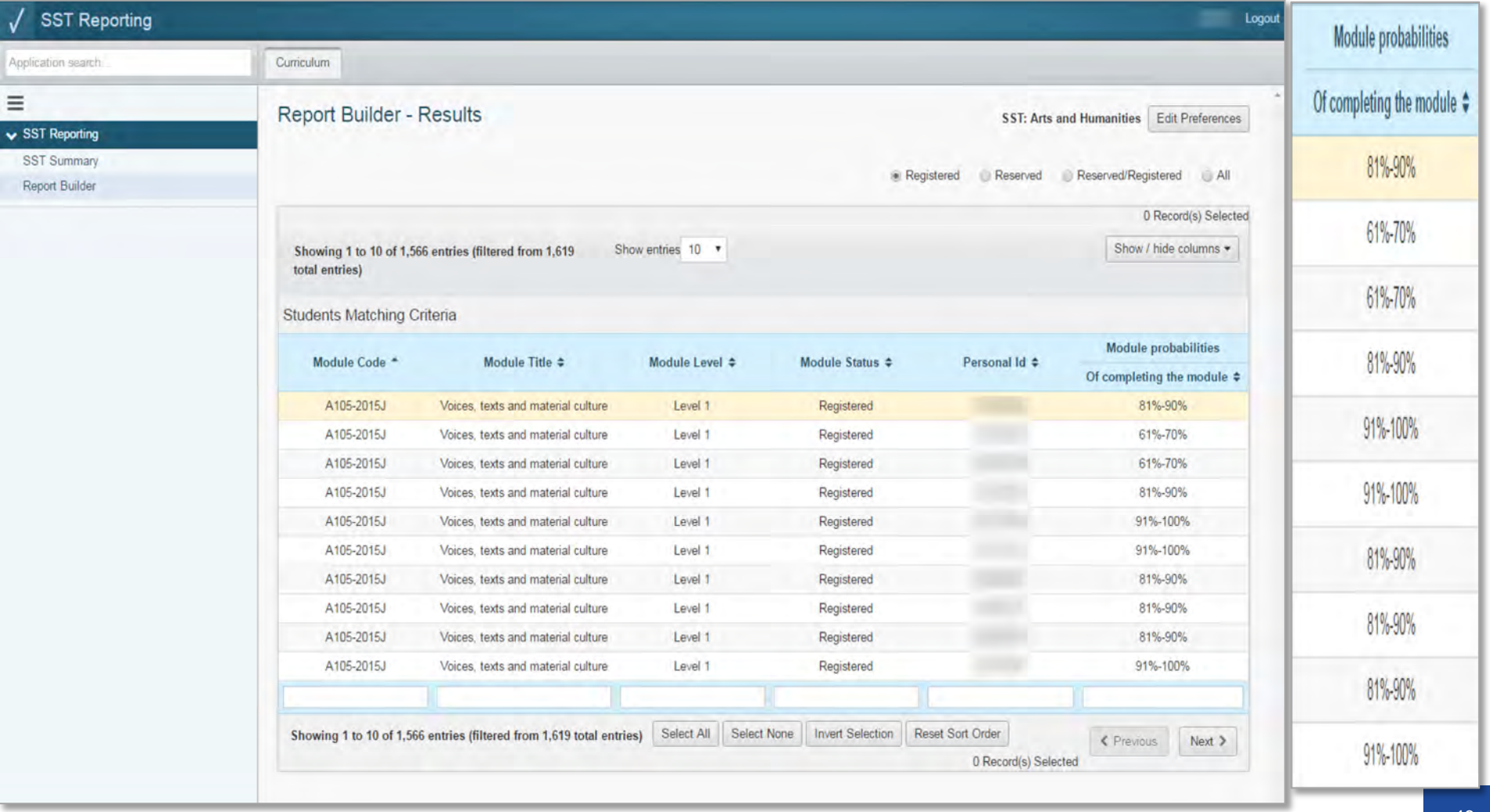
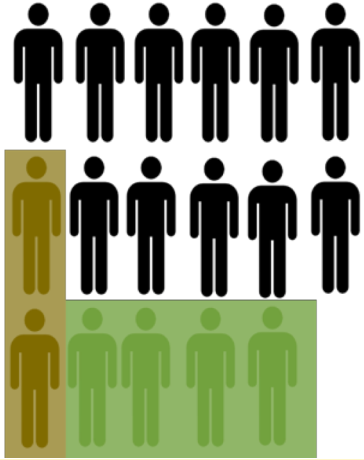


Fig 1. Anonymised screenshot of the Student Support Tool, containing module probabilities to complete (last column of the table, also shown enlarged)

IDENTIFYING STRUGGLING STUDENTS – A TUTOR GROUP EXAMPLE

Based on an email from a tutor regarding a tutor group with a October 2017 (Feb 2018)



Out of seventeen students, only four were deemed ‘on track’, with further two a ‘maybe’. The rest were either already withdrawn or were not engaged.

Could we have seen this from the student data?

Submitted up to TMA2, but “had personal problems and was going to discontinue studies for the time being”

Probability to pass - 46%-47%

Withdrawn

Probability to pass - 4%-26%

Probability to pass - 83%-94%

STUDENT PROBABILITIES – PATTERNS

Story of a Tutor Group

18 Aug 17 (registered)	**Top factors** study history (C), workload, module, qualification, demographics (N)
23 Oct 17 (25% FLP)	+ VLE visits
31 Dec 17 (50% FLP)	+ TMA submissions and score
31 Mar 18 (100% FLP)	+ VLE and TMAs updated

CONCLUSIONS:

- A student's performance can be anticipated even before module start
- In the vast majority of cases, students with low probabilities end up withdrawing from the module
- Students who are consistently on 'green' are generally doing well and are well engaged
- 'At risk' status can happen at any stage of the module