

# Classifying packages of Outreach by their level of intensity

## Proposed methodologies developed using the HEAT Tracking data

This paper sets out the approach taken by the HEAT Service when classifying packages of outreach as more or less intensive, for the purpose of aggregate reporting.

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#### Introduction

The following paper explains the approach taken by the HEAT Service when classifying packages of outreach as more or less intensive. We discuss two different methods which make use of fields available on the database and conclude by combining aspects from these to inform a method that will be used for the purpose of aggregate HEAT Track reporting. The methods are student centred in that they collate information on the range of activities in which a student has participated, in order to understand the student's experience of outreach holistically.

The methods were designed to make use of the existing data held by HEAT, and thus there may be further variables not considered here that might improve the classification of activities as more or less intensive. Results from HEAT's aggregate analyses that incorporate these methods of intensity classification are presented, along with reflections on their limitations.

#### Method 1

The first proposed method is simple and draws only on the HEAT Activity Type field. This is a mandatory field and so is available for all activities recorded on the database.

The algorithm is as follows:

#### Methodology

**Intensive** = 1+<sup>1</sup> Summer school <u>or</u> 1+ Subject Insight <u>or</u> 1+ Mentoring <u>or</u> 2+ Skills & Attainment <u>or</u> 2+ HE Campus Visits <u>or</u> 1+ Skills & Attainment and 1+ HE Campus Visit <u>or</u> 3+ General HE Information/Exhibitions and 1+ Skills & Attainment <u>or</u> 3+ General HE Information /Exhibitions and 1+ HE Campus Visit

**Less Intensive** = All other combinations of Activity Types

**Least Intensive** = A single General HE Information/Exhibition activity

This method has previously been used in HEAT's Higher Education Statistics Agency (HESA) Tracking reports. Results at institution level were mixed, with less intensive outreach packages sometimes producing Higher Education (HE) entry rates. This can be attributed to the selection bias within different packages of activities. For example, more intensive packages are often targeted towards those individuals with the furthest 'distance to travel' in terms of their HE progression.

Aggregate tracking data obtained through the HEAT Track shows that for both **HEAT Group**<sup>2</sup> **1** (high disadvantage, low attaining students) and **HEAT Group 2** (high disadvantaged, high attaining students), those who participated in more intensive packages of outreach demonstrated higher rates of progression to HE (Table 1).

<sup>&</sup>lt;sup>1</sup> '1+' refers to 'one or more'.

<sup>&</sup>lt;sup>2</sup> HEAT Group methodology can be found <u>here</u>.

This analysis restricted the cohort to include only those students who had **first** participated in outreach before the age of 16. This removes students who were already in post 16 education when engaging in outreach and so likely to already be thinking about HE; these students are often overrepresented in low intensity outreach packages.

	All HEAT Groups	All HEAT Groups	HEAT Group 1	HEAT Group 1	HEAT Group 2	HEAT Group 2
Intensity of Activities	Total Tracked Population	% Progressed to HE	Total Tracked Population	% Progressed to HE	Total Tracked Population	% Progressed to HE
Intensive	22,185	41%	4,370	15%	6,585	49%
Less Intensive	10,360	39%	1,885	13%	2,640	46%

Table 1: Progression by Intensity of Activities (only participants who first engaged in outreach before the age of 16)

Source: HEAT Tracked Cohort, HEAT and HESA

#### Limitations of Method 1

The classification of packages as either intensive or less intensive is fairly crude in that it is based on existing practitioner assumptions about the likely intensity of that Activity Type rather than any hard evidence that, for example, a Summer School is more intensive than a Skills & Attainment activity. Method 2 attempts to overcome this limitation by incorporating additional data sources from HEAT such as average student-to-staff ratios across Activity Types.

Furthermore, the approach suggested in Method 1 is based only on the number of activities a student has received and the Types of these activities, it does not consider the number of Contact Hours each activity may involve. For example, one Mentoring activity is, according to Method 1, enough to classify that student as having taken part in an intensive package of outreach. However, this one Mentoring activity may have consisted of anything from a one-off two-hour session to a three-month programme of weekly two-hour sessions. Thus, there may be a large variation in terms of what is being delivered during one mentoring activity as recorded on HEAT. Method 2 aims to overcome this issue by drawing on Contact Hours rather than simple counts of activities.

#### Method 2

The second suggestion is more complex and incorporates the total number of Contact Hours a student has received weighted by Activity Type.<sup>3</sup> The weighting applied to each Contact Hour depends on the Activity Type under which these hours were recorded.

The weightings are as follows:

<sup>&</sup>lt;sup>3</sup> Contact hours are auto-calculated by HEAT, based on the start and end time of the activity but this calculation can be overridden by the User.

#### Table 2: Activity weightings

Activity Type	Weighting
Mentoring	84
Summer School	82
HE Campus Visit	65
HE Subject Insight	54
Skills & Attainment	53
General HE Information	9
Exhibition	8

The weightings shown are based on a sample of historical activity data held on HEAT. The average student-to-staff ratio per Activity Type was calculated and then indexed to provide the weighting scale. The sample included 2,855 activities for which information on the number of students and staff were recorded on HEAT.

#### Methodology

Drawing on Table 2, where a student has received five Contact Hours, made up of two hours of Mentoring and three hours of General HE Information the following calculation was applied: (2\*84) + (3\*9), giving an activity score of 195. Students' activity scores were then divided into quintiles to calculate five intensity levels.

Analysis based on scoring packages of activities in this way was presented at the 2017 HEAT Symposium. Results showed a positive relationship between the intensity of the package of outreach in which a student had participated and progression to HE for HEAT Group 1 (Chart 1), but no such relationship existed for HEAT Group 2 (Chart 2).

For the reasons described above, the population used in this analysis included only those students who first engaged in outreach before the age of 16. Findings from this are being used to explore the hypothesis that high-attaining students require lighter touch, less intensive packages of activities in order to progress to HE than their lowattaining peers.



#### Chart 1: HEAT Group 1 (Low attainment, high disadvantage)





#### **Limitations of Method 2**

The approach taken in Method 2 calculates an intensity score. This score is meaningless to practitioners and thus it is difficult to provide guidelines around the actual composition of what constitutes a more intensive or less intensive package of activities. The approach could be criticised for being highly positivist.

#### Recommendations

- Contact Hours are a more accurate representation of the time a student has spent participating in outreach than a simple count of activities and therefore these should be included where possible.
- Activity scores as used in Method 2 are difficult to translate into guidance for practitioners.
- A combination of Method 1 and 2 may be most appropriate, therefore the following approach will be applied in HEAT's Track reporting.

An approach derived by combining Method 1 and 2:

#### Methodology

**Intensive =** 11+ hours of any activity <u>and</u> eight or more hours of a high intensity activity content (Summer School, HE Subject Insight, Mentoring, Skills & Attainment or HE Campus Visit – based on weightings presented in Table 2).

**Less Intensive =** Less than 11 hours of activity or 11+ hours of activity but with less than eight hours of high intensity content.

**Least Intensive** = One activity with low intensity content (General HE Information or Exhibition) only <u>or</u> less than three hours received overall.

Eleven Contact Hours has been selected as the minimum number to qualify as an intensive package based on the analysis presented in Chart 3.

Chart 3 draws on HEAT's tracked cohort to show that progression rates for highattaining students improved for those who participated in at least 11 hours of activity. For least intensive packages of outreach, a three-hour threshold was introduced to allow for sufficient sample size when applying this methodology to create retrospective comparison groups.

When the composition of these activities was investigated, approximately 70% of the time had been spent on the intensive content listed above. However, in reality, the picture is likely to be far more complicated and we would like to be clear that through HEAT data we are not claiming cause and effect, simply showing relationships in the data.



