# The ABLE project: How do we put what we have learnt from learning analytics into practice

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# Learning Analytics

- Use of institutional data sets to develop an understanding about outcomes for individual students or groups

- Potentially, learning analytics can alert staff and students to the risks of a student dropping out early, or under-performing

- For me, analyics must be action oriented

- Learning analytics is only as useful as the action it instigates

- Other uses
  - Making MOOCs more appealing
  - Curriculum design
  - Testing the efficacy of learning and teaching strategies/ interventions
  - Fascinating insight into computing departments

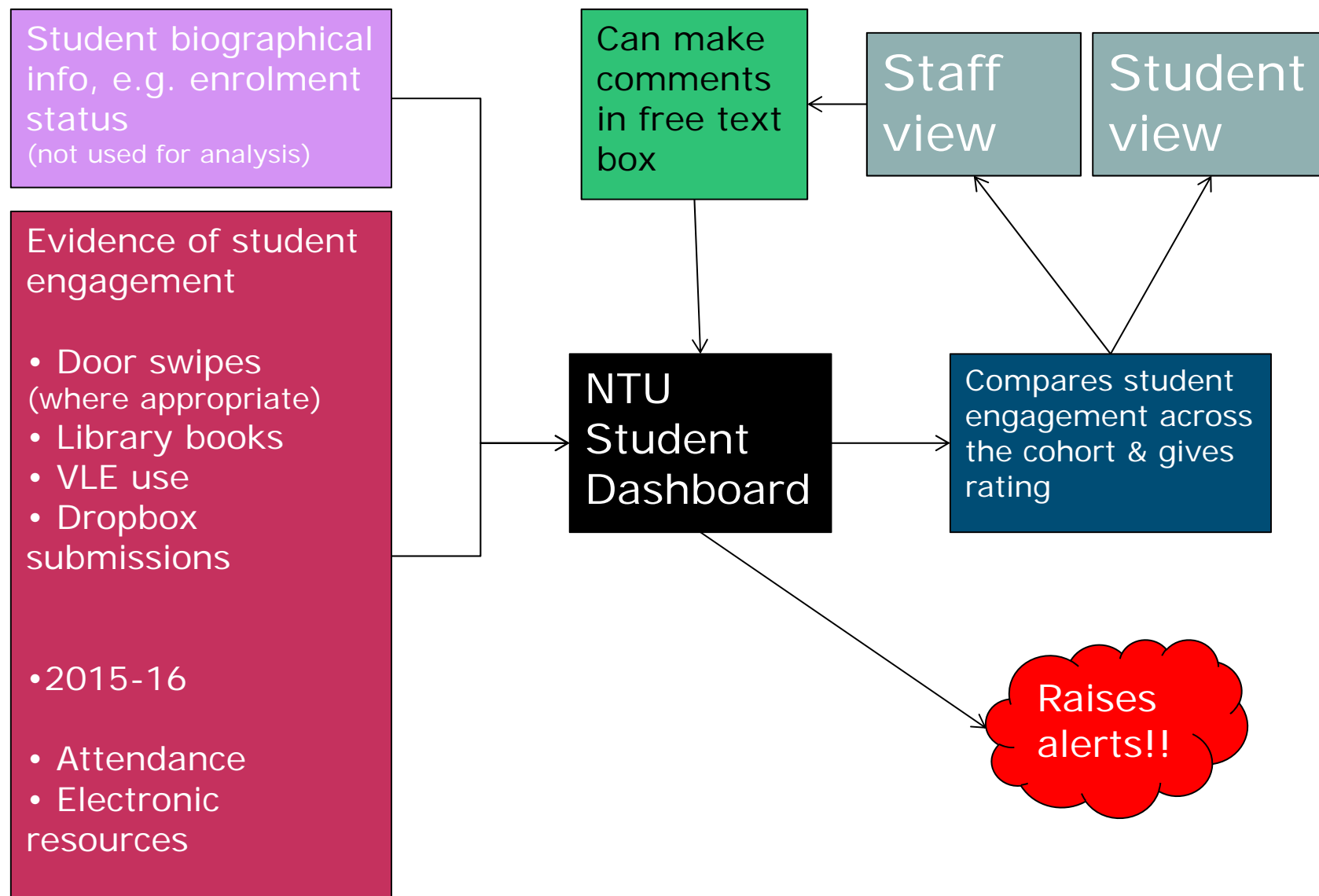# What have we learnt about learning analytics at NTU?

- Going to talk from the perspective of the NTU Student Dashboard
  - Learning analytics resource

- Context
  - Building on solid foundations
    - Quality management process
    - Strategy of moving towards institutional data warehouse with management reporting
    - Extensive use of surveys including effective dry runs for the NSS

- Dashboard development came from 3 drivers
  - What Works? Student Retention & Success
  - Internal audit
  - Information Systems strategy of engaging suppliers in a dialogue about developing Learning Analytics

# What did we set out to achieve?

| Goal | Individual learner |
|------|--------------------|
| • Improve retention | Early warning alerts to tutors<br>Enable students to benchmark own engagement |
| • Improve sense of belonging/ engagement | Notes facility to agree action plans, record meetings<br>Tool for interaction between tutor & student |
| • Improve attainment | Benchmark engagement & see positive behaviours<br>Students can see own grades and feedback |

- Data for analysis by cohort
- Improving University systems
- Character references & other potential data sharing

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# How does the dashboard work?

**Student biographical info, e.g. enrolment status**
(not used for analysis)

**Evidence of student engagement**

- Door swipes
(where appropriate)
- Library books
- VLE use
- Dropbox submissions

- 2015-16

- Attendance
- Electronic resources

**Can make comments in free text box**

**Staff view**

**Student view**

**NTU Student Dashboard**

**Compares student engagement across the cohort & gives rating**

**Raises alerts!!**

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# Staff log in
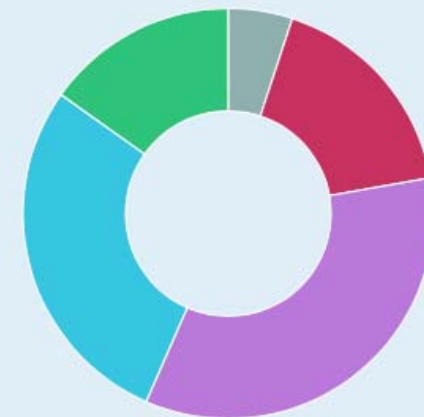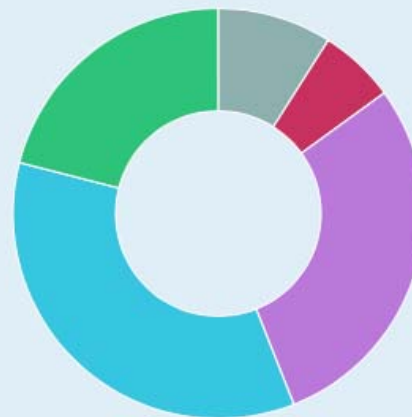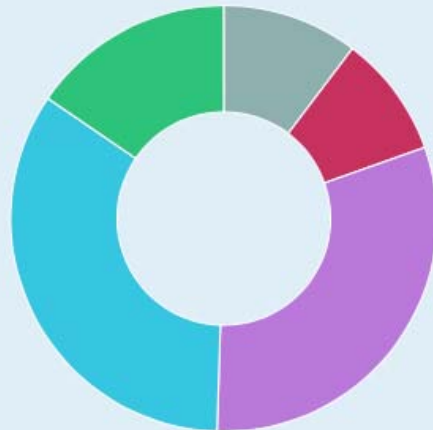
# Cumulative view of student engagement
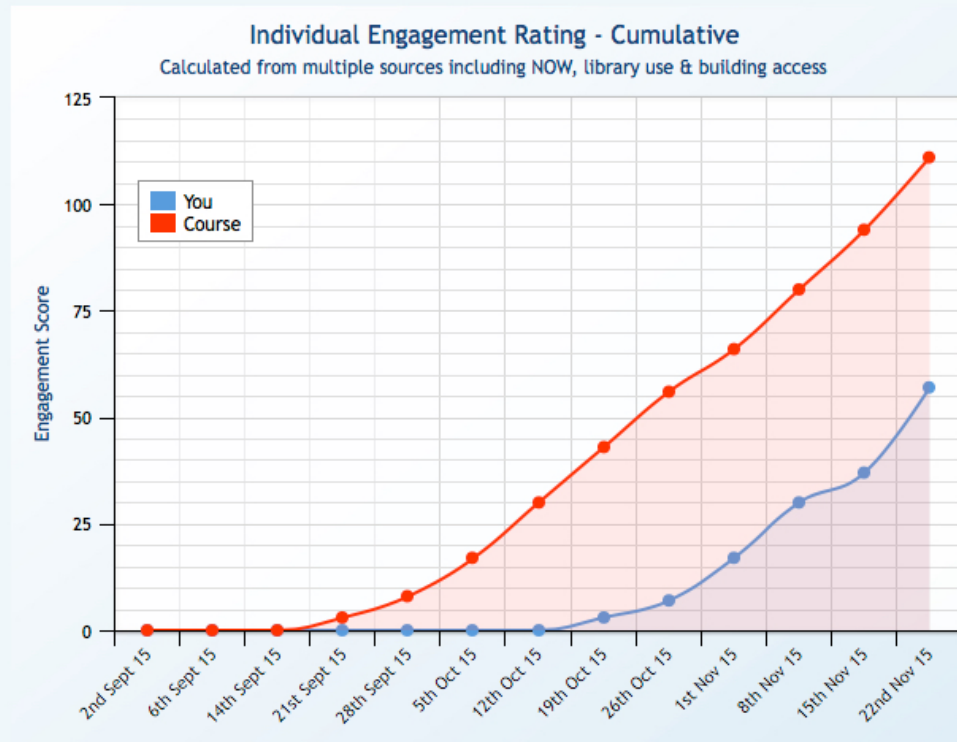
# Week by Week Engagement



**Individual Engagement Score - Week by Week**

Calculated from multiple sources including NOW, library use & building access
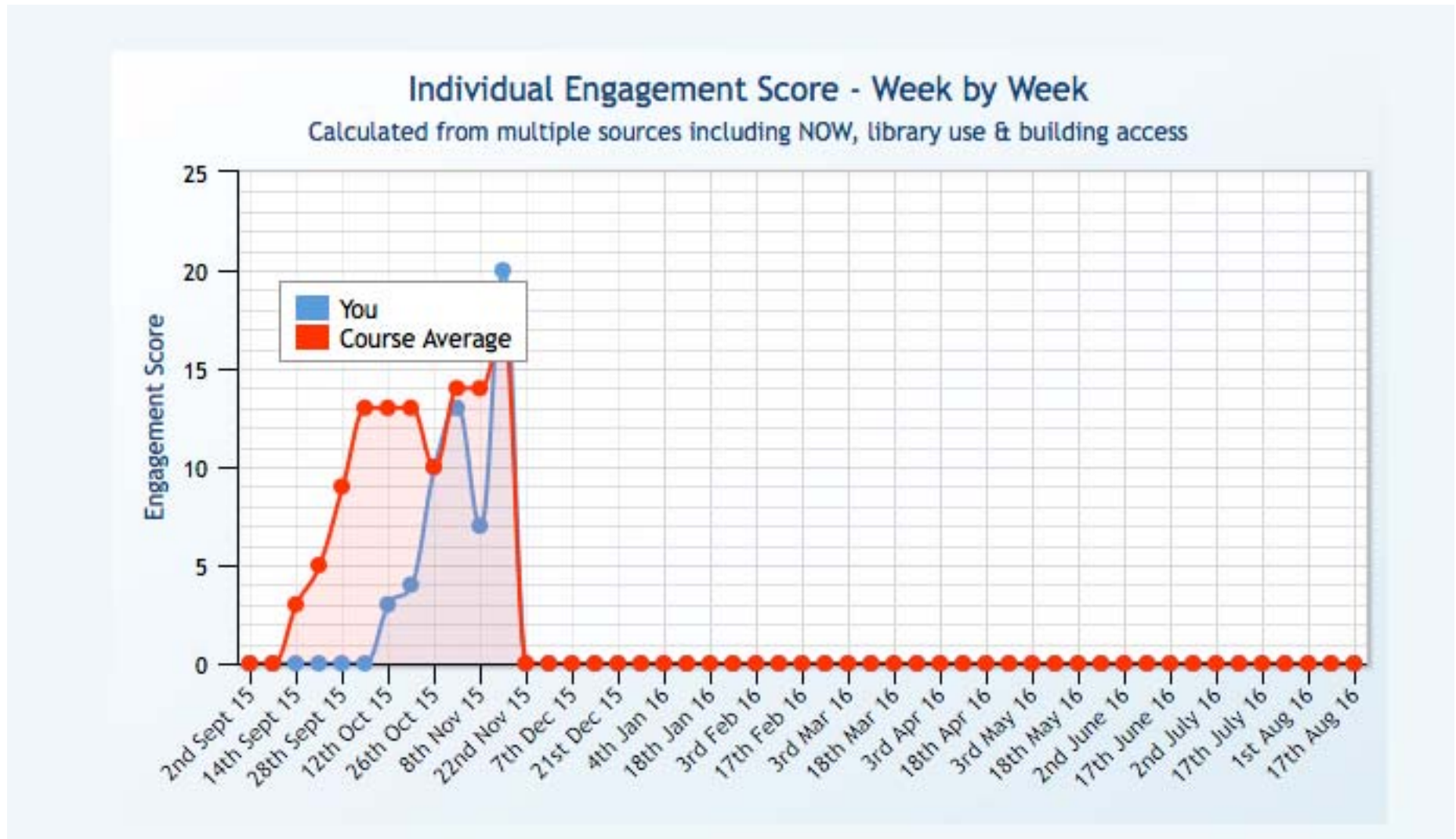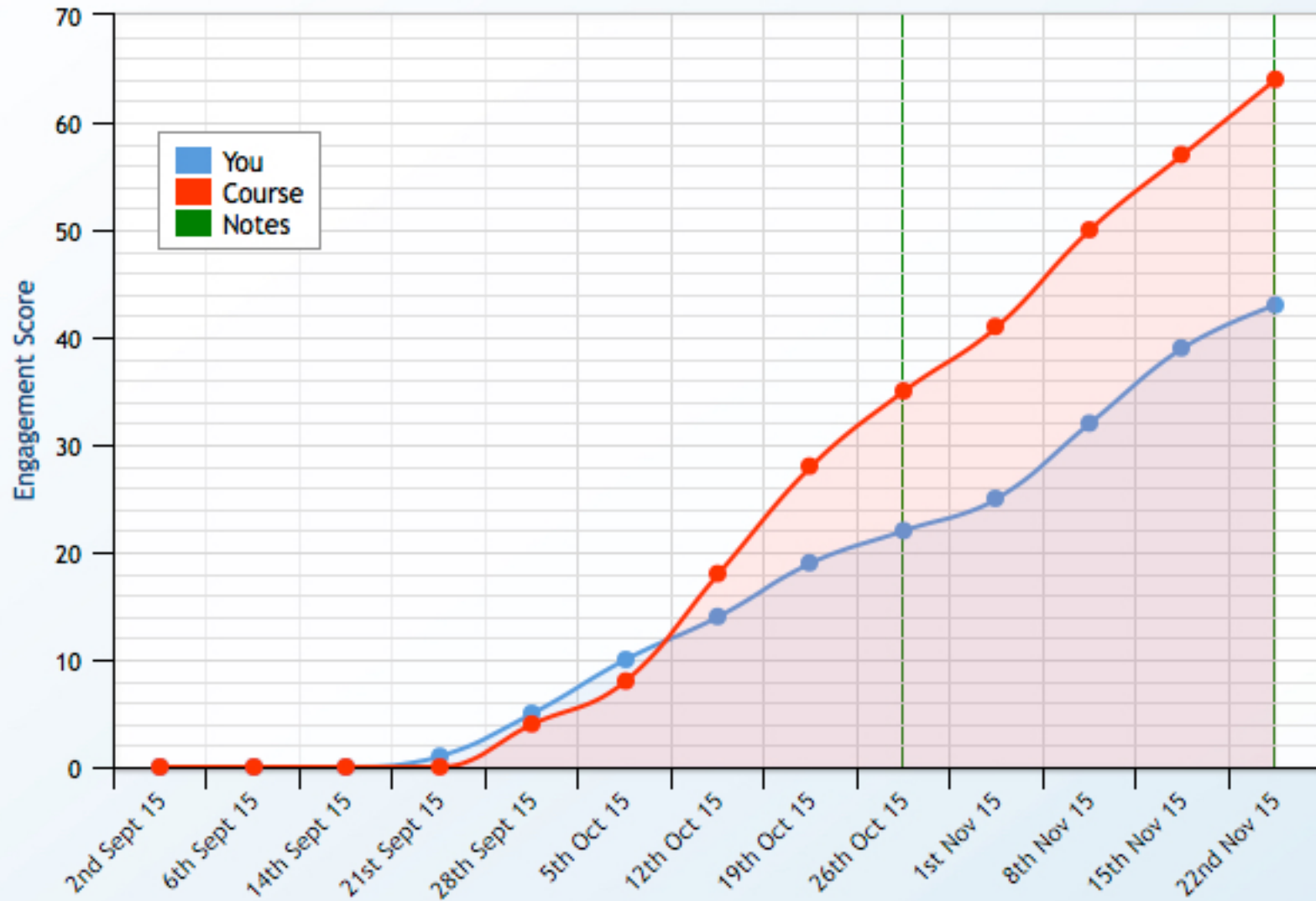
# Individual Engagement Rating - Cumulative
## Calculated from multiple sources including NOW, library use & building access

Engagement Score

Legend:
- You
- Course
- Notes

X-axis: 2nd Sept 15, 6th Sept 15, 14th Sept 15, 21st Sept 15, 28th Sept 15, 5th Oct 15, 12th Oct 15, 19th Oct 15, 26th Oct 15, 1st Nov 15, 8th Nov 15, 15th Nov 15, 22nd Nov 15

**Engagement for past 5 days**

ast 5 days

| good | partial | partial | partial | good |
|------|---------|---------|---------|------|
| 13 Sep | 14 Sep | 15 Sep | 16 Sep | 17 Sep |

**Explanation of engagement ratings**

What the engagement ratings mean ?

**High** — High engagement means that in the last few days you've been frequently using University resources such as NOW or the library.

**Good** — Good engagement means that you are regularly using University resources, for example swiping into academic buildings.

**Partial** — Partial engagement means that you are using resources, but not as frequently as those with higher engagement ratings. For example you might be logging in to NOW, but not visiting the library or using your student card to swipe into buildings.

**Low** — Low engagement means that you are only infrequently using University resources.

**NFE** — Not Fully Enrolled is a category that is only used to describe students who have not completed enrolment at the start of the year or who have left early.

**Advice about what to do to improve engagement**

Research at NTU shows that students with higher engagement ratings tend to be more successful at their studies.

**Find out more**

There are many things you can do to improve your engagement rating.

**Find out how**

Profile | Notes | Attendance | NOW Usage | Library Usage | Campus Access

## Profile Information

| | | | |
|---|---|---|---|
| **Student ID** | | **Course Year** | 3 |
| **Gender** | M | **Tutor Name** | |
| **Entry Age** | 18 | **Enrolment Status** | Temporarily enrolled |
| **Disability Access Stmt** | No | **Repeating** | Not Repeating |
| **Engagement Rating** | good | **NTU Email** | @ntu.ac.uk |
| **UCAS Tariff** | 380 | **Home Email** | @yahoo.co.uk |
| **Study Mode** | Full-Time | **Mobile** | |
| **Course** | BA(H) Print Journalism FT | | |

## Entry Qualifications

| Year of Award | Qualification | Subject | Grade | Tariff Value | Tariff Value Ranking |
|---|---|---|---|---|---|
| 2013 | BTEC Extend Dip Ntnl Dip 180+ | Creative+Media | D*DD | 380 | 1 |

Evidence of changes in student engagement & institutional working practices

# Dashboard Impact: Students

- 27% of students reported that they had changed their behaviour in response to the data provided by the Dashboard

"**Increased my attendance** and told someone if I will be late or not attending. Also more use of the library."

"**Attending more** lectures and seminars to increase my performance chart from satisfactory to high. "

"**Accessed more material on NOW** and **using library more** frequently"
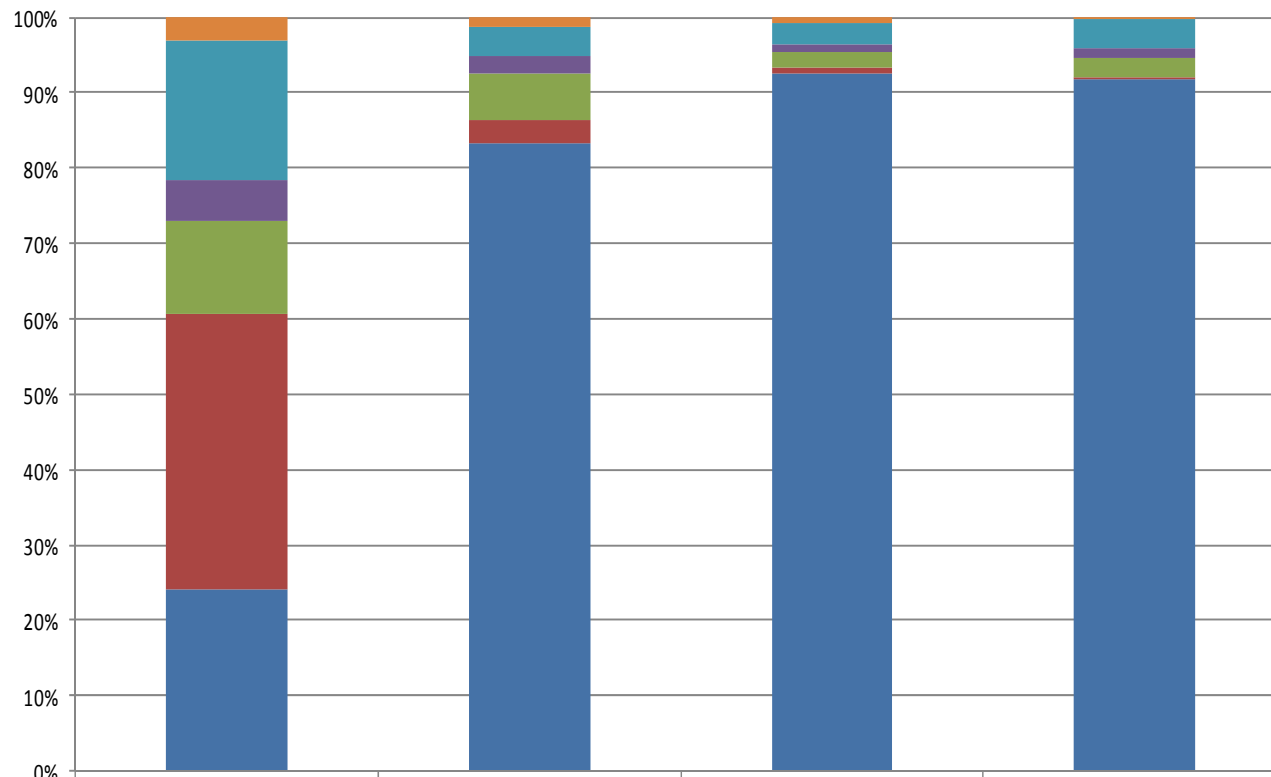
"Become **more engaged** with the NOW so it shows high engagement rating, and so I'm higher than the class average."

Also seen competition between peers & Dashboard appearing in student culture

# Relationship between average engagement & progression
## 1st year students only 23rd Sept 2013 – 6th June 2014

**Progression status by engagement rating (year 1 full time UG students)**



| | Low engagement | Satisfactory engagement | Good engagement | High engagement |
|---|---|---|---|---|
| ■ Other (n=76) | 3.1% | 1.2% | 0.7% | 0.2% |
| ■ Withdrawn (n=310) | 18.5% | 4.0% | 2.8% | 4.0% |
| ■ Transfer (n=143) | 5.3% | 2.2% | 1.1% | 1.3% |
| ■ Repeating (n=364) | 12.4% | 6.2% | 2.0% | 2.5% |
| ■ Academic failure (n=281) | 36.5% | 3.1% | 0.8% | 0.4% |
| ■ Progressed (n=5,836) | 24.2% | 83.4% | 92.5% | 91.7% |

# Impact of average engagement on attainment (Final year students Sept 2013-June 2014)

**Final degree awards by engagement classification**
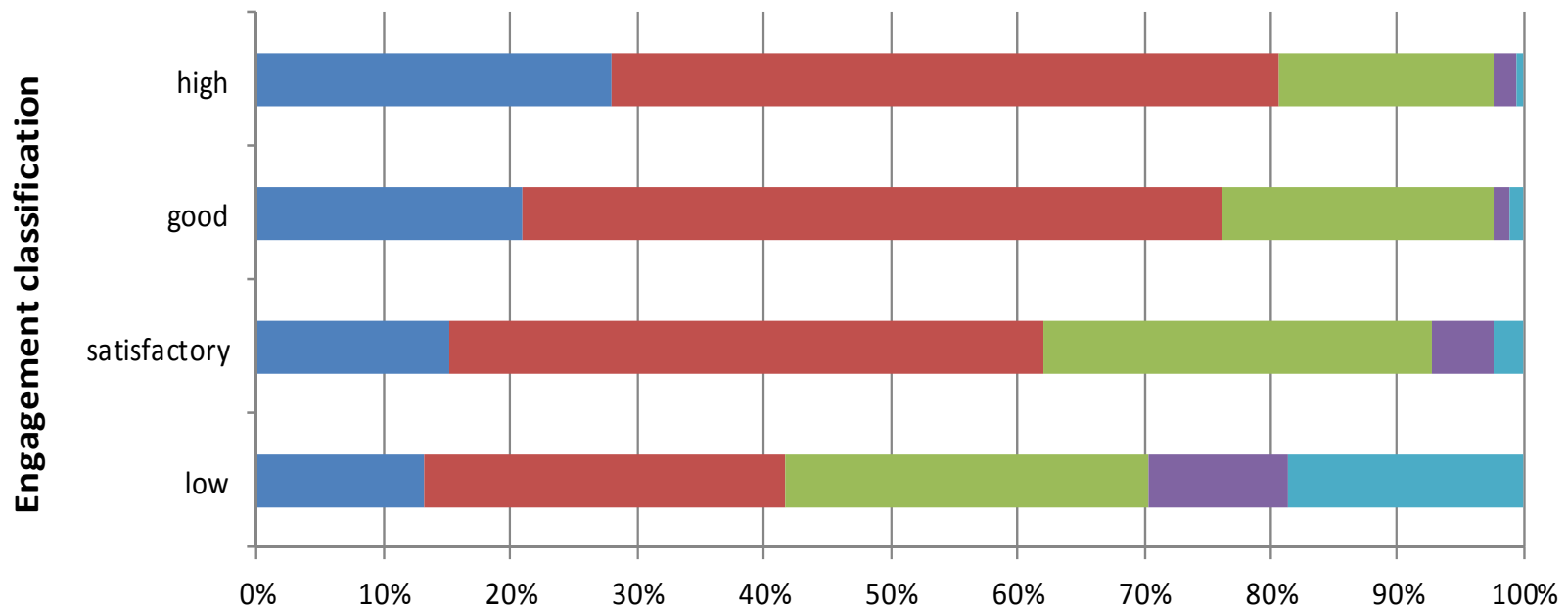
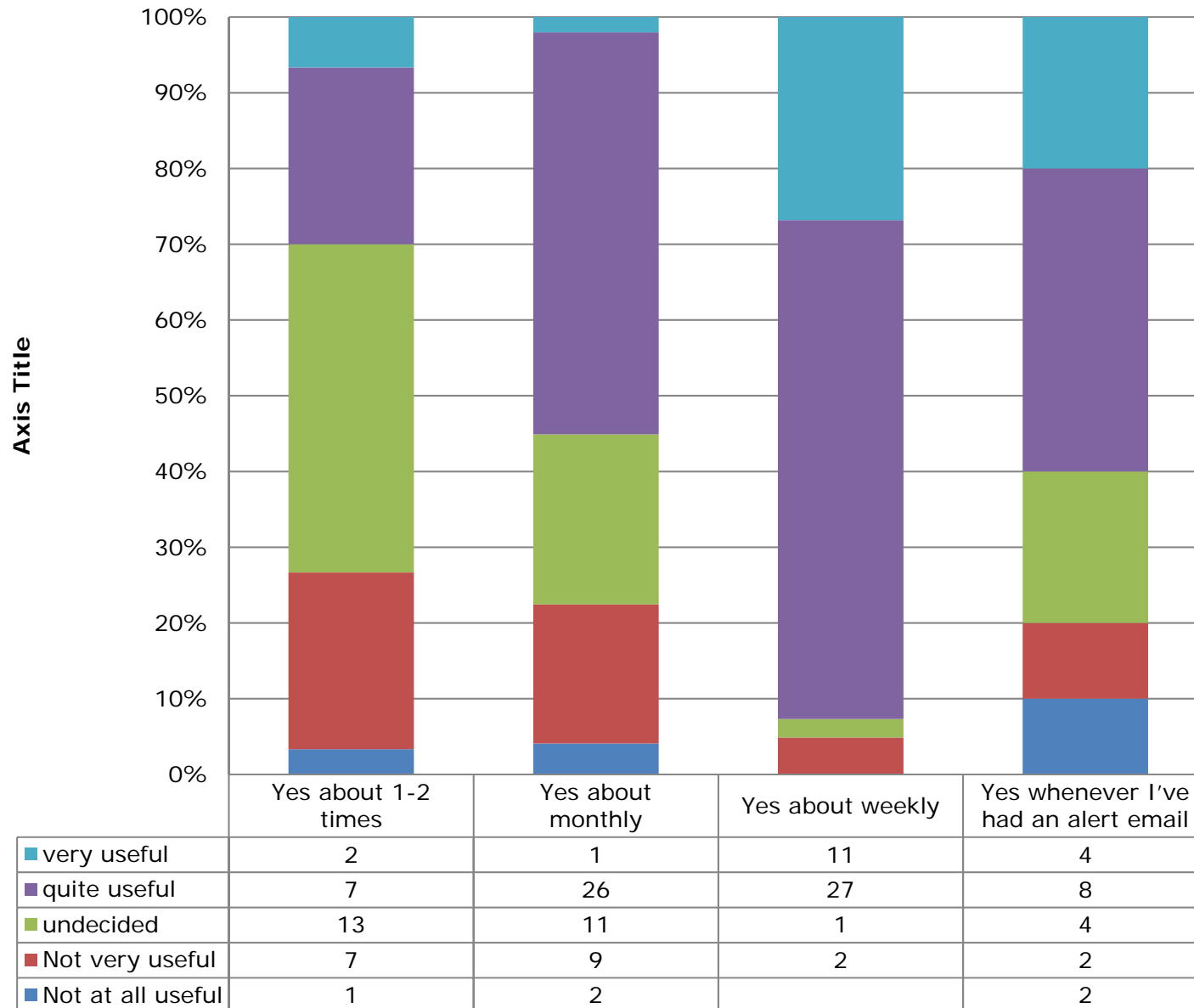|  | low | satisfactory | good | high |
|---|---|---|---|---|
| ■ 1st Class Honours | 13.2% | 15.2% | 20.9% | 28.0% |
| ■ 2nd Class Honours-1st Division | 28.6% | 47.0% | 55.2% | 52.5% |
| ■ 2nd Class Honours-2nd Division | 28.6% | 30.5% | 21.5% | 17.0% |
| ■ 3rd Class Honours | 11.0% | 4.9% | 1.4% | 1.8% |
| ■ Other - Ordinary Degree | 18.7% | 2.4% | 1.1% | 0.6% |

# Dashboard impact: Tutors

- Started to see changes to tutor behaviours

- In the pilot survey 80% felt that the data provided by the Dashboard changed how they worked with students

[The Dashboard] "enabled me to **view a better profile** of the student and **target interaction** accordingly"

"It gives me a **quick picture** of my tutorial group, which will **help support** them, and track their progress."

"As I knew which **students** were **not engaging** with their course, I could **contact** them. It was **useful to have an email prompt** about what to do and information about how to contact the students."

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# Relationship between Dashboard use and staff perceptions of usefulness (n=140) Survey conducted summer 2015



| | Yes about 1-2 times | Yes about monthly | Yes about weekly | Yes whenever I've had an alert email |
|---|---|---|---|---|
| ■ very useful | 2 | 1 | 11 | 4 |
| ■ quite useful | 7 | 26 | 27 | 8 |
| ■ undecided | 13 | 11 | 1 | 4 |
| ■ Not very useful | 7 | 9 | 2 | 2 |
| ■ Not at all useful | 1 | 2 | | 2 |

Changing trajectories

# The ABLE Project (2015-2018)

- We don't yet know if we've changed student outcomes

- The ABLE Project is in partnership with KU Leuven and U Leiden
  - Exploring transition into the first year
  - The other two partners will be building learning analytics resources
  - Testing what strategies work to change student outcomes

# Where will we focus?

**Within the Dashboard**

Notes?
Layout?
Advice?
Alerts?

**Tutoring & advice giving**

Training?
Standardised strategies?
Mentoring?
Goal setting?

**Institutional support systems**

Links to study support?
Links to student support services?

**Other research**

More analysis of the data
Associations between Dashboard use & engagement

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# Exploiting the data provided by learning analytics

- We are confident that the Dashboard delivers accurate timely data to staff and students

- We can confidently say that it changes student behaviours, but requires much further research to understand scale and depth of change

- We are working on the point where we have identified a problem
  - What interventions work?
  - & for which students?

- NTU Leading an Erasmus+ project to investigate effective interventions (we are recruiting)

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