

Onwards from Learning Analytics (OfLA). (2020). 09 – Evaluation of the second cycle of studies: NTU Mid-term reviews Appendix.

Appendix 1: Example evaluation for the mid-term review – Term 1, 2019/20

This is an example of the type of evaluation that is sent to the school for the mid-term review. In the document sent to the school, the analysis will typically also include second year, final year and post-graduate students.

Evaluation for the mid-term review for [name of school] – Term 1, 2019/20

Executive summary

The data contained in this document demonstrates the relationship between student outcomes and their percentage attendance and engagement during last year's term 1 mid-term review period. This is to help inform the identification of potentially 'at-risk' students during this year's review.

Students with high attendance and high engagement are more likely to progress and achieve higher grades than their peers with lower attendance and engagement. Note that attendance data can sometimes be very limited (where only a small number of sessions have been monitored) whereas engagement data is produced for every day a student is enrolled. For this reason, we would suggest using only engagement data only or a combination of the two data sources rather than relying solely upon attendance data.

Introduction

Mid-term reviews are designed to be a systematic way that schools can proactively offer support to potentially at-risk students.

The NTU Student Dashboard generates 'engagement' data for each individual student based on their activities within the University (such as library book loans, attendance, logging into NOW), and this data has consistently been shown to be an effective indicator of student progression¹ and attainment within NTU².

This report provides further information about the Dashboard data that is specific to your school³ in order to support the mid-term reviews and is to be used *alongside* staff members' own experiences of the student to ascertain whether the student is demonstrating 'at-risk' behaviour.

The data provided in this report shows student outcomes for previous cohorts of students based on their attendance and engagement behaviour over a similar timeframe last year. The data has been provided by the Student Engagement Team within CenSCE and is taken from the NTU Student Dashboard and from Cognos. The aim of providing this data is to help create a data-informed view of what could be considered at-risk behaviour within your school context.

¹ Please note that progression as referred to here is an internal NTU metric that is different from the non-continuation metric used by the sector. Progression here refers to progressing into the next year of study (or in the case of final years, completion of the course).

² In 2016-17, for example, 95% of students with High engagement for the first year progressed to the second year, whereas less than 16% of students with Very Low engagement progressed ([NTU Student Dashboard User Guide](#)).

³ The data range, for example, has been selected by your school.

Monitoring and acting on this information in term 1 maximises the opportunity to contact students and offer any necessary support. It is a process that is supported by the majority of students: in the 2017 Student Transition Survey⁴ 97 % of students thought that the University should contact a student if NTU felt that it could improve a student's chances of progressing.

Further information about the NTU Student Dashboard can be found in the FAQ page of the Dashboard and in the [NOW Technology Central learning room](#) (which contains, for example, Staff and Student User Guides and a guide to understanding the Dashboard data).

Methodology

Students engagement and attendance data provided for the term 1 mid-term review in 018/19 has been analysed to ascertain the relationship between these data sources and student outcomes. In 2018/19, the term 1 mid-term review reporting period was Monday 1st Oct and Sunday 4th Nov (inclusive).

The analysis below shows outcomes for all full-time students who were temporarily-, conditionally- or fully-enrolled at the time of the last mid-term review, split into year groups. Note that final year students includes students on both three-year full-time and four-year sandwich courses.

Outcomes data has been split into students who failed to progress to their next year of study, and those who progressed with marks equivalent to either a 2:2 or lower grade degree or a 2:1 or first class degree. Student attainment has been calculated based on scores recorded in the Cognos individual enrolment file.

Engagement data is presented based upon the percentage of days students spent with Very Low or Low engagement. The lower the percentage of days with Very Low or Low engagement, the higher a student's engagement was. In this report, the data has been ordered from highest to lowest engagement *or* least to most percentage time with Very Low and Low engagement (0-20% of days with Very Low and Low engagement to 80-100% of days with Very Low and Low engagement)

Summary of student outcomes

Overall student outcomes are different across different year groups (regardless of attendance and engagement). Percentage progression and the proportion of students achieving grades equivalent to a 2:1 or 1st class degree both increase from first to second to final year student (table 1).

Table 1: Student outcomes for all full-time undergraduate first, second and final year students in 2018/19

Student group	Percentage of students progressing	Percentage of students progressing and getting a grade equivalent to a 2:1 or 1 st class degree
First year	88%	42%
Second year	92%	51%
Final year	96%	65%

⁴ An online survey sent to all NTU first-year students (n=753, ~10 % response rate) as reported in the ABLE Achieving Benefits from LLearning analytics [Project Case Study 3 – Mid Term Reviews](#).

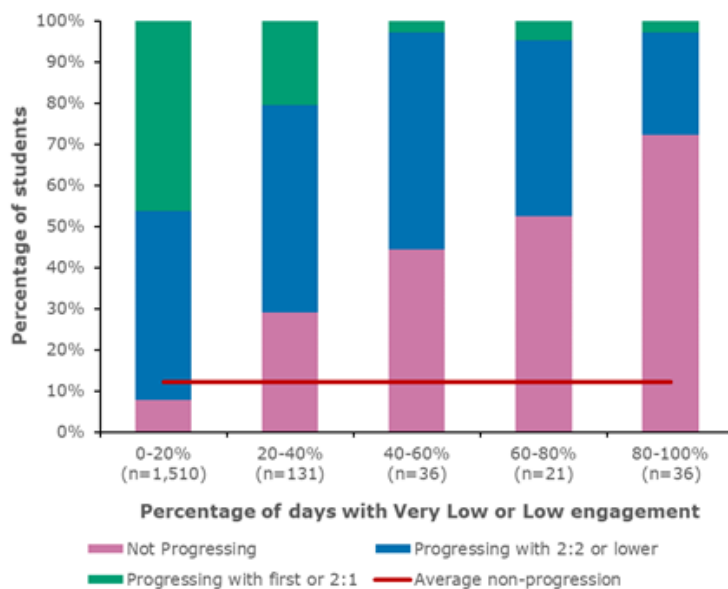
It may be appropriate to set different boundaries for who to contact for different year groups, to reflect that fact that student outcomes are different. It may also be appropriate to set different boundaries for different levels (undergraduate/postgraduate) to reflect the different age and higher education experience of the students, and different modes of study.

Results for different student cohorts⁵

First year undergraduate students

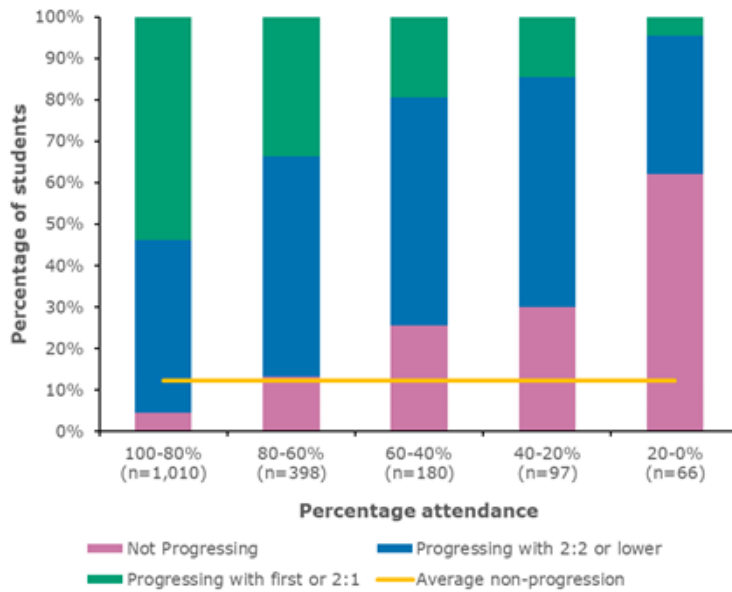
The following graphs show first year student outcomes based on their engagement and attendance data provided in the 2018/19 mid-term review. It is evident that as both attendance and engagement increase, the proportion of students progressing increases. Furthermore, as attendance and engagement increase, the proportion of students achieving grades equivalent to a 2:1 or 1st class degree increase.

Engagement – First year, full-time undergraduates in the school



⁵

Attendance – First year, full-time undergraduates in the school



The chart below shows the relationship between student progression and attendance and engagement for first year students. It shows how the two data sources can be used in conjunction with one another. For example, students with 80-60 % attendance and 0-20% of their time with Very Low or Low engagement had better outcomes (89% progression) than their peers with the same attendance but higher proportions of time with Very Low or Low engagement (67% and 60% progression for students with 20-40% and 40-60% of their days with Very Low and Low engagement respectively).

Percentage attendance	Percentage days with Very Low or Low engagement				
	0-20%	20-40%	40-60%	60-80%	80-100%
100-80%	96%	95%			
80-60%	89%	67%	60%		
60-40%	80%	60%	50%	60%	
40-20%	80%	59%	56%	60%	
20-0%	100%	50%	56%	36%	21%

Appendix 2: Quartile calculation

Prior to using quartile data, the subsequent progression of students by engagement quartile was calculated using 2018/19 data for first year undergraduate students within school 1 in order to test whether dividing this data in this way would allow us to identify those students that were least likely to progress to the next year.

This was done because a weighted average calculation was used in order to divide the students into four quartiles. A weighted average assumes a linear relationship between the engagement ratings (that Partial is twice the value of Low, and Good is three times the value of Low), which isn't the case, so checking that there is a relationship between weighted average and progression allowed us to be confident that we could effectively use the lower quartile as a trigger to contact students.

Weighted average calculation

The weighted average was calculated as follows:

Engagement rating	Weighting for average	Count of days in a particular engagement category	Code for formula
Very Low	0	Days spent with Very Low engagement	a
Low	1	Days spent with Low engagement	b
Partial	2	Days spent with Partial engagement	c
Good	3	Days spent with Good engagement	d
High	4	Days spent with High engagement	e

Total number of days with engagement data = sum of number of days spent in each engagement category = **a + b + c + d + e**

$$\text{Weighted average} = \frac{((0 \times a) + (1 \times b) + (2 \times c) + (3 \times d) + (4 \times e))}{(a + b + c + d + e)}$$

For example a student with 10 days of partial engagement and 4 days of good engagement in a fortnight would have a weighted average as follows:

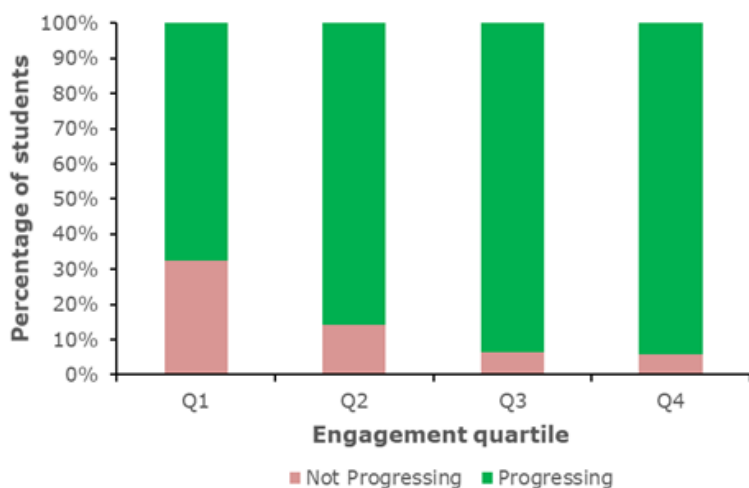
$$\text{Weighted average} = ((2 \times 10) + (3 \times 4)) / (10 + 4) = 32 / 20 = 1.6$$

(ignoring the zeros for the other days, strictly the full calculation is as follows:

Weighted average = $((0 \times 0) + (1 \times 0) + (2 \times 10) + (3 \times 4) + (4 \times 0)) / (0 + 0 + 10 + 4 + 0) = (0 + 0 + 20 + 12 + 0) / 20 = 32 / 20 = 1.6$

As Very Low is coded as 0 and High is coded as 4, the minimum weighted average value possible is 0 (all days Very Low) and maximum weighted average value possible is 4 (all days High).

Progression of students by engagement quartile using 2018/19 data for first year undergraduate students within this school



For 2018/19 the quartile calculations based on weighted average were as follows:

Quartile	Lower weighted average limit	Upper weighted average limit	Percentage of student in quartile
Q1 (lower quartile)	0	2.06	23.5%
Q2	2.06	2.39	25.3%
Q3	2.39	2.70	24.9%
Q4 (upper quartile)	2.70	3.74*	26.3%

*Could have been set to 4 but in reality no one had a weighted average that high

Note that because of the way the weighted averages were spread (multiple students with the same weighted average) it wasn't possible to get exact 25% quartiles)

Appendix 3: Example of data collated for school 2

- Student ID
- First name
- Last name
- Student T4 Flag
- Programme Year
- Clearing Applicant
- Enrolment Status Description
- New/continuing student
- Department name
- Camus description
- Programme Code
- Programme Description
- Programme Level
- Course Mode (Full-time/Part-time)
- Course length 1 year or less
- Transfer student
- Transfer type
- Attendance (for the agreed timeframe)
- Number of sessions attendance recorded for
- Mode engagement (for the agreed timeframe)
- Number of days engagement recorded for
- Student NTU email
- Tutor name
- Tutor ID
- Tutor email

Appendix 4 : Understanding the data document school 1

Understanding the data for the [school 1] mid-term review – Term 1, 2019/20

Introduction:

This document has been circulated to highlight points of consideration when using the mid-term review data to inform the identification of potentially at-risk students.

Considerations for using mid-term review data:

- Attendance and engagement data has been reported for the timeframe Monday 7th Oct 2019 to Sunday 3rd Nov 2019 (academic weeks 11 – 14).
- Data has been reported for undergraduate and postgraduate students studying on campus. Data has not been provided for third year sandwich students (on placement).
- Data has been provided for students who were temporarily-, conditionally- or fully-enrolled in their programme on Monday 4th November 2019.
- Data has been provided for new, continuing and repeating students. Repeating students have been highlighted in the relevant column as these may require further consideration.
- Data has been provided for all courses which are not officially collaborative based on Cognos data, but the School may wish to exclude students on certain courses based on local knowledge of relevant courses.
- Data has not been provided for students studying non-credit bearing courses or apprenticeship courses.
- Please take note of the number of attendance sessions a student's percentage attendance has been calculated based upon, e.g. 100 % of 5 sessions or 80% of 20 sessions. If a student has fewer than 8 sessions recorded during the timeframe, the number of sessions has been highlighted in red to draw attention to this.

NB: Authorised absence is considered as absence when calculating percentage attendance.

- Please also take note of the number of days engagement data has been provided for students, as in a few cases engagement data was not available for every day during the period. If a student has fewer than 8 days of engagement data the number of days has been highlighted in red to draw attention to this.
- Average (median) engagement has been provided for the timeframe. Additional engagement data has been provided for different groups of students:
 - *Undergraduate students* have been grouped into engagement quartiles based on their daily engagement ratings over the timeframe. The bottom quartile (Q1) has been highlighted in red for your attention. The quartiles have been calculated based on the following groups: 1st year UGs, 2nd year UGs, final year (3rd/4th year) UGs.
 - *Postgraduate students* have had the proportion of time they spent with Very Low or Low engagement during the timeframe reported. This latter allows further distinction between students with average engagement of Partial, i.e. those in the group who spent more time with higher or lower than Partial engagement. For PG students with average Partial

engagement in [school 1], the proportion of time a student spent with Very Low or Low engagement ranges between 0 and 46%.

- The enrolment data, tutor mapping information, and engagement data for the report were all accessed on 04/11/2019. Attendance data was accessed on 05/11/2019. Some data, particularly attendance, can change retrospectively (e.g. if a register is completed late).

A special note on attendance data in the Dashboard (taken from Dashboard FAQ section):

Attendance is calculated using the QR code and manual registers for timetabled events.

Attendance will be included in the Dashboard when the attendance is registered, whether the full register is complete or incomplete. This will only be included in the engagement calculation when the attendance is completed in the same day. Where attendance is registered on a separate day, this will not be included within the engagement calculation and will not be displayed on the Attendance page until after the weekend, when the attendance connector will look back over the past 30 days and pick up the attendance missed in the overnight processing.

More reporting on Attendance can be found in Cognos [Cognos Attendance](#).

Appendix 5: Understanding the data document School 2

Understanding the data for the [School 2] mid-term review – Term 1, 2019/20

Introduction:

Three documents are provided with the mid-term review data:

1. An Excel file containing data at an individual student level
2. A PDF containing an analysis of student outcomes in relation to attendance and engagement during last year's mid-term review (group level data)
3. This document describing points to note about the mid-term review data.

This document has been circulated to highlight points of consideration when using the mid-term review data to inform the identification of potentially at-risk students.

Considerations for using mid-term review data:

- Attendance and engagement data has been reported for the timeframe Monday 30th Sept 2019 to Sunday 27th Oct 2019.
- Data has been reported for undergraduate and postgraduate taught students.
- Data has been provided for students who were temporarily-, conditionally- or fully-enrolled in their programme on Monday 28th October 2019.
- Data has been provided for all courses which are not officially collaborative based on Cognos data, but the School may wish to exclude students on certain courses based on local knowledge of relevant courses.
- Please take note of the number of attendance sessions a student's percentage attendance has been calculated based upon, e.g. 100 % of 5 sessions or 80% of 20 sessions. If a student has fewer than 8 sessions recorded during the timeframe the number of sessions has been highlighted in red to draw attention to this.
- Percentage attendance data has been colour coded as follows:
 - 0 – 20 % attendance = Dark red
 - 20 – 40 % attendance = Red
 - 40 – 60 % attendance = Orange
 - 60 – 80 % attendance = Light green
 - 80 – 100 % attendance = Dark green

NB: In this attendance data, authorised absence is considered as absence.

- Please also take note of the number of days engagement data has been provided for students, as in a few cases engagement data was not available for every day during the period. If a student has fewer than 8 days of engagement data the number of days has been highlighted in red to draw attention to this.
- Average (mode) engagement has been provided for the time period for reference, although we recommend focussing on the proportion of time a student has spent with Very Low or Low engagement, as this allows some distinction between the high number of students with average engagement of Partial.
- Engagement data has been colour coded as follows:
 - 60 – 100 % Very Low or Low engagement = Dark red
 - 20 – 60 % Very Low or Low engagement = Orange
 - 0 – 20 % Very Low or Low engagement = Green

NB: this colour coding is based on research that the more time a student spent with Very Low or Low engagement for the equivalent period in 2018/19, the less likely they were to progress or get a grade equivalent to a 2:1 or 1st (see separate analysis file for details).

- The enrolment data, tutor mapping information, and engagement data for the report were all accessed on 28/10/2019. Attendance data was accessed on 31/10/2019. Some data, particularly attendance, can change retrospectively (e.g. in a register is completed late).
- As student names have been removed from Cognos, student names have only been provided where this data is known based on Dashboard data.

A special note on attendance data in the Dashboard (taken from Dashboard FAQ section):

Attendance is calculated using the QR code and manual registers for timetabled events.

Attendance will be included in the Dashboard when the attendance is registered, whether the full register is complete or incomplete. This will only be included in the engagement calculation when the attendance is completed in the same day. Where attendance is registered on a separate day, this will not be included within the engagement calculation and will not be displayed on the Attendance page until after the weekend, when the attendance connector will look back over the past 30 days and pick up the attendance missed in the overnight processing.

More reporting on Attendance can be found in Cognos [Cognos Attendance](#).

Appendix 6: Example from one administrator of their time and resources required in the mid-term review term 1.

The following is an account from one of the administrators about the role that they play in the mid-term review process to illustrate the time and resources that this takes:

- Data is received within the school (via spreadsheet)
- The administrator adds notes to the data spreadsheet (such as whether contact has been made with the student, whether the student is repeating
 - *Administrator time: One day for 1400 students in the term 1 review. This time increases in term 2 because more data is considered.*
- This processed data is then sent to year tutors
- The administrator contacts personal tutors to see if there are any concerns or additional appropriate information about the student that needs to be considered
- The administrator attends meetings for the reviews
- The spreadsheet is updated following the reviews
 - *Administrator time: one day for 1400 students*
- The administrator drafts the communications (emails and letters) to the students
- The administrator sends the communications at the same time so that all students receive them at the same time
 - *Administrator time: one hour*
- The administrator receives student responses and replies where appropriate. Typically, about a third of students respond to the administrator rather than their tutors. In some of these emails are students saying thank you for checking up on them.
- After two weeks, the administrator contacts personal tutors to ask which students have made subsequent contact with them and keeps the spreadsheet updated with this information
- The administrator sends any subsequent escalation communications as needed, and updates records of this.

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