http://sure.sunderland.ac.uk/policies.html or alternatively contact sure@sunderland.ac.uk.

EMPOWERING STUDENT ACHIEVEMENT

A holistic approach to student support through predictive analytics, qualitative insights, and pro-active solutions for Personal Academic Tutors.

University of Sunderland

UKAT

Who are we…

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WHAT IS PAD?

# WHAT IS PAD?

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THE DATA

THE DATA

Feasibility Study

Study conducted in early 2022 to identify what data the university held and in which systems as well as highlighting any data quality/consistency issues. From this, a decision was made as to what data was in the scope of the PAD project.

Systems Overload!

Bringing together data from multiple University systems was one of the fundamental requirements of PAD. In-house development meant this is dynamic and responsive to changes in business systems and processes, but the time and skills commitment is much higher than an 'off the shelf' system.
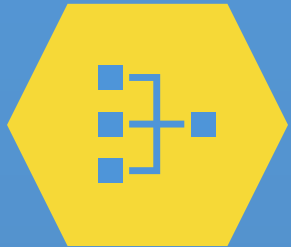
Data Wrangling

Development of the PAD data model was conducted in Spring/Summer 2022. Alteryx was used for all stages of the data parsing and cleansing process as well as the predictive model.

Modelling

Development of the PAD data model was conducted in Spring/Summer 2022. The model was in beta throughout 2022/3 and we conducted a pilot in January 2023 with a small group of academics.

THE DATA: PART II - The Model

Alteryx

An ETL (Extract, Transform, Load) tool used by around 70% of UK HE/FE institutions. We use it for most of our data parsing and MI reporting at Sunderland. Allows us to automate many repetitive data tasks as well as more complex insights such as PAD.

Data Features

The model comprises 50+ data features which have been identified as being correlated with risk of withdrawal. These features include data from three university systems including classroom attendance, VLE engagement data and module outcomes.

Predictive Model

The model itself is made up of six 'constituent' models, each configured to suite the group of features it is evaluating. Six years' worth of historic data is used to identify patterns of behaviour and apply this to current students to product a risk 'score', per student, based on their current engagement and features relative to their cohort.

The predictive tools in Alteryx allow is to quickly prototype models and evaluate them against each other whilst still maintaining full control of the data. **No black boxes!**

PAD
AND THE
PATs
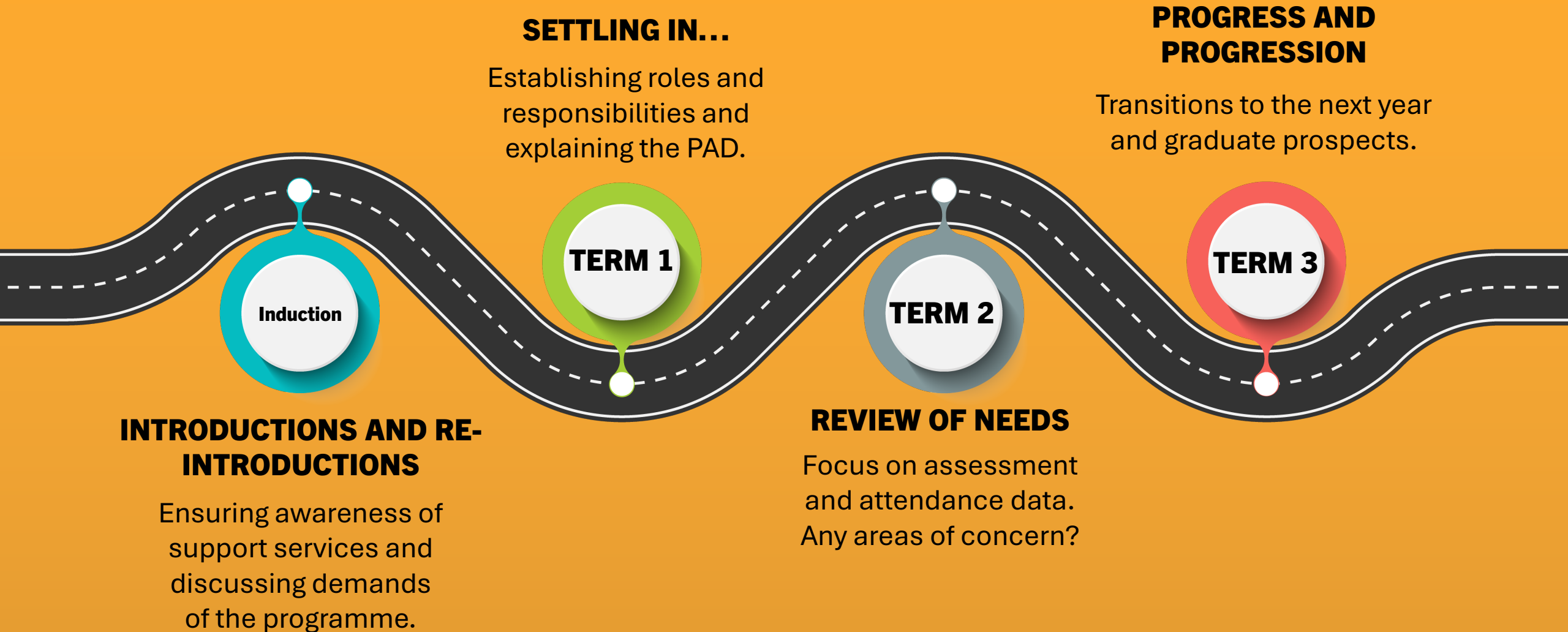
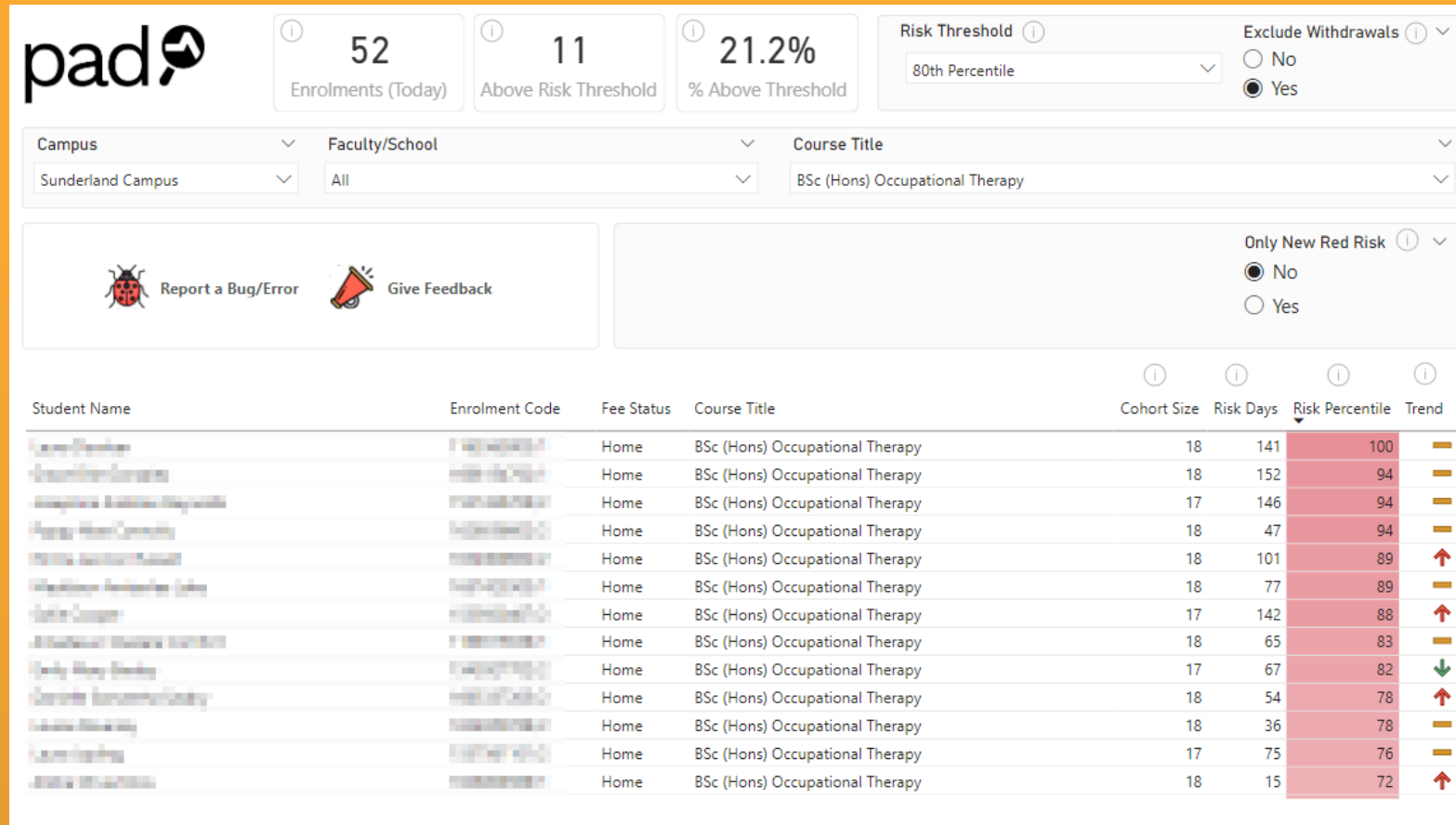# THE DASHBOARD — Using PAD

Power BI

A report and dashboarding tool used to visualise the data model and show students ranked based on their risk score, relative to their cohort.

pad🔍

Risk Threshold ⓘ

80th Percentile ⌄

Exclude Withdrawals ⓘ ⌄
- ○ No
- ◉ Yes

Campus ⌄	Faculty/School ⌄	Course Title ⌄
Sunderland Campus ⌄	All ⌄	BSc (Hons) Occupational Therapy ⌄

🐞 Report a Bug/Error   📣 Give Feedback

Only New Red Risk ⓘ ⌄
- ◉ No
- ○ Yes

Student Name	Enrolment Code	Fee Status	Course Title	Cohort Size	Risk Days	Risk Percentile	Trend
		Home	BSc (Hons) Occupational Therapy	18	141	100	▬
		Home	BSc (Hons) Occupational Therapy	18	152	94	▬
		Home	BSc (Hons) Occupational Therapy	17	146	94	▬
		Home	BSc (Hons) Occupational Therapy	18	47	94	▬
		Home	BSc (Hons) Occupational Therapy	18	101	89	↑
		Home	BSc (Hons) Occupational Therapy	18	77	89	▬
		Home	BSc (Hons) Occupational Therapy	17	142	88	↑
		Home	BSc (Hons) Occupational Therapy	18	65	83	▬
		Home	BSc (Hons) Occupational Therapy	17	67	82	↓
		Home	BSc (Hons) Occupational Therapy	18	54	78	↑
		Home	BSc (Hons) Occupational Therapy	18	36	78	▬
		Home	BSc (Hons) Occupational Therapy	17	75	76	▬
		Home	BSc (Hons) Occupational Therapy	18	15	72	↑

pad

Risk Timeline ⓘ   Percentile Example ⓘ

● Cohort Median Score ● Cohort 80th Percentile ● 90 ● 95 ● 98 ● Weighted Score ● Risk Days

Score

0.6

0.5

0.4

0.3

0.2

Sep 2023   Nov 2023   Jan 2024   Mar 2024

date

14%	14%	7%	21%	20%	24%
ⓘ **0.17**	**0.24**	**0.53**	**0.71**	**0.14**	**0.15**
Demographics	Enrolment	Quals	TDS	Canvas	Module
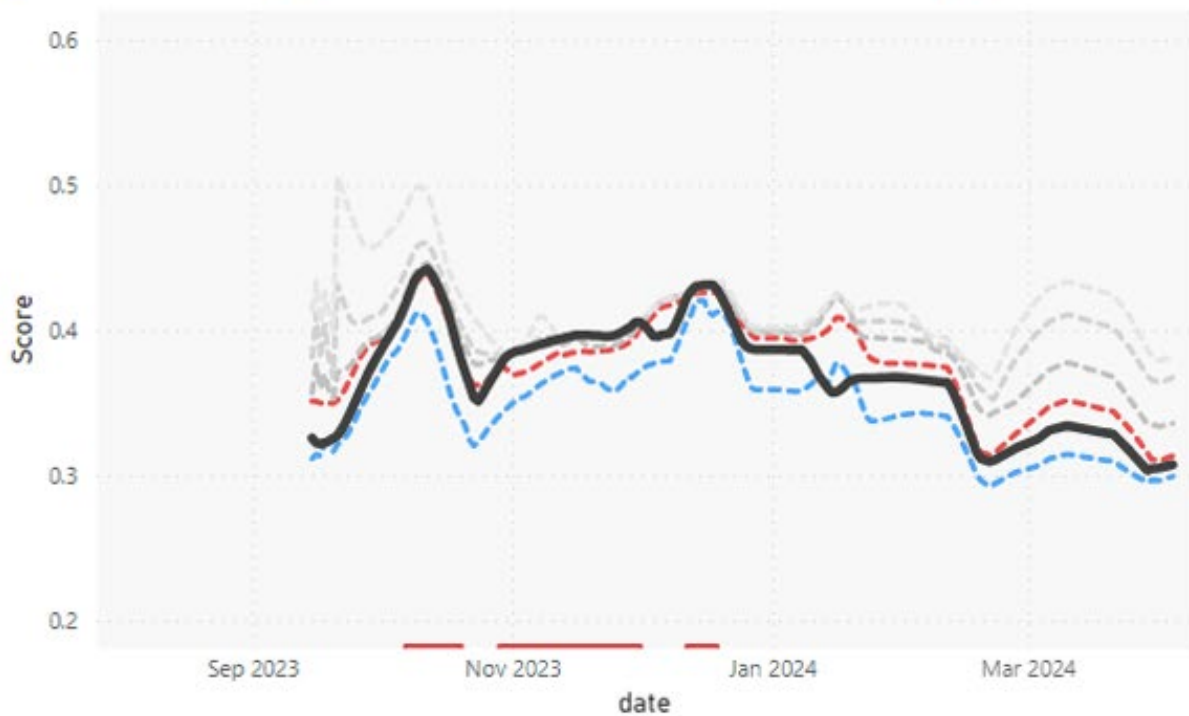
worse than cohort average ———————————— better than cohort average ⓘ

Not Withdrawn
Current Status

Low Risk
Current Risk Status

54	61	18
Days Above Threshold	Percentile Rank	Cohort Size

(PAD)   (£)   (🧭)

Cohorts

Course Code	Title	Block	Intake	Cohort Size
BOCCTHRFT	BSc (Hons) Occupational Therapy	1	September	18
Total				**18**

QUALITATIVE INSIGHTS

Health Education England Project

- This project aimed to interview pre-registration nursing students to better understand the barriers affecting their success.

- Using the Predictive Analytic Dashboard as a method of recruitment.

- Highest 20% of a student cohort in terms of risk of withdrawal.

- Aimed to interview pre-registration nursing students to better understand the barriers affecting their progress.

- This would allow us as PATs to consider changes and developments to enhance retention and success.

- Also aimed to explore useful areas to feed back into the PAD for future development (It didn't!)

Health Education England Project

Three challenging areas identified

⬡ Challenges with academic skills

⬡ Assessment and feedback

⬡ Experiences of Leave of Absence

PROACTIVE SOLUTIONS

Targeted Interventions

Challenges with academic skills:

1. Study skills evaluation:

- Surveyed students about specific study skills requirements and difficult areas of the curriculum students.

- Provided enhanced academic support in this area.

- Low engagement so this is under review to be integrated into curriculum to increase uptake.

2. Studiosity Journal Club:

- Introducing a journal club (Sept 24) which is integrated into the curriculum and utilising Studiosity.

3. SpLD screening:

- Identifying students with possible SpLD on enrolment to establish early intervention and adjustments

**Assessment and feedback:**

Assessment transformation programme:

- Review of the assessment and feedback processes.

- This provides students with more consistent, comprehensive and transparent feedback.

Experiences of Leave of Absence:

Leave of absence:

- Across the Faculty. Mixed methods survey to explore experiences of taking a leave of absence at all the stages.

- Successful completion of programmes after taking a leave of absence was approximately 30%.

- Recommendations to change our current Leave of Absence policy.
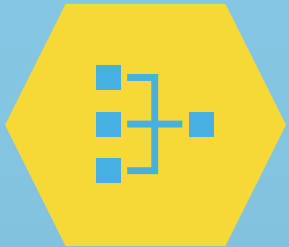
- Pilot of this new process Sept 24.

Evaluation
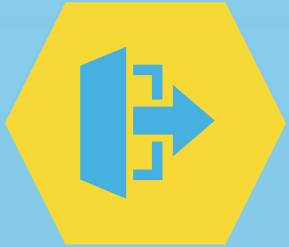
Retention
Percentage pass at all stages of the programme has increased by between 4.8 - 6%

Attainment
Average module marks have increased by up to 15% in some areas.

Outcomes for Students with a Disability
7.7% increase in average mark and 23.1% increase in overall students passing.

First Time Pass
15% uplift in first time pass rates and 5% uplift in attainment in submissions to module ***
(Sept 2023-Dec 2023)

ALL
TOGETHER
NOW

All Together Now

Advantages of Data
Universities hold vast amounts of data on their students, and using this data to identify students at risk at withdrawal is a 'no brainer'.

Limits of Data
Data can only tell you so much – data quality is a challenge for all institutions. Even when the data is in good order, it's still only part of the story. PAD is a tool to help PATs see through the 'noise' and identify students most at risk.

PAD and PATs
PATs and similar roles add the missing link to connect the data to a student's journey. The contextual, qualitative knowledge of the PATs is what allows support to be put in place and interventions made.