SHEILA analytics Policy Framework v.1

This policy draft is based on the analysis of institutional interviews (n=64) using the ROMA framework. Four key elements are included in this policy framework, including action, challenges, and policy.

- **Action**: strategic action points to take in each step of the ROMA framework.
- **Challenges**: potential challenges that exist in each step of the ROMA framework. These challenges fall in categories that are organised alphabetically – capabilities, culture, infrastructure, management, methodology, ethics, and privacy.
- **Policy**: questions to guide the development of a policy that addresses the listed action points and challenges. These questions fall in categories that are organised alphabetically – data management, evaluation, methodology, policy management, purpose, and stakeholder engagement.

<table>
<tr><th colspan="3">Component 1 – Map political context</th></tr>
<tr><th>ACTION</th><th>CHALLENGES</th><th>POLICY</th></tr>
<tr>
<td>• Identify internal and external drivers for learning analytics (e.g., problems to solve).
• Consider contextual elements (e.g., institutional size, structure) to identify opportunities for learning analytics.
• Identify opportunities to build learning analytics upon existing projects or practice.</td>
<td>Infrastructure
• Existing solutions in the market mainly focus on addressing retention problems.
• There is no one-size-fits-all model, even within one institution (different disciplines and learning modes).
Management
• Learning analytics competes with other institutional priorities.
Methodology
• Institutions feel pressured to adopt learning analytics even though the needs for it are unclear.
• Wrongly assume that learning analytics can provide all answers without having identified a question first (data driven approach).
• Learning analytics does not generate new insights into the understanding of learning or teaching.</td>
<td>Purpose
• What are the reasons for adopting learning analytics?
• What are the questions to solve with learning analytics?</td>
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Component 2 – Identify key stakeholders		
ACTION	**CHALLENGES**	**POLICY**
• Identify primary users of learning analytics (e.g., students, teaching staff, and senior managers). • Identify senior management team to gain support (e.g., vice-chancellors, principals, provosts). • Identify professional teams (e.g., IT, legal team, strategy team, Student Support, Student Registry, library). • Identify academic teams (e.g. Learning & Teaching committee, Digital Learning Committee, research project teams) • Identify external partners (e.g., researchers and service providers) • Identify internal advocates of learning analytics among members of faculties (bottom-up approach).	*Ethics & privacy* • Marginalise hard-to-reach students by drawing a distinction between students who opt out and those who opt into a learning analytics service. • The choice of opt-out or not opt-in could affect those who choose to opt in regarding the quality of data and services provided. *Management* • Define ownership and responsibilities among diverse professional groups within the university *Privacy* • Data sharing (particularly with third parties) requires a careful check of security issues and breaches of privacy.	*Data management* • How will consent be obtained? • Is there an option to opt-out of any data collection and analysis? • Who can access the data? • Who owns the data? • Will data be included in personally-identifiable formats? • Can collected data be edited or deleted upon request? *Methodology* • Whose data will be collected? *Stakeholder engagement* • Who is the policy for? Whose working activities will the policy shape? • How will responsibilities be defined for each stakeholder? • Will the policy cover those who choose to opt out (or not to opt into) a learning analytics service?

Component 3 – Identify desired behaviour changes		
ACTION	**CHALLENGES**	**POLICY**
• Identify areas where different stakeholders will be supported by learning analytics (macro level – institution, meso level – department/ programme , and micro level – teaching staff or students). • Consider responsibilities and implications for all stakeholders. • Consider inadvertent consequences.	*Capabilities* • Immature skills of interpreting data lead to wrong decisions. *Ethics & privacy* • People mistrust the result of an analysis if the process is not transparent or if the analytical model is too complicated to understand.	*Methodology* • How will transparency be achieved throughout a project cycle? *Purpose* • What changes will learning analytics bring to the current situation? • Why are these changes important to us?

• Identify expected ‘changes’ to the current context.	• Unethical profiling of students may occur when selecting those that are more likely to succeed. *Management* • Students may be prone to choose subjects where they are likely to perform well. • Users may game a LA system. • Those who need support may not necessarily make use of information from learning analytics. *Methodology* • An experimental approach is susceptible to a sense of uncertainty in delivering the expected changes. •	*Stakeholder engagement* • What are the mechanisms to deal with inadvertent consequences? • Who will benefit from learning analytics? • How will the purpose of learning analytics be communicated to primary users?
Component 4 – Develop engagement strategy (*tends to iterate with step 5)		
ACTION	**CHALLENGES**	**POLICY**
• Consult relevant policies and codes of practice (e.g., Jisc’s *Code of Practice for Learning Analytics*, and data protection policies) • Align learning analytics with the wider institutional strategies or introduce learning analytics into the university’s strategy. • Seek funding. • Appoint specialists to lead learning analytics projects. • Establish a working group and define a clear leadership structure. • Consider establishing an ethics commission. • Raise awareness through publicity and meetings/ workshops/ conferences.Establish	*Ethics & privacy* • Learning analytics may induce fear and discomfort about surveillance. • Existing data protection regulations could restrict the way learning analytics is operated. • It is arguable to base predictive models on pre-determined factors, such as demographic characteristics. • Predictive models may result in unequal access to learning or support resources among students. • Focus on students with a specific profile (e.g., struggling students, drop out risks) and ignore others. *Management*	*Methodology* • What kinds of data will be collected to achieve these objectives? • What is the scope of data collection? • What kinds of data will be presented? How? To whom? • How should data be interpreted? Who will be involved in this process? • How will resources be distributed efficiently and fairly as a result of the analysis of data? • Will there be interventions based on analytics? Who will decide the interventions? • How will interventions take place?

communication channels between different stakeholders across the institution. • Consider phases of implementation (e.g., explore data, carry out pilot projects, seek feedback from users, and develop a policy for the adoption of learning analytics). • Decide the scope of the project – the range of data. • Choose analytical models and define metrics. • Consider the best ways to present analytics results (e.g., visualisation). • Select data that will be fed back to different stakeholders. • Provide training for users. • Consider providing a safe environment (e.g., a sandbox) for testing or research purposes. • Decide forms of interventions (e.g., automatic systems, personal contacts, learning resources). • Engage with research projects locally or through collaboration with other institutions.	• Overloading primary users with too many e-mails about analytics results. • Strict data protection laws could hamper the adoption of learning analytics. *Methodology* • Over rely on data and fail to consider the experience and knowledge of instructor/ tutors about students. • Leaving feedback loop unclosed (no follow-up support) leaves students in anxiety and potentially demotivates them. • Focus on identifying students at risk and overlook the pedagogical design of curriculum or learning support. • Peer comparison may demotivate students. • Unsuccessful students may be discouraged by warning messages.	• Who will be affected by the interventions? • Who will oversee ethical conducts related to learning analytics? *Purpose* • What are the objectives for learning analytics? How do they align with the institution's vision for education? • Will learning analytics be used as a management tool to monitor students as well as staff? • Will learning analytics be used as a deficit model targeted at supporting students at risk of failure?
Component 5 – Analyse internal capacity to effect change		
ACTION	**CHALLENGES**	**POLICY**
• Evaluate risks. • Evaluate technological infrastructure. • Establish indicators of data quality and system efficacy • Evaluate human capacity (e.g., data literacy, relevant expertise, staff workload, opportunities for skill transfer).	*Capabilities* • The maturity of data literacy varies among stakeholders and faculties. • The lack of critical self-reflection skills reduces the chance to benefit from learning analytics.	*Data management* • How will the data be stored and disposed? • How often will the efficiency and security of existing data infrastructure be evaluated? *Methodology*

• Evaluate financial capacity. • Evaluate existing legal framework and its applicability for learning analytics. • Evaluate institutional culture (e.g., trust in data and openness to changes and innovation). • Evaluate resources available for primary users to uptake learning analytics (e.g., ownership of mobile devices)	• The understanding/ interpretation of data protection regulations vary among legal officers, researchers, and teaching staff. • Digital capabilities affect the desire to opt into a learning analytics service. • Limited awareness or discussion regarding privacy and ethical issues cripple the adoption of learning analytics when issues arise. *Culture* • Institution-wide buy-in is hard to reach. • Instructors are more interested in establishing a research profile than enhancing teaching and learning. • Senior managers are more interested in financial benefits to the institution than the benefits in enhancing learning and teaching. • There is unequal engagement/ interest in learning analytics among primary users (e.g., differences in gender, age, and disciplines influence the degree of interest). • There is no common understanding of learning analytics among stakeholders at different levels (e.g., managers, teaching staff, IT officers, and students). • Concerns about data protection hinder buy-in. • Reluctance to change is present among some teaching staff (e.g., try new or unfamiliar technologies, or change teaching styles). • Training could be difficult to deliver when staff lack time. *Infrastructure* • Some useful data remains inaccessible.	• How will data integrity be achieved? • Is there an application procedure for using learning analytics for research or teaching purposes? Are the procedures different? *Policy management* • Are there related policies in the university that the policy sits alongside/above/below? • Are there any national/international policies that this policy has to adhere to? • What mechanisms will be used to communicate the policy effectively to stakeholders? *Stakeholder engagement* • What training will be deployed to scale up data literacy and incorporate learning analytics into daily practice? Will the training be compulsory for any stakeholder? • What communication channels or feedback mechanisms will be in place? • Will learning analytics exclude certain groups of students? Will there be mechanisms to address inequality? • How will the current policy be communicated to different stakeholders?

	• Data is held in silos. • Data is fragmented. • Data is noisy. • Setting up a learning analytics environment is costly. *Management* • 2018 GDPR requires changes in existing practice and system (e.g., coping with individual opt-outs). • Central steering groups and individual project groups do not coordinate. • Engaging students with institutional policies in an informed way.	
Component 6 – Establish monitoring and learning frameworks		
ACTION	**CHALLENGES**	**POLICY**
• Set up measurable milestones. • Establish qualitative and quantitative indicators of success. • Seek feedback from primary users through various channels. • Develop methods to triangulate analytics results.	*Culture* • Low participation of primary stakeholders in top-down consultations (e.g., survey and meetings). *Management* • Manage expectations (e.g., deliverables and impact).*Methodology* • It could be hard to isolate learning analytics from parallel projects that support the same goals (e.g., enhance learning and teaching) when measuring success. • Fail to recognise and address limitations of data and analytics models (e.g., uncapturable factors of learning, ineffective metrics, existing bias, inaccuracy of predictions). • Overly depend on data that is conveniently available to justify a learning phenomenon.	*Evaluation* • What defines success or failure? How will success be measured? What are success indicators? • When will evaluation take place? • Who will carry out the evaluation of impact? • How will the utmost rigour and validity in data be achieved? • What are the limitations of learning analytics? *Policy management* • How often will the policy be reviewed and updated? • Who will be responsible for the policy?

	• Fail to contextualise data. • Wrongly assume causal relationship between certain learning outcomes and interventions. • Interventions introduced to one course may have negative impact on student engagement in another course. • Emphasise measuring output (learning or teaching performance) and overlook developing input (e.g., strategies, skill development)	