Title	Learning Analytics Framework
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1. PURPOSE
To present for approval a framework for the institutional use of Learning Analytics by all relevant stakeholders.

2. EXECUTIVE SUMMARY
This paper outlines a framework for the use of Learning Analytics in the institution and following discussion at LEP seeks ratification at Education and Student Experience Committee. The purpose of this is to coordinate practice and development institutionally in a rapidly growing field. This aims to help realise the benefits of Learning Analytics and to reduce divergent or duplication in practice. The initial section details a review of sectoral practice and outlines some principles and assumptions.

The management of the resource implications of this proposal will fall within the Teaching and Learning Academy.

3. FINANCIAL IMPLICATIONS/RISK ANALYSIS
Risks of not having a framework are outlined in the report, page 3.

4. RECOMMENDATION

For approval/endorsement/information/discussion: Approval

Proposed Learning Analytics Framework

This document is a proposed framework to develop and coordinate the use of Learning Analytics (LA) at LJMU. It draws upon some of the current HE landscape and policies regarding LA to help to arrive at an approach that, whilst unique to LJMU remains consistent with the sector in what is still a highly formative area.

Overview

Learning analytics is described as 'the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs'. Learning analytics is concerned with combination and analysis of student engagement and learning (e.g., data generated by learning management systems, student systems, library systems and other sources related to learning and teaching). These data can then be used to describe and articulate systems and learning design, evaluate student engagement and make changes to improve teaching and learning. While the use of Learning Analytics at the University is still formative, there are a few activities, at pilot scale or larger, which would be helpful to coordinate.

Development of this framework has been informed by examination of Learning Analytics policies and Frameworks from several institutions, as well as a review of the literature in this area. This has helped to establish what is being done across the sector and how these approaches can be developed and enhanced. In addition, there was consultation with Academic centres, facilitated through attendances at all FMT and several SMT meetings, as well as engagement with ITS and library services.

Framework Assumptions and Principles

1. Data captures a significant component of student activity, but this picture is far from complete.

Learning Analytics Data should be regarded as potentially indicative of some elements of student behaviours, but any conclusions should be rigorously analysed and subjected to appropriate critique. Algorithms and data models can contain inherent bias and should not be applied without due consideration of such biases.

2. Student learning data should only be collected, stored and used in a manner that is underpinned by strong ethical and legal principles.

These are presently outlined in the Technology Enhanced Learning DPIA. Regulatory compliance is essential but should only be regarded as a baseline. As a university we should be setting the standard with respect to the ethical use of data in this way and this should be continually reviewed.

3. The use of data should be to enhance teaching and learning and the overall student experience.

Data should only be collected and analysed with this purpose, and we should be transparent with students about what is taking place and ensure practice aligns with institutional data protection policies.

4. Learning Analytics data should be stored centrally and appropriately without needless duplication.

Users and consumers of this data should coordinate activity to minimise any duplication or repetition.

5. Data should be presented in a format that is appropriate and easy to access for the user(s)

Staff and students should be supported in their digital fluency with respect to data to ensure that Analytics realises their full potential benefits. It is important the institution helps staff and students to understand the benefits implications of the use of data in this way.

Potential purposes of Learning Analytics at LJMU

Learning analytics approaches can support a range of activities within the institution. While to date they have been explored by universities primarily as means to improve retention, they also have potential benefits for the enhancement of student experience.

- Quality – Learning analytics can be used as a form of feedback on the efficacy of pedagogical design. Academic teams can reflect on analytics about student activity (individual or cohort) as part of course review and re-design processes, as well as potentially using analytics as a form of in-course monitoring and feedback. Individual staff can use learning analytics to consider the impact of their teaching.
- Equity – Learning analytics approaches can allow us to see more nuanced views with respect to diversity of our student population, address assumptions that we may be making, and allow supportive resources to be directed where it is most needed.

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  - Personalised feedback – Learning analytics can be used to tailor the messages and support that we offer to our students, providing more personalised feedback to support student reflection and academic planning.
    Coping with scale – With the challenge of growing cohorts of students, learning analytics can help to strengthen the academic relationship by doing some of the heavy lifting of identifying individuals or groups of individuals that might benefit from particular interventions or information from staff.
  - Student Experience – In addition to supporting a more personalised experience, learning analytics can improve progression and retention, ensure that our academic offerings align with the needs and goals of students, and support satisfaction and wellbeing. Analytics can also be used to promote critical reflection skills and enable our students to take responsibility for their own learning.
  - Skills – Interactions with analytics as part of the University learning experience can help our students build 'digital capability' and prompt more critical reflection on how data about them is being used more generally, what consent might actually mean and how algorithms work across datasets to define and profile individuals. Analytics approaches can also be used to promote the development of key employability skills. Supporting staff to develop skills in working with learning analytics applications is also an investment in institutional capacity and leadership.
  - Efficiency – Learning analytics can be used to evaluate and demonstrate institutional efficiency through a) measuring the impact of initiatives and validating those benefits are being realised and b) demonstrating that publiclyfunded resource is being deployed in support of the best outcomes of all students.

The TLA has undertaken extensive work in the area of Learning Analytics, increasing significantly over the previous 18 months (Appendix 1) What In order to encapsulate the described principles and help to realise some of the potential benefits with respect to Learning Analytics, it is proposed that LJMU adopt a framework of use, a recommended set of steps and behaviours which can be applied to the development and implementation of LA at LJMU

Risks of not developing a framework
- Rapid expansion – Learning Analytics is a huge growth area practice could become divergent. Once established, this can be difficult to unpick or change.
- Data quality – Different actors across the institution may use different data in the same way or similar data employing different methods. This leads to a potential lack of validity across the institution when trying to apply analytics in one area.

- Duplication of effort – The framework seeks to coordinate activity. Without coordination there is a risk of similar work taking place in separate areas

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  Lack of clarity - Without clear articulation of values, benefits and assessment of impact, analytics activity could become too exploratory and not necessarily linked to institutional goals and aims.
- User acceptance – It is important to clearly articulate the benefits and value associated with Learning Analytics to staff and students. Without clearly stated common approaches and coordination in terms of presentation and design it will be difficult to establish trust in the data.
- Management of workload – Increasing demand for Analytics must be carefully managed. Without clear guidance and expectation management this demand could outstrip available resource.

Proposed Framework - 4 point model

Data Quality   Values and Ethics   User Acceptance   Alignment with
                                                 and Digital capability   Institutional Aims

Data Quality and Effectiveness

It should be acknowledged that Analytics developments frequently help to identify and pose questions rather than providing definitive answers.   Analytics and data models should be continually monitored for accuracy by their developers and any inaccuracies found remedied and communicated to stakeholders. Any use of algorithmic or automated processing should include thorough investigation of any potential bias.

- Data Quality Management – institutional data to be collected and stored centrally and in ways that align with more consistent data analytics.
- Data collection methodologies should be clearly defined and adhered to.
- Data used should be 'live' where possible with reports and dashboards being updated dynamically.

- Procurements for any new teaching and learning or curriculum-oriented software services should be evaluated against data produced and ability to support analytics.
  Consideration should be given to whom and how these analytics are shared.
- Impact and goals of analytics data should be clearly defined and evaluated, and these should focus on supporting retention and progression, Teaching and Learning and the student experience.
- When developing Learning Analytic approaches, it should be considered that LJMU is a broad church and that analytics should account for local trends and differing modality of delivery across the institution.

Values and Ethics

Analytics should support student learning and complement other mechanisms for accessing students' opinions. They are not a replacement for dialogue with students. hey are supplementary and complimentary to existing formal and informal mechanisms.

- Transparency and equity - There should be a clear communication plan sign posting to students as to how their learning data is to be used and risks and benefits of this.
- Data protection – Our ethics should be thorough and go beyond simple regulatory compliance. Ongoing communication with the DPO and keeping ahead of new developments and their ethical implications will help to ensure this
- Automation and Machine Learning – These approaches should be approached with caution and evaluated for Bias that may prove discriminatory

User Acceptance and data literacy

Clear and ongoing communication with staff regarding how and why analytics data is to be used is important in establishing trust

- Data should be shared in ways that align with user expectation. Users should not have to re-learn multiple reports and interfaces
- Analytics should be designed and presented in a way that facilitates ease of access and engagement for users across multiple, varied reports. Links to guidance for reports and dashboards should be clearly signposted.
- Analytics should clearly describe the link between the data being used to the enhancement student experience, student progression, teaching and learning, or development of pedagogy.

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- Training and support should be given to staff in how to parse and interpret analytics data and how best to initiate interventions and communications
Alignment with Institutional Aims
- Analytics to align with and support existing institutional projects (some detailed in appendix 1)
- Analytics and engagement data to support business cases for additional investment in learning technologies and innovative pedagogy.
- Analytics to be supportive of and form part of the new Teaching and Learning Strategy.
- Enhance the existing use of Analytics data alongside Module Evaluation and NSS data to try to identify.

Next Steps
To maximise current capacity for canvas analytics, the following activities are recommended:

- Establish coordination of key stakeholders involved with Learning Analytics (e.g. Representatives from: academic centres, TLA, library, ITS, registry services). Share information, practice and establish common purpose
- Upgrade existing 'Canvas Data' with 'Canvas Data 2' offered by Infrastructure.
- Evaluate enhancements afforded by 'Canvas Data 2' to identify potential enhancements for Analytics.
- Continue to work with Module Evaluation team and Strategic planning
- Develop Analytics for use with asynchronous video delivery (Panopto) and the shift from Zoom to MSTeams.
- Continue to expand existing training and development offering to ensure users are supported in the development of their digital capabilities with respect to establishing value from Learning Analytics
- Work as part of CourseLoop strategic steering group to identify how use of curriculum data can further enhance Analytics

Appendixes

Appendix 1. Scheme of work for TLA in context of analytics

Work to Date	In Progress/Ongoing	Development
Covid Canvas 'Health check'	TEL Development/Training Attendance	Learning Analytics coordination with other stakeholders
Enhanced Canvas Analytics - ABL	Requirements gathering for framework and faculty developments	Continue with staff development offering
Referral Assessment Dashboard	NSS and Learning Technology	LA CPD
Zoom Analytics	DA and Ofsted	Replace Zoom Analytics with asynchronous equivalent (MS Teams?)
OfS Canvas 'At risk' Dashboard	School level dashboard	Panopto Analytics
Module Evaluation Initial Modelling	Canvas Data 2 migration	Data request process
Study Skills Analytics	Development alignment with LDE	Data Privacy Impact Assessment
Student Governance Reporting Dashboard	Laptop Scheme student access	Provide indicators of 'Value for Money' and Business case for investment
	Canvas report for LEP	