University of Strathclyde Glasgow

LEARNING ANALYTICS POLICY

Version No.	Description	Author	Approval	Effective Date
1.0	A policy for the use of student learning analytics at the University.	Education Enhancement	Approved by Senate 31/05/23.	Academic year 2023/24 onwards

Version 1.0

Table of Contents

Introduction

1. Learning Analytics is an enhancement-led activity, providing assistive tools for staff to support students and to identify enhancements to learning and teaching. It brings together insights derived from student activity on learning systems, student voice and staff activity for and on behalf of students.

2. This policy supports a student-centric view of learning, empowering staff to take appropriate and tailored follow-up action to support students. Learning analytics can also be used for data-informed enhancement by informing learning design (see Glossary) based on a broader understanding of student learning activity and student support requirements.

3. Learning analytics leverages data about student learning behaviour, demographic data and student voice data to provide staff with immediate insights into student engagement and feedback at module, programme and institutional level. This will allow staff to understand student activity and identify areas to target student support if appropriate.

4. Learning analytics sits at the heart of our contextualised, data-informed approach to enhancement, informing decision-making and providing greater understanding of the student experience. This is brought together with existing attainment, assessment and feedback data, and student voice, to give a broader understanding of student experience and support needs within the context of their learning.

5. This policy sets out the University's approach to the use of learning analytics, including the Learning Insights dashboards (see Glossary).

6. This Policy should be read in conjunction with the University's Assessment and Feedback Policy, Student Guidance on the Use of Social Media and Virtual Learning Environments, the Student Module Evaluation Policy, the Equality, Diversity & Inclusion Policy, Dignity and Respect Policy, the Student Representation Policy, the Student Discipline Procedure and the University's Data Protection Policy, which can be accessed from the University's Data Protection pages on the website.

7. Staff members using the Learning Insights dashboards must also read this Policy in conjunction with the staff guidance and information provided for the interpretation and use of learning analytics data.

Learning Analytics: Definition

8. The University defines Learning Analytics as: *The legal and ethical collection, measurement, analysis, reporting and use of data about learners and their contexts, for the purposes of understanding and enhancing learning, and supporting students.*

Purpose of Learning Analytics

9. Learning analytics has as its purpose understanding and enhancing learning environments and assisting staff to support students.

10. Understanding and enhancing learning environments includes, but is not limited to:
    a. Reviewing activity on the Learning Management System classes, to understand how students use this platform and how this varies;
    b. Reflecting on and making changes to learning design, teaching or programme design as part of the approach to enhancement of the curriculum and broader student experience;
    c. Analysing student feedback to identify areas of strength and for improvement;
    d. Identifying, with a view to addressing, systematic variation in student experiences across demographic and other characteristics.

11. Effectively supporting students may include, but is not limited to:
    a. Analysing students' activity on the Learning Management System to identify patterns in how they use this platform and tailor learning provision;
    b. Informing nuanced learning support conversations between staff and students

12. Learning analytics may also be used in addition to existing approaches to assist staff in monitoring compliance relating to specific legal obligations (e.g. Visa compliance), module or programme requirements and/or to support specific programme accreditation requirements (e.g. minimum attendance requirements)

Learning Analytics Policy Scope

13. This policy covers Learning Insights (see Glossary) that provide insight on the student experience by presenting student engagement, student voice, and/or student attainment data.

14. This policy also covers the principles to be applied to any and all other learning analytics activities undertaken within the University.

Principles

15. Any learning analytics activity undertaken within the University must be enhancement-led in accordance with Point 9 above

16. Learning analytics activities undertaken by the University will be human-centred; that is to say that the people who will use and be affected by the analytics system will be consulted throughout its development, including in identifying requirements, defining indicators and user testing. Consultation should include both University staff (e.g. as direct users of Learning Insights dashboards) and students (e.g. as individuals directly affected by learning analytics activities).

17. Ethics shall underpin all learning analytics activities undertaken at the University, taking into account the key themes of responsibility, transparency, privacy, inclusion and accuracy as identified in the Ethics Framework. In particular, ethics must be applied at all stages of learning analytics development.

18. The University's approach to learning analytics supports data-informed decision making by providing staff with relevant data, which will allow them to better understand, monitor, and explore student learning activity, to interpret this data with reference to their own knowledge and experience, and to make decisions based on these interpretations. Therefore, learning analytics should not replace individuals' judgments with those of an algorithm or predictive model.

19. While some automated outputs may inform wider conversations or analysis, the dashboards will not be designed or used to make automated decisions (see Glossary) or to explicitly recommend a course of action about a student's attainment or progression (see also Point 41).

20. Learning analytics considers student activity on University systems such as the Learning Management System (LMS), therefore it only partly represents student activity related to academic engagement and learning. It does not capture engagement via offline study, use of on-campus spaces such as the Library and labs or engagement with peers. Similarly, it is important to understand that student activity patterns do not equate to a measure of learning. Decisions informed by learning analytics must take the limitations of this data into account.

Learning Insights

21. Learning analytics data is provided to University staff through Learning Insights. This service is owned and operated by the Education Enhancement Directorate in collaboration with ISD. Insights provided include student voice dashboards (including Student Module Evaluation and Student Surveys), and engagement dashboards providing high level indicators and/or focussed insights around a particular theme or activity. Where analytics crosses over into Business Intelligence, Education Enhancement will work with Strategy & Planning to ensure alignment and adherence to agreed data definitions.

22. Principles 24-27 below apply specifically to the design and use of Learning Insights dashboards, however they are also applicable to other learning analytics activities and must be followed where possible and practical:

23. Potential ways in which the presentation of learning analytics data may bias decision making must be taken into account and mitigated as far as possible (e.g. through the design of data visualisations such as dashboards and/or the provision of support and resources to users).

24. Student voice data (see Glossary) provides a valuable perspective on aspects of engagement in learning activities, helping to provide a broader view of the student experience by including the student perspective. Therefore learning analytics can bring together student voice with activity data where relevant.

25. Student voice data used in learning analytics (e.g. within Learning Insights dashboards) will be shown in aggregated form, i.e. responses will not be attributable to individual students.

26. Student voice data may be displayed in survey or thematic student voice dashboards or within a wider dashboard combining other data e.g. engagement. No individual survey responses will be identifiable from any student voice data sources that are shown in the dashboards.

Data Sources and How We Use Your Data

27. All student and staff data in Learning Insights dashboards is gathered and processed in accordance with Data Protection legislation, as set out in the University's Student Privacy Notice, the University's Privacy Notice – Staff and Other Categories and where relevant the Student Module Evaluation Privacy Notice.

28. Data sources used in the Learning Insights dashboards include, but are not limited to: the Learning Management System, Student Module Evaluation data, Student Survey data and the Enterprise Data Warehouse. All data is held securely and access to each of these data sources is restricted to members of University staff who require it in order to carry out their role.

29. Engagement dashboards at both module and programme level, by their nature, require students to be identifiable. The information presented in Learning Insights is already available to specified members of staff (e.g. Department/Faculty staff and some administrative colleagues) via the Learning Management System logs, however it will be visualised in dashboards to facilitate more meaningful insight into student learning behaviour and support needs.

30. An individual student's personal characteristics (e.g. demographic information) will never be shown alongside their activity on a module or Programme.

31. Special category data is held separately and reported on at an aggregate level only, with data grouped at a suitably high level to ensure that no individual can be identified.

32. Users of the Learning Insights dashboards do not have access to any additional underlying data sources e.g. the Enterprise Data Warehouse or individual survey response data. Similarly, access to the Learning Insights dashboards does not grant access to view an individual student's special category data.

33. Visibility of Programme-level insights which identify individual students will be limited to Head of Department/School and other nominated individuals. This may include Directors of Teaching, Faculty level and Professional Services staff and other staff taking a pastoral role in a Programme or Department/School.

34. The Learning Insights Procedures provide further information on the management of the Learning Insights dashboards.

Analysis and Interpretation of Learning Analytics Data

35. Principles 37-45 detailed below apply to the analysis and interpretation of data presented in Learning Insights dashboards, however they must also be applied to the wider learning analytics activities undertaken within the University.

36. Learning analytics data is most valuable when it is used to drive, inform and support wider conversations with both staff and students to maximise the potential for enhancement. Where decisions are taken with partial reference to learning analytics data, this must always come after a process of active dialogue with the staff/students affected, aimed at supporting the affected individuals in the first instance.

37. While it is a valuable source of insight learning analytics data brings with it limitations, some of which are outlined in the points below. The presentation of learning analytics data must be accompanied by contextual information and/or guidance notes to aid user interpretation. Similarly, users must familiarise themselves with the guidance provided prior to taking any further action based on data presented in Learning Insights dashboards or other learning analytics.

38. Consideration must be given to the learning analytics information being presented relative to programme and/or curriculum design; specifically how representative this is of all activity on a programme and the different ways that students could, or are expected to, engage with their studies.

39. The behavioural engagement indicators provided in the Learning Insights dashboards are predominantly focussed on Learning Management System activity; other student engagement activity such as labs, group work, Library visits and other offline study methods are not provided. Therefore, the engagement insights displayed in the dashboards must not be taken as a proxy measure of a student's overall engagement in their studies as it is necessary to consider the wider context.

40. Learning analytics data provides only a partial and contextually-variable indicator of student engagement. Therefore it must not be used as the primary or sole basis or evidence for a decision affecting an outcome for a student or a member of staff and for adaptations to modules and programmes.

41. Engagement dashboards present behavioural engagement, however this does not equate to an indicator of learning. Similarly, high levels of behavioural engagement does not necessarily imply that a particular learning outcome will be attained.

42. Similarly learning analytics insights do not constitute a measure of staff teaching practice or performance, nor does student engagement provide an indicator of teaching quality.

43. Learning analytics data pertaining to students who require particular adaptations to support their learning (e.g. students with certain types of disability) may look different to the typical data for the class or cohort. This is important to bear in mind when interpreting such data, as patterns and behaviours may not be directly comparable with those of other students or the class as a whole.

44. Student voice data (including survey responses and other feedback mechanisms) is, by definition, self-selecting therefore may not represent the views of an entire cohort of students. Information and guidance relating to methodologies used, including sampling and validity of results, is presented alongside student voice reports to aid with interpretation. The Student Surveys SharePoint site provides details of the methodology used in each of the main student surveys run at the University.

Data Retention and Archiving

45. Data held within the Learning Insights dashboards will be in accordance with agreed retention periods, taking into account relevant data protection considerations. Personal data will be pseudonymised/anonymised at the earliest possible opportunity, where appropriate.

46. Data held within the Learning Insights dashboards will be regularly refreshed to reflect changes made through University systems. Therefore, any changes made to an individual student's record may not be instantaneously reflected in learning analytics.

Glossary of Terms

There are many similar and sometimes overlapping terms used within the sector related to learning analytics (e.g. curriculum analytics, educational analytics, business information). For the purposes of this Policy, the terms being used at Strathclyde are defined below.

Term	Definition
Aggregate reporting	Dashboards or other reports which combine the responses for a specified group or groups of respondents into a whole entity e.g. a Department/School dashboard shows a summary of the results from all student responses in that Department/School.
Automated decision / Automated decision-making	Automated decision-making, as defined by the ICO (Information Commissioner's Office), is the process of making a decision by automated means without any human involvement. These decisions can be based on factual data, as well as on digitally created profiles or inferred data. Examples of this include: • an online decision to award a loan; and • an aptitude test used for recruitment which uses pre-programmed algorithms and criteria
Business Intelligence / Business Analytics	Business Intelligence at The University of Strathclyde is governed and driven by Strategy & Planning and currently defined as a business-driven process, supported by software and hardware technologies, that brings data from corporate source systems together into the Enterprise Data Warehouse, subject to data quality controls, and makes regularly refreshed management information based on agreed data definitions (business glossary) available to decision makers and support staff via Dashboards, Reports and Analysis in SUnBIRD (Strathclyde University's Business Intelligence Reports and Dashboards).
Curriculum analytics	The analysis of curriculum to understand the objectives, structure, content and purpose of a course, its complexity, suitability, relevance, potential for student progress, pathways and personalisation.
Dashboard	A vehicle for the dynamic presentation of data with interaction enabling user insights via exploration and visualization.
Demographics	Characteristics used to describe a population group or sub-group of individuals e.g. gender, age, ethnicity, domicile etc.
Engagement Focussed Insights	Engagement indicators that provide specific measures of students' engagement with particular activities and resources. These primarily capture behavioural engagement but may also allow inferences about cognitive engagement. Contrary to the Engagement Pulse Check, Focussed Insights data points include assorted other, activity-specific indicators (e.g. assessment extension decisions, forum post word counts, etc.) alongside actions.
Engagement Pulse Check	Engagement indicators that provide a general, high-level summary of the scale and rhythm of behavioural engagement. This involves taking the

Term	Definition
	Learning Management System action as the basic data point, and pairing it with some contextual ones (date, time, student, class, action type, etc.). The Engagement Pulse-Check insights can assist staff in identifying where a particular student or group of students may need support or further follow-up based on their level of activity on a Learning Management System site.
Learning analytics	There are multiple definitions of learning analytics across the HE sector. At Strathclyde, this is defined as the legal and ethical collection, measurement, analysis, reporting and use of data about learners and their contexts, for the purposes of understanding and enhancing learning and supporting students. Data gathered includes information about student activity on the Learning Management System combined with the student record and student survey results.
Learning Design	Learning design is a process that encompasses the thoughtful planning of a learner's journey, constructing that journey, delivering it in some form and, finally, reflecting and reviewing on the outcomes. (University of Edinburgh, 2019) Learning design can be defined as the methodology that enables teachers or designers to make more informed decisions in designing learning activities and interventions, which are pedagogically informed and make effective use of appropriate resources and technologies. A key principle of learning design is making the design process more explicit and shareable. (Lilliann Buus, 2018)
Learning Management System	A learning management system (LMS) is a software application for the administration, documentation, tracking, reporting, automation, and delivery of educational courses, training programs, materials or learning and development programs. (Wikipedia, 2023) The University currently uses Moodle (referred to at Strathclyde as Myplace) as its Learning Management System, also referred to as the Virtual Learning Environment (VLE).
Measures of attainment	Measures of attainment include, for example, grades, marks, or classifications.
Module	The individual components of a programme, usually worth 10 or 20 credits.
Programme	A programme of study leading to an award. May also be referred to as "course".
Learning Insights	Learning analytics service provided by Education Enhancement. All insights are derived from student activity, student voice or staff activity for and on behalf of students.

Term	Definition
Learning Insights Dashboard	Dashboards that provide insight on the Strathclyde student learning experience via dynamic presentation of student engagement, student voice, and/or student attainment data.
Student activity	Refers to activity that students undertake within education systems such as the Learning Management System, e.g. downloading or viewing videos for a module.
Student engagement	A complex concept, capturing students' levels and types of activity on, and investment in, their learning experience. Engagement has multiple dimensions, including behavioural (actions), cognitive (thoughts) and emotional (feelings). It is important to note that not all of these dimensions are easily quantifiable or identifiable in dashboards.
Student engagement data	Data representing students' levels, types, and patterns of engagement with their studies. This may cover behavioral, cognitive, or emotional engagement. It should be noted that not all facets of students' engagement can be readily quantifiable/measurable or identifiable, therefore presentations of student data is unlikely to provide a holistic view of a student's overall engagement.
Student voice data / student feedback	Data pertaining to institutional student survey responses, including student module evaluation. Student voice data reflects students' opinions and experiences and is subjective in nature. Student voice does not refer to any particular feedback system. It can also be referred to as student feedback.
Thematic dashboard	A dashboard with a particular thematic focus (e.g. assessment and feedback), which draws together multiple, relevant data sources (e.g. Pulse Check, Focussed Insights and Student Voice data points) to help tell a story around that theme.

Appendix: Ethics Framework

Introduction

From data protection to unbiased analysis, ethical questions arise at all stages of the learning analytics process. For this reason, a robust ethical framework is required as a foundation for a learning analytics service at Strathclyde.

- This paper provides a summary of how ethics is understood to relate to and underpin learning analytics at Strathclyde. It is designed to serve as a touchstone for the development and use of our Student Insights dashboards, and for other learning analytics work across the institution.

It has been informed by discussions with colleagues and a thorough review of the literature on ethics and learning analytics. A list of references included at the end of this document.

Learning analytics is an evolving field, as is scholarship on the ethical dimensions of data, analytics, and technology. Therefore this framework will be regularly reviewed.

Outline of an ethical framework

A general framework for considering the ethical dimensions of student insight analytics is outlined in Figure 1. It consists of **three guiding principles**, that express the fundamental role of ethics in analytical inquiry, and **five overlapping themes/values**, that encapsulate the various ethical considerations that emerge when doing student insight analytics.

More specific ethical principles, rules, guidelines and policies have emerged under these five themes. These are developed with reference to this framework and input from consultation with colleagues and other interested parties. These are discussed in the procedures that accompany this document and the institution's Learning Analytics Policy. However, to make the principles discussed here more concrete, a of practical situations where they will be applicable is provided at the end of this document.

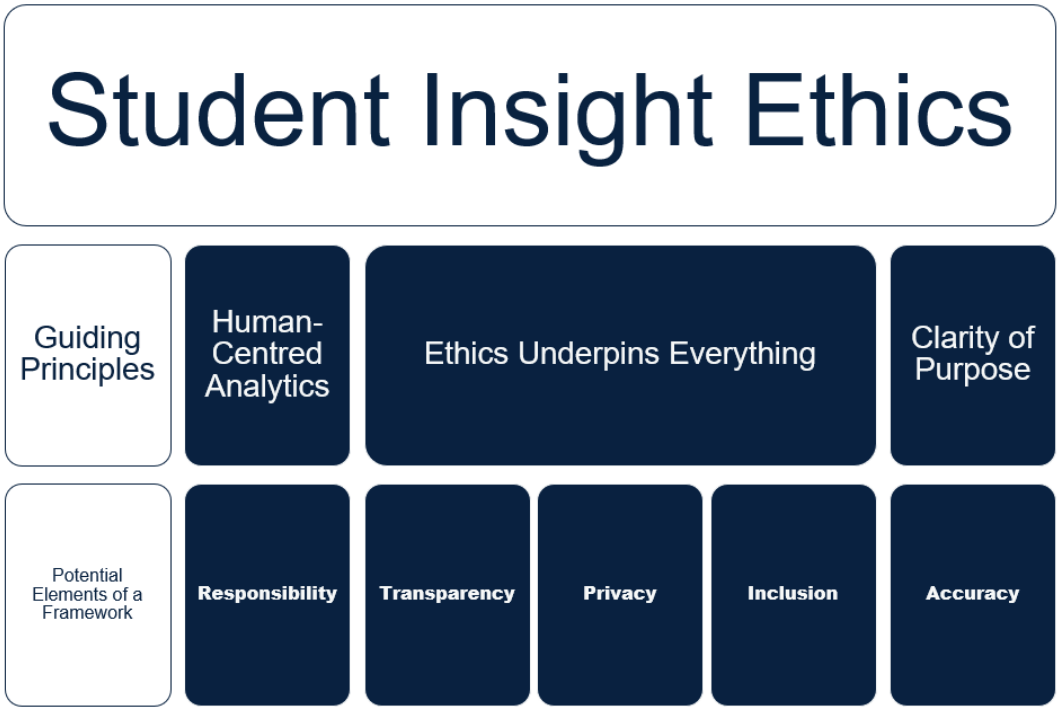

Figure 1

In summary, the three guiding principles are taken to mean the following:

- **Human-centred analytics**: that the people who will use and be affected by the analytics system will be consulted throughout its development, including in identifying requirements, defining indicators and user testing. This consultation includes both University staff (e.g. as direct users of dashboards) and students (e.g. as individuals directly affected by learning analytics activities). This principle aligns with "people-orientedness" being one of Strathclyde's organisational values.
- **Ethics underpins everything**: there are ethical dimensions to all aspects of the analytics process, including data collection, analytical procedures, dashboard design, and resource-creation. Ethics is not merely a matter of policy/governance.
- **Clarity of purpose**: a definition of, and agreement on, the purposes of learning analytics underpins how the practice should be conducted and how any systems can and should be used. Ethical arguments will refer back to these purposes for justification.

The purposes of learning analytics at Strathclyde were arrived at and refined through a process of reflection and wide consultation.

At Strathclyde, learning analytics is defined as:

The legal and ethical collection, measurement, analysis, reporting and use of data about learners and their contexts, for the purposes of understanding and enhancing learning and supporting students.

Learning analytics has as its purposes understanding and enhancing learning environments and assisting staff to support students. Review of the literature on the ethics of learning and educational analytics suggests a number of issues, challenges and questions that can be categorised under at least five themes. Figure 2 presents a summary of these. For more detail on each of the issues summarised by the bullet points, colleagues are invited to consult the references listed at the end of this document.

The items listed under 'Privacy' are not intended to summarise obligations under data protection legislation, but reflect considerations from an ethical perspective (which may relate to but is not identical with a legal one).

Responsibility

Figure 2

Practical implications of these guiding principles and themes/values need to be considered at all stages of work on learning analytics, during and beyond this project. Areas where this ethical framework is relevant to practical work may include:

- **Development of policy/procedures** – e.g. Equality Impact Assessment; Data Protection Impact Assessment.
- **Data collection, management and storage** – e.g. what data is legitimate to collect; rules for appropriate anonymisation of data; communication around scope of data collection.

- **Data analysis** – e.g. avoidance of biased metrics and models.
- **Dashboard purpose and design** – e.g. open dialogue around purposes and use-cases; publication thresholds and sensitive approach to what data is visualised and how.
- **Dashboard access and permissions** – e.g. defined roles and responsibilities; restricted access to sensitive data.
- **Staff development and guidance for interpretation and use** – e.g. shared understanding of purpose; familiarity with data protection rules; guidance on accurate interpretation of data.

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