

# A core data specification for student analytics

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These two-page briefings, written by Edward Peck, are produced to support Governing Bodies and Executive Teams in discussion of key issues that will enhance student support.

Student analytics would benefit from being higher up the agenda of HE leaders. While Higher Education Providers (HEPs) typically hold the data needed as per this specification, they may be siloed rather than integrated, impeding systematic approaches to support students most at risk of non-continuation or poor wellbeing. There is potential for HEPs to be held to account for not having such systems in place. This can be tackled now.

## 1. Analytics to enhance individual student support

### What role do analytics play in higher education and student support?

Sophisticated analytics systems are enabling the identification of individual students disengaging from Higher Education Providers (HEPs) and most at-risk of non-continuation. Application of analytics will become increasingly important, driven by the student outcome regulatory framework and the need for HEPs to target support at those students most in need against the backdrop of tightening financial constraints.

Whilst the incidence of poor mental wellbeing amongst students continues to surge, the lower level of mental health disclosures by students results in HEPs often responding to students' needs only when they exhibit an escalation of symptoms. This means early intervention is more difficult to operationalise, often leaving HEPs reactive. One solution is the development of wellbeing analytics to enable HEPs to identify students who have a heightened risk of developing poor mental wellbeing. This facilitates more proactive signposting or intervention before students' needs become more serious, avoiding greater distress, and requiring less input from mental health and wellbeing teams within HEPs.

### What should HEPs do with this specification?

The purpose of this guide is to illustrate the maximum insight that current practice suggests can be derived from HEP data to enhance student engagement and wellbeing. While HEPs may choose to collect new or different data for this purpose, existing data may already be sufficient – as evidenced below – when optimally collated, analysed, and shared. Most universities which do not yet possess such systems are considering their commissioning as a short or medium-term priority.

This core specification draws on the experience of HEPs employing engagement analytics already and the smaller number utilising wellbeing analytics. While HEPs will typically be collecting and processing the data within this specification, it may be contained within disparate systems, hindering integrated analysis and insight. Appropriate input from senior HEP leaders, supported by governing bodies, may help significantly in removing any such silos and ensuring all data held are used optimally to support students.

As student analytics become more mature and widely adopted, expectations of Government, OfS, students and parents will grow regarding its shaping of HEPs' organisational policies and practices. There is the potential for HEPs to be held to account for not having in place technical solutions to collect and process these data, along with proper integration of these into planning and systematic delivery of student support across HEPs (which will be the focus of a subsequent briefing).

## 2. Core data specification

The following exemplar data specification (Figure 1) is derived from examination of existing and validated algorithmic models used in HEPs.

### Engagement analytics

Engagement or learning analytics combine and align data from multiple sources to generate a coherent understanding of students' overall engagement; these may be aggregated at a cohort, course, or individual level. Many engagement analytics systems use live data to generate near real-time engagement scores. Consistent low engagement may generate an alert concerning specific students, enabling more targeted discussions between students and those responsible for their academic progress. Engagement can be used as a proxy for continuation; some HEPs have demonstrated this correlation.

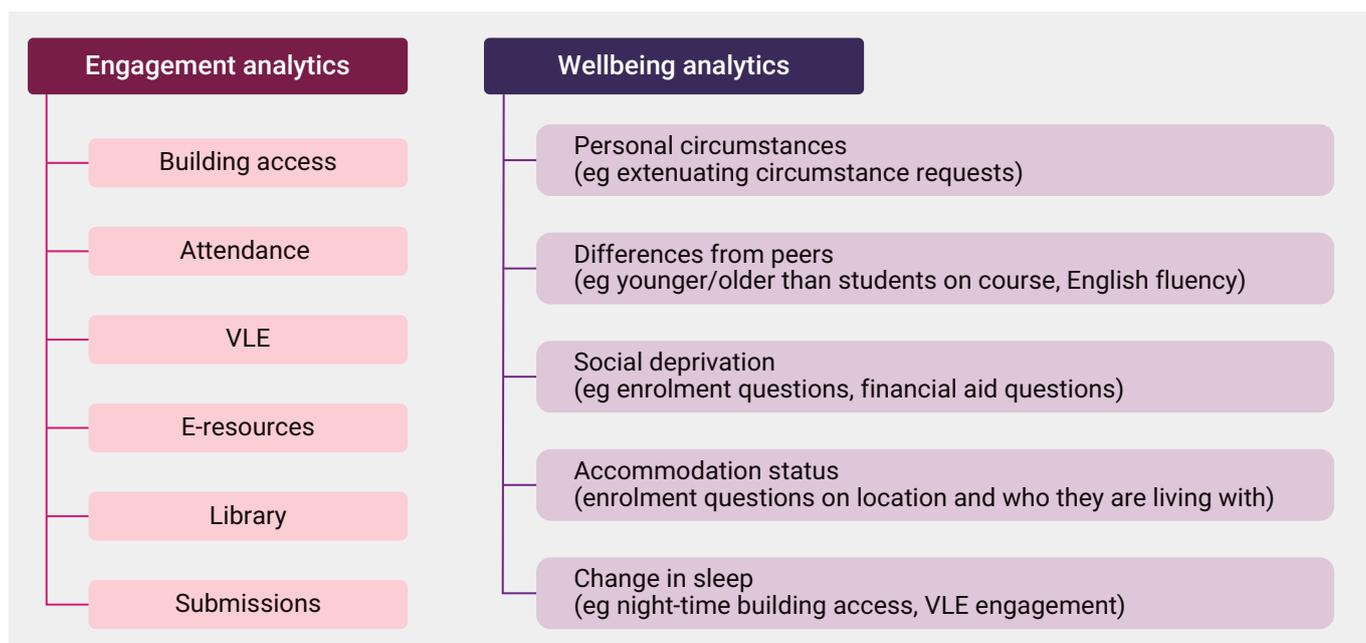
The core data are: access to university buildings; attendance at scheduled teaching sessions; virtual learning environment (VLE) usage, such as log-ins and learning resource access; use of E-resources, captured via single sign-on systems such as Shibboleth; library usage, such as taking out book loans; and assessment submissions.

### Wellbeing analytics

Wellbeing analytics have emerged more recently as a viable focus for student analytics. Northumbria University, supported through OfS, has developed a model that predicts students' wellbeing with high accuracy, as opposed to merely reporting it, allowing greater opportunity for early intervention. This model is based on research conducted with Northumbria University students and illustrates the data HEPs can use to generate predictive insight on students' wellbeing. Individual data points may not be relevant to every HEPs' student cohorts. HEPs may choose to focus on or add data points more apposite to their specific students' characteristics.

The data are proxies for factors identified through evidence reviews and interviews with practitioners and case audits to be predictors of wellbeing. For example, Northumbria students are asked at enrolment whether they are the first in their family to attend university and this is ranked within the top 20 best predictors of nearly 800 data variables entered in the data model. This is hypothesised to be an indicator of social deprivation; other HEPs may choose alternative data (e.g. eligibility for bursaries). The Northumbria model also incorporates data used in engagement analytics.

**Figure 1:** Exemplar core data specification for engagement and wellbeing analytics



A detailed version of this specification will be accessible from Jisc in March 2022.